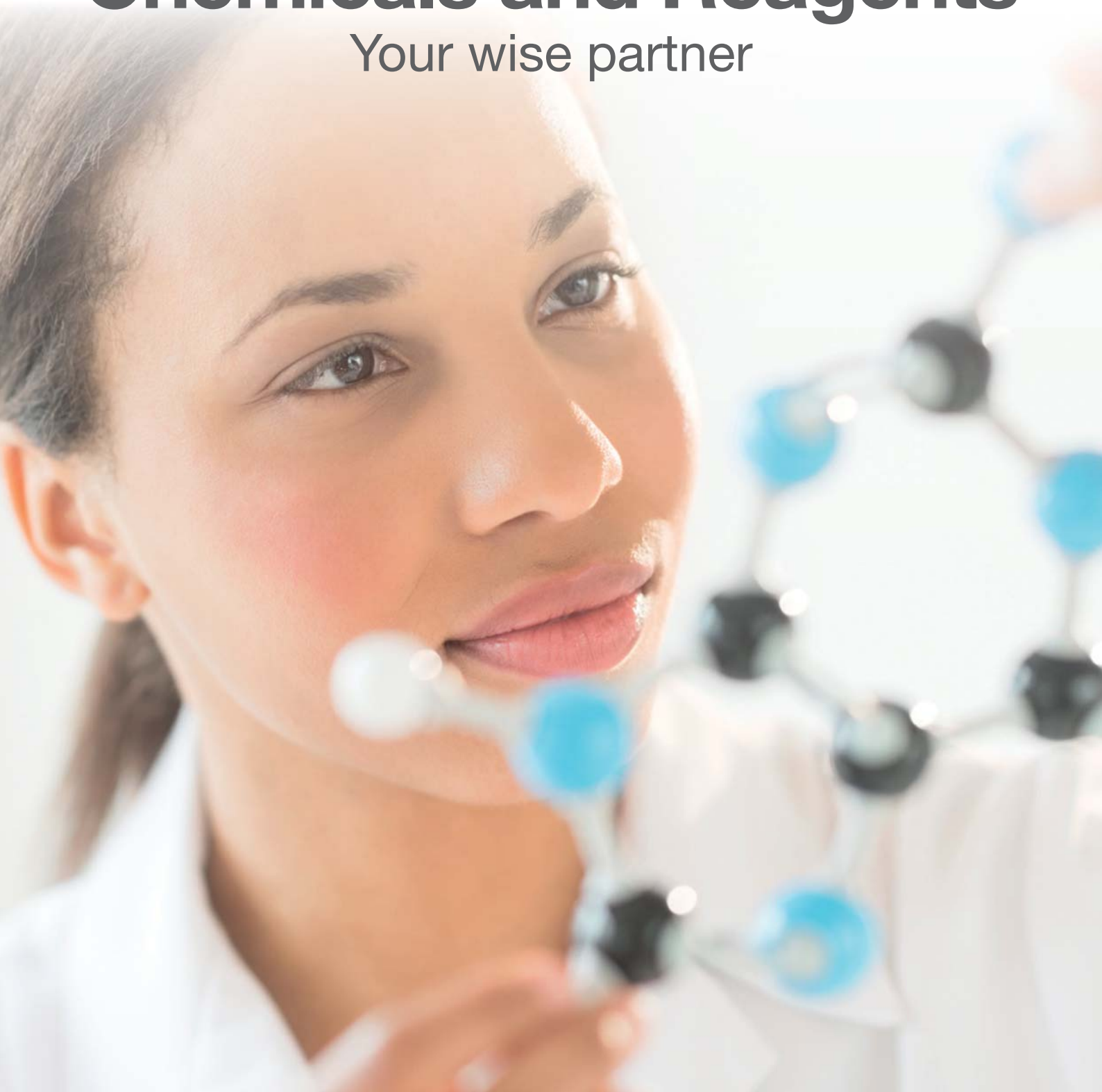




*The wise choice*

# Chemicals and Reagents

Your wise partner





## Your wise partner

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# Your wise partner in the Laboratory

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The company was founded in 1949 in Barcelona under the name of F.E.R.O.S.A. as a company to synthesise organic compounds. In 1954 this company was bought over by Paul Scharlau, a second generation German in Spain. He then came to an agreement with the German company Dr. Theodor Schuchardt to distribute their laboratory chemicals and to manufacture in Spain under licence.

In 1970, Schuchardt, was sold to Merck-Darmstadt and FEROSA had no alternative but to start selling chemicals under a different name and thus the Scharlau brand was born in 1971. Thousands of purification processes were consequently perfected to offer reagents of exceptional purity.

In 1980 Paul Scharlau passed away and his son Werner took over the business. The company then focused on providing high purity solvents in general and HPLC solvents in particular.

Between 1990 and 1997 the company added new product families to its portfolio, making a transition from a solvent manufacturer to a fully-fledged reagent company. The company has since then added new business lines like culture media for microbiology, laboratory glassware and chromatography accessories. Today the company offers a complete portfolio of laboratory supplies and operates under the Scharlab company name and Scharlau product brand.

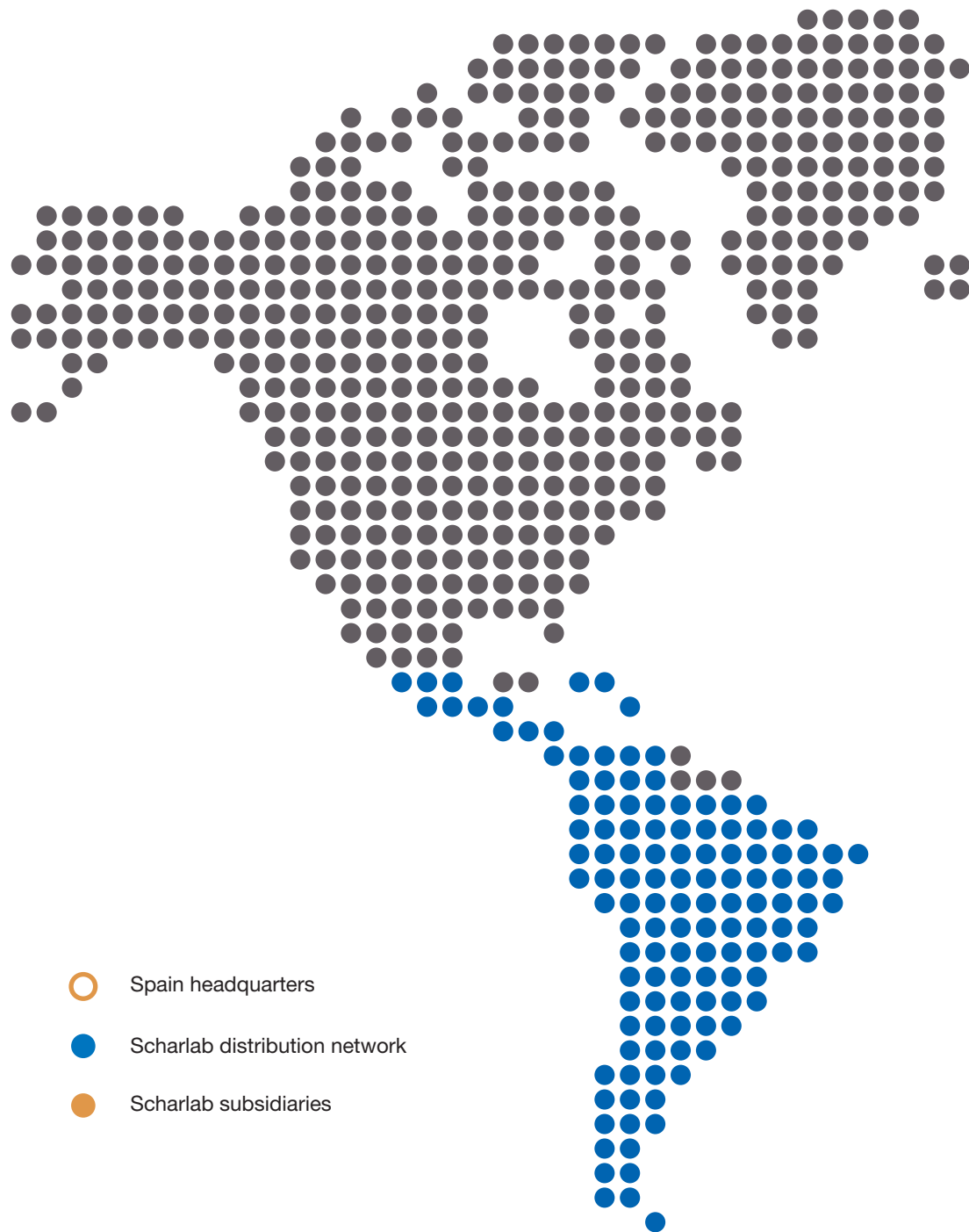
As a privately held company we can and want to focus on service. We need not sacrifice long term growth for short term profitability and we hope that our customers will be happy doing business with Scharlab.

You will find here all Scharlau branded products manufactured by our chemical division, as well as containers and a selection of packaging accessories.

# The Company

## Scharlab in the World

Headquartered in Barcelona (Spain), Scharlab has experienced an outstanding growth in the last few decades. This has led us to establish subsidiaries in 5 countries and enabled us to develop a presence worldwide through a distribution network that covers over 100 countries.



# Near you, wherever you are

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Check our complete Sales Conditions on our website:  
[www.scharlab.com](http://www.scharlab.com)



Caring about the environment  
is caring about you



# The Company

## Quality and the Environment

We are committed to fulfilling or exceeding customer requirements by implementing a management system, which includes outstanding quality service and products, the preservation of the environment, while also ensuring the health & safety of personnel.

Since 1995 we have been operating a quality system in accordance with the requirements of ISO 9000 and since 2002 an environmental system for our production unit according to the requirements of ISO 14000. Scharlab also meets the Spanish legal requirements (law 31/95) concerning health & safety in places of work.

We therefore have an integrated manual for all three areas including written procedures and documentation relating to the management of business in accordance with the requirements for this quality system with a focus on continuous improvement.

A Quality Control, Environmental and Health & Safety (QEH&S) department, independent from other operative units and reporting to the general manager is responsible for the control, implementation and enhancement of this comprehensive management system.

### Specifications

All products we manufacture or distribute have written specifications available to customers via our catalogues and technical documentation.

Our Technical Data Sheets (TDS) include the most relevant information on the product. Custom made products according to customer specifications are also possible.

### Batch Documentation

Each batch of product that is produced under the Scharlab brand is provided with a Certificate of Analysis (CoA) containing the guaranteed specifications, the actual batch results, expiry date and relevant information regarding storage conditions if required.

Certificates of Analysis are not available for expired products.

### Certificates and Documentation

Details concerning the origin of a product such as BSE, GMO, allergens, etc, are available on request, however such information is limited to those articles which are intended to be used in final products that have potential for exposure to humans or animals. Additional administrative fees may be applied.

Documentation pertaining to regulatory affairs (DMF, CE mark, technical files for starting materials etc.) can be provided on the signing of a non-disclosure agreement between parties, if requested. Additional administrative fees may be applied.

Our GMP range of products are supplied with a dossier according to Module 3 CTD. Please contact our Sales Department for more detailed information.

This documentation is not available for expired batches and superseded or retired products.

### Expiry dates

All our products have an expiry date printed on the labels and Certificates of Analysis based on experimental or historical data.

Such dates indicate until when the product should fulfill its specifications when stored and used in accordance with the recommended conditions. We do not recommend using the product after this date.

Once opened, as a general rule, the product should meet the specifications if the recommended storage conditions are maintained. The CoA provided with the product includes details regarding any specific storage conditions that are recommended (refer to: 'Storage and Use'). In some cases, specific statements are issued for unstable products.

Where expiry dates are based on experimental data, a stability study will have been performed. A table of summarised results can be requested (please see documentation policy above).

No retest dates are applied to our products.

# The Company

## Quality and the Environment

### Audits

Audits of our premises are permitted with prior notification.

Scharlab reserves the right to postpone, cancel or modify a scheduled audit.

### Customer Complaints

Scharlab handles customer complaints according to written procedures in the management system.

All customer complaints are investigated and an official response is issued including, when appropriate, the corrective actions implemented.

An internal blog has been put in place on our Intranet, which allows everybody in the company to follow up the state of each complaint.

### Change Control

We take into account any critical changes with regard to products, facilities and services that may affect pharmaceutical customers.

For that reason, Scharlab notifies changes in the supplied products that should meet Pharmacopoeia requirements (with the exception of reagents) to all customers registered in the automatic application recorded on our Intranet.



### Environmental Impact

The preservation of the environment is one of the main concerns of the company. Scharlab works to ensure that natural resources and raw materials are employed efficiently. Our new facilities in the chemical unit, located in a rural area, have been designed to reduce the impact on the surrounding countryside.

### Environmental Products and Services

We continue to work towards cleaner and safer products and take into account the preservation of environment in future projects. Thus, we are continuously searching for cleaner and safer ways to manufacture and package products, and to provide services. Learn more about what we do for the environment by referring to details regarding our Returnable Drums Service and Packaging.





# Scharlab at your fingertips

New websites are being launched in 2015: a corporate website and product specific website for chemicals. They offer innovative solutions regarding to the information you are looking for and put at your disposal powerful laboratory tools.

## Corporate Website

### Products

#### *Efficient product search*

The search engine has been optimised to enable you to find all our products more easily and more intuitively.

- Quick product search
- Products classified by application
- Products classified by industry

#### *Comprehensive information*

We include detailed information about:

- Product families
- Product grades/qualities
- Laboratory techniques
- Products used in production processes

### Services

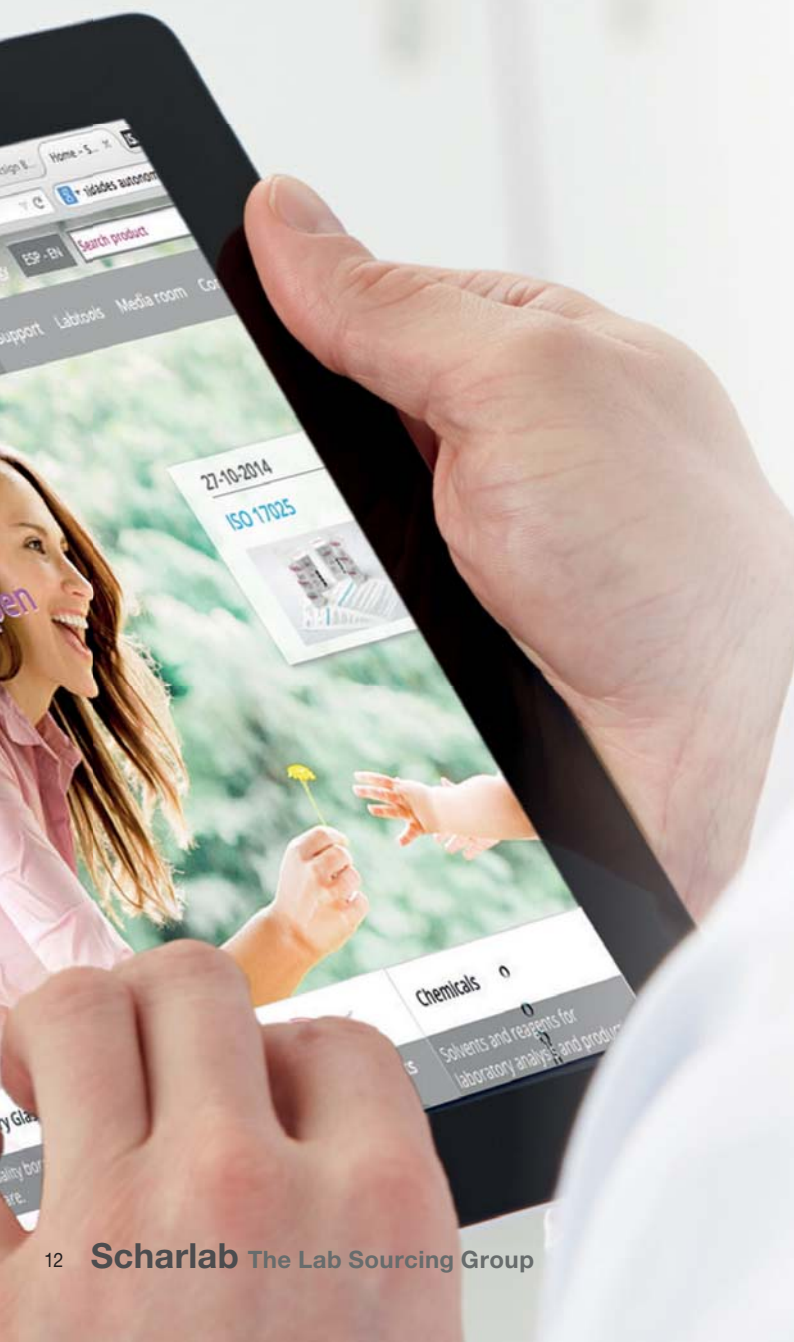
Because a high-quality product needs a high-quality service, our challenge is to make your life easier.

#### *Custom Made Products*

To address the challenges facing professionals in laboratories, we offer a wide range of solutions developed by our R&D department and certified by our laboratory.

#### *Returnable Drum Service*

Simple system for the management of solvents, providing drums for exclusive use by an individual customer.



# The Company

## Corporate and Chemicals Websites

### Labtools

Discover our tools for chemistry, which will support you in your daily laboratory activities.

- 3D Structure
- Abbreviations
- Apps
- Blends calculator
- GHS pictograms
- Interactive periodic table
- Molar mass calculator
- Molarity, normality
- Pathogen Guide
- pH indicator selector
- Solvents miscibility chart
- Synonyms
- Unit converter

### My Account

By using “My account” you will be able to:

- Consult products with all the necessary information, including prices and stock availability
- Follow-up orders, delivery notes and invoices
- Carry out quick and easy online shopping
- Check the status of your orders: pending items, packings and delivery times

### Support

Download and get all the documents that you want:

- Certificates of Analysis
- Technical Data Sheets
- Safety Data Sheets
- ISO Certificates
- Catalogues
- Leaflets
- Other promotional material
- Webinars
- Video tutorials & podcasts
- FAQs regarding every product line

### Media Room

Keep up-to-date with relevant information for your daily activities including our webinar calendar and the upcoming events which we will be attending.

### Chemicals Website

Expand your searches using our site for chemicals and find more specific information about our products including:

- Services: Custom Made Products, Returnable Drums Service, O.E.M. Services
- Packaging and labelling: find comprehensive information regarding our packaging
- Quality & Safety: with one of our missions being to produce safe quality products our customers can rely on
- Regulations: learn more about REACH, CLP and labelling guidance regulations and directives, in addition to all the information about the CE/IVD marking. ISO certificates for which we are accredited and the Pharmacopoeia Certificates that we adhere to
- Change Notification
- Transport & Storage: all the information concerning the ideal transport and storage conditions of the goods

### Download this catalogue



[www.scharlab.com/publicaciones-publicacion.php?p=462](http://www.scharlab.com/publicaciones-publicacion.php?p=462)

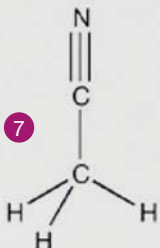
# How to use our catalogue

## Your wise guide

We include all the relevant information on our products. See below how to easily find any data you may require.

Aceton

1
Acetonitrile



7

9 • Synonyms: Methyl cyanide, Cyanomethane

10 • CH<sub>3</sub>CN

11 • M = 41,05 g/mol

12 • CAS [75-05-8]

12 • EINECS-No.: 200-835-2

13 • Density: 0,786 g/cm<sup>3</sup>

13 • Solub. in water: (20 °C): miscible

13 • Melting point: -45,7 °C

13 • Boiling point: 81,6 °C

13 • Flash pt. 2 °C

13 • Ignition temp.: 524 °C

13 • Vapour pressure: (20 °C) 97 hPa

13 • Refraction index: (n 20 °C) 1,3442

13 • Dielectric const.: (20 °C) 37,5

14 • LD 50 (oral, rat): 2730 - 3800 mg/kg

15 • EC-Index-No.: 608-001-00-3

16 • ADR: 3 F1 II UN 1648

16 • IMDG: 3 II

16 • IATA/ICAO: 3 II

17 • GHS-signal word: Danger

17 • GHS-H sentences: H225 - H302 - H312 - H332 - H319

17 • GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P305 + P351 + P338 - P501a

18 • Tariff number: 2926 90 99

19 • Applications: chromatography, synthesis of organic products, solvents.

**AC0333 Acetonitrile, Multisolvant® HPLC grade ACS UV-VIS, Reag. Ph Eur**

assay (G.C.) ..... min. 99,9 % identity (IR-spectrum) ..... passes test density (20°/4°) ..... 0,779 - 0,783 colour (Hazen) ..... max. 10 appearance ..... clear acidity ..... max. 0,0002 meq/g alkalinity ..... max. 0,0001 meq/g cyanides (CN) ..... max. 0,005 % aluminium (Al) ..... max. 0,00001 % barium (Ba) ..... max. 0,000001 % boron (B) ..... max. 0,000002 % cadmium (Cd) ..... max. 0,000001 % calcium (Ca) ..... max. 0,00003 % chromium (Cr) ..... max. 0,000002 % cobalt (Co) ..... max. 0,000002 % copper (Cu) ..... max. 0,000002 % iron (Fe) ..... max. 0,000002 % lead (Pb) ..... max. 0,00001 % magnesium (Mg) ..... max. 0,00001 %	manganese (Mn) ..... max. 0,000001 % nickel (Ni) ..... max. 0,000002 % tin (Sn) ..... max. 0,00001 % zinc (Zn) ..... max. 0,00001 % residue on evaporation ..... max. 0,0002 % water (K.F.) ..... max. 0,03 %  liquid chromatography suitability absorbance ..... passes test  min. transmission/max. absorbance in a 1,0 cm cell at wavelength:T(%) A (AU) 195 nm ..... 70 % 0,155 AU 200 nm ..... 90 % 0,046 AU 230 nm ..... 98 % 0,009 AU  Microfiltered through membranes of pore diameter 0,22 µm	<table border="1" style="width: 100%; border-collapse: collapse; font-size: 0.8em;"> <thead> <tr> <th style="text-align: left;">Code</th> <th style="text-align: left;">Volume</th> <th style="text-align: left;">Container</th> </tr> </thead> <tbody> <tr> <td>AC03331000</td> <td>1 l</td> <td>0</td> </tr> <tr> <td>AC03332500</td> <td>2,5 l</td> <td>0</td> </tr> <tr> <td>AC03334000</td> <td>4 l</td> <td>0</td> </tr> <tr> <td>AC0333007E</td> <td>7 l</td> <td>0</td> </tr> <tr> <td>AC0333020S</td> <td>20 l</td> <td>0</td> </tr> <tr> <td>AC0333025S</td> <td>25 l</td> <td>0</td> </tr> <tr> <td>AC0333185E</td> <td>185 l</td> <td>0</td> </tr> </tbody> </table>	Code	Volume	Container	AC03331000	1 l	0	AC03332500	2,5 l	0	AC03334000	4 l	0	AC0333007E	7 l	0	AC0333020S	20 l	0	AC0333025S	25 l	0	AC0333185E	185 l	0
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AC0333007E	7 l	0																								
AC0333020S	20 l	0																								
AC0333025S	25 l	0																								
AC0333185E	185 l	0																								

21

- 1 Product name
- 2 Catalogue number
- 3 Grade /Quality
- 4 Order number
- 5 Volume
- 6 Container
- 7 Structural formula
- 8 Synonyms and abbreviations
- 9 Empirical formula
- 10 Molar mass
- 11 CAS number

- 12 EINECS number
- 13 Physical and chemical data
- 14 Toxicological data
- 15 EC index number
- 16 Transportation data
- 17 Hazardous properties: Signal Word on H&P statements
- 18 Tariff number
- 19 Product applications
- 20 Hazard pictograms
- 21 Product specifications

# Finding what you want has never been so easy

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## Product Products by application

# Find what you need for each application

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Since our foundation in 1949 until today, we have been continuously improving in response to the needs and requirements of the industry. Everyday, we work to maintain your trust by delivering reliable products for each application.

We provide the appropriate grade and product range of chemicals for most laboratory applications.

# Product

## Products by application

Innovation and our strong commitment to provide solutions for our customers has resulted in the development of the Scharlab Chemicals catalogue comprising a comprehensive range of product families: reagents and solvents, solids and liquids, capable of meeting the needs of laboratory analysis in the vast majority of industries, R & D labs, education and hospitals.

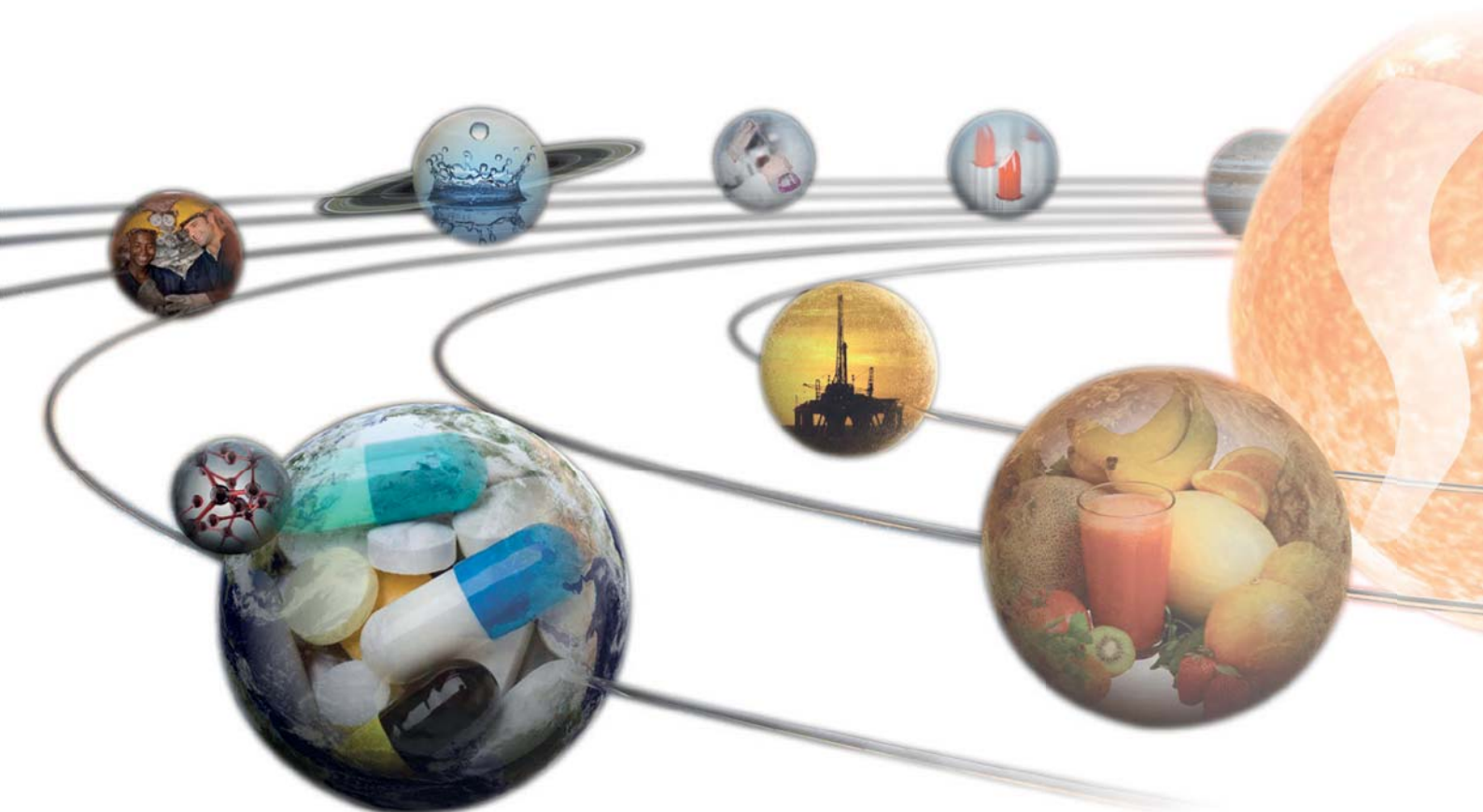
	Analytical Standards	Biotechnology & Biochemistry
Anhydrous Solvents		
AAS Standards (ISO 17025)	💧	
ASTM Products		
Acids with low mercury content		
Adsorbents		
Aminoacids and Derivates		💧
Biotechnology Chemicals		💧
Buffer Substances		
Chemicals for Histology, Microbiology & Hematology		
Chemical Oxygen Demand		
Conductivity Standards	💧	
Desiccation Media		
DNA Synthesis		
Electrode Auxiliary Solutions		
Food Analysis		
Gas Chromatography Solvents		
HPLC Auxiliaries		
HPLC Solvents		
ICP Standards (ISO 17025)	💧	
Indicators		
Ionic Strength Adjustment		
Inorganic Reagents		
Ion Chromatography Standards (ISO 17025)	💧	
Ion Pair Reagents		
<b>Aquagent®</b> Karl Fischer Water Titration		
LC-MS Solvents and Reagents		
Mixtures for special purposes		
<b>Multisolvent®</b>		
<b>Spectrosol®</b> NMR Deuterated Solvents		
Organic Reagents		
pH Adjustment		
pH Buffer Standards	💧	
Pharmacopoeia Reagents List Products		
Peptide Synthesis		💧
Reagent Grade Solvents		
Silicones		
Synthesis Grade Solvents		
Sugars		💧
Thin Layer Chromatography		
<b>Ultratrace®</b> Ultrapure Acids for Trace Analysis		
<b>Titrasure®</b> Volumetric Secondary Standards	💧	
Volumetric Solutions		

Chromatography	Inorganic Reagents	Microscopy	Organic Reagents	Reagents according to Pharmacopoeia	Sample Preparation	Solvents	Spectroscopy	Titration
						•		
							•	
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# Product For any industry

We offer a wide range of products to cover the requirements of all types of industries.

- Agriculture
- Biotech
- Cement
- Chemistry
- Contract lab. analysis
- Cosmetics
- Electronics
- Environmental
- Feed
- Food and beverage
- Forensics and legal medicine
- Hospitals
- Metal
- Mining
- Oil
- Petrochemistry
- Pharma
- Polymers
- Research
- Water



See all Scharlau products under industrial sectors in [www.scharlab.com](http://www.scharlab.com)

# Product Grade Selection Guide

In response to the various applications and requirements that laboratory chemicals need to fulfill, we offer our customers a wide variety of grades for both, general and specific solvents and reagents.

To assist you in the selection of the most appropriate product for your application, we have created a table of grades covering Scharlau solvents and reagents.

## Scharlau Solvents:

### General Grades

Reagent	ACS, Reag. Ph Eur, ISO
Extra Pure	Ph Eur, USP, BP, NF
<b>Pharmpur</b> <sup>®</sup> : Pharmacopoeia Monography Products	Ph Eur, USP, BP, NF
Synthesis	

### Specific Grades

UHPLC-MS	
LC-MS	
HPLC	Supragradient
	Gradient
	Isocratic / <b>MultiSolvent</b> <sup>®</sup> ACS
GC	GC Headspace Analysis
	GC Ultra-Trace Analysis
	GC Residue Analysis
Dry	
Anhydrous	With molecular sieves
	Without molecular sieves
<b>Spectrosol</b> <sup>®</sup> Deuterated (NMR)	
Organic Synthesis	Peptides synthesis
	DNA synthesis
Molecular Biology	
Histology	
VLSI	
ASTM	

## Scharlau Reagents:

Reagent	ACS, Reag. Ph Eur, ISO	
Extra Pure	Ph Eur, USP, BP, NF	
Synthesis		
<b>Pharmpur</b> <sup>®</sup> GMP Excipients	GMP, Ph Eur, USP, BP, NF	
<b>Pharmpur</b> <sup>®</sup> Pharmacopoeia Monography Products	Ph Eur, USP, BP, NF	
<b>Ultratrace</b> <sup>®</sup> Ultrapure Acids	ppt grade	
	ppb grade	
Standards	ICP	ISO 17025, NIST
	AAS	ISO 17025, NIST
	pH Buffer Solutions / <b>Monobuf</b> <sup>®</sup>	NIST
	Ion Chromatography	ISO 17025, NIST
	Conductivity	NIST
	<b>Titrasure</b> <sup>®</sup> Secondary Standards	ACS, NIST
	Molecular Biology	
HPLC		
LC-MS		
Acids with low Mercury Content	ACS, ISO	
<b>Aquagent</b> <sup>®</sup> Karl Fischer Water Titration		
Volumetric Solutions	Ready to use	NIST
	Concentrated	
Histology		

**Pharmpur**<sup>®</sup>, **MultiSolvent**<sup>®</sup>, **Ultratrace**<sup>®</sup>, **Monobuf**<sup>®</sup>, **Spectrosol**<sup>®</sup>, **Titrasure**<sup>®</sup> and **Aquagent**<sup>®</sup> are registered trademarks.

# Product Grade Selection Guide

## Synthesis grade

A grade of chemicals for laboratory use which includes solvents and reagents and which are used in organic synthesis as dissolution media for laboratory tasks and for routine research, where the higher analytical grade is not required.

## Extra pure

This grade comprises products suitable for qualitative and semi-quantitative work. The purity specifications are usually less strict than those of the reagent grade but are significantly higher than industrial products. Such products are preferentially used in the pharmaceutical industry, either as a reagent or as raw materials for production. The range of extra pure products includes solvents, salts, acids and bases, solutions and mixtures.

## Reagent grade

This is the most frequently used grade for laboratory analytical work and corresponds to a grade of high quality chemicals for laboratory and specialised industrial use. The range of reagent grade products includes solvents, salts, acids and bases, solutions and mixtures. Analytical methods used for these determinations are based on standard test procedures as described in technical publications.

## Pharmapur®

This grade includes two categories of products:

### Pharmapur® GMP

Solids suitable for use as excipients according to the requirements of GMP for the production of solid drugs in the pharmaceutical industry. These solids are handled in a special clean room and stored in a warehouse exclusively dedicated to solid GMPs products. Prior to being supplied, Pharmapur® GMP undergo strict quality control, in accordance with the highest requirements and

regulations, in order to ensure that the products are of the highest quality.

### Pharmapur® Pharmacopeia Monography products

Chemicals that comply with Pharmacopeial Monographies. All Pharmapur® products comply with Ph Eur, USP (or other pharmacopeias) indicating that their specifications meet the European or American Pharmacopoeia.

## HPLC

This grade includes solvents, ion pair reagents and reagents of appropriate purity to be used as mobile phases in HPLC in analytical and preparative separations. Solvents are available in different HPLC grades depending on the detector used and for isocratic or gradient elution. Different solvents undergo a number of chemical pre-treatments, fractionated distillation and other physical post-treatments, which eliminate impurities that could interfere in HPLC analysis. Our solvents are microfiltered and packed in amber-coloured bottles, which are sealed with a PTFE membrane in the cap to avoid possible contamination.

## LC-MS

This grade includes solvents, mixtures and reagents suitable for use as eluents in LC-MS. LC-MS is a powerful technique combining separation by HPLC with the structural information obtained by MS. Its application is widespread in the scientific and pharmaceutical fields as well as in biotechnology and pesticide residue analysis. LC-MS solvents must be free from impurities that could give rise to ions that add to the background noise and cause interference in the spectrum. Therefore LC-MS solvents are microfiltered through a 0,22 µm filter.

## UHPLC-MS

Includes solvents suitable for use as eluents in Ultra High Performance Liquid Chromatography. Small particles, potentially present within the mobile phase, affect the HPLC equipment accessories (columns, filters, pumps),

and become critical in UHPLC equipment. UHPLC solvents guarantee the same specifications as LC-MS with the difference that UHPLC is microfiltered through 0,1µm.

## ■ Multisolvent®

Multisolvent® comprises a group of versatile solvents which can be used in HPLC, Karl-Fischer titration, UV/VIS spectroscopy, column chromatography, anhydrous solvent production and in general analyses that require reagent grade products. The most frequent use of our Multisolvent® is for HPLC. In recent years, Multisolvent® users have found numerous applications, making it one of the most universal grades. Such applications include:

- General Analytical Purpose. Our Multisolvent® is guaranteed to be reagent grade. Scharlab uses GC-FID detection as a regular method to quantify the actual content of each batch.
- HPLC. The most used detector in HPLC is the UV-VIS. We control our Multisolvent® by means of UV spectroscopy to ensure that these products are suitable for isocratic HPLC. Moreover, Multisolvent® is microfiltered to avoid the presence of particles that might damage HPLC system pumps.
- UV. Our Multisolvent® is also suitable for tests by UV-VIS spectroscopy.
- Karl Fischer. Although it cannot be considered an anhydrous product, Multisolvent® has a low water content, making it perfectly suitable and competitive for Karl Fischer determinations.
- Column chromatography. This separation technique is normally used to purify synthesis products in organic chemistry.
- Anhydrous solvent production. The low water content of Multisolvent® makes it an ideal starting solvent for the production of anhydrous solvents using new technology, based on pressurised absorption columns.

## ■ GC residue Analysis

This grade includes solvents used in the preparation of vegetal specimens in the analysis of pesticides where solvent extraction is required. The sample is evaporated

to dryness, the residue then is re-dissolved in a small volume of GC residue analysis solvent and analysed using gas chromatography. When evaporated to dryness, both the residue sample and any other impurities contained in the solvent itself are concentrated. Therefore, this type of analysis requires extraordinarily pure solvents.

Scharlab specifications for GC residue analysis solvents are very strict. We carry out controls by GC-ECD to ensure that the quality of our GC residue analysis solvents is suitable for organochlorinated, dioxin, furan and PCB pesticide residue analysis. In pesticide residue analysis, anhydrous sodium sulfate is normally used as a drying agent in order to separate the aqueous and organic phases once the extraction process is performed.

## ■ GC Ultra-Trace residue Analysis

This grade includes extremely purified solvents developed for organic residue extraction/concentration procedures in environmental samples. Apart from the grade of residue analysis specifications, Scharlab GC ultra-trace residue analysis solvents undergo two controls:

- GC-ECD, which guarantees the absence of electro-negative compounds.
- GC-FID, which guarantees the absence of general hydrocarbons.

Special liners in our caps make sure this ultra-sensitive product is not re-contaminated.

## ■ GC Headspace Analysis

GC Headspace is widely used in the pharmaceutical industry for the analysis of volatile solvents in APIs and drugs. This grade includes high purity solvents used in sample preparation, which have to be free from volatile compounds that could interfere with the analysis. Solvents are all tested by GC Headspace to ensure that they comply with the quality required for this technique.

# Product Grade Selection Guide

## ■ Dry solvents

Solvents with low water content used in both organic and inorganic synthesis. A typical application is for Karl Fischer titrations.

## ■ Anhydrous solvents

These are high-purity solvents with extremely low water content (ppm). Anhydrous solvents are essential in both organic, organometallic and oligonucleotide synthesis and inorganic chemistry, where many reactions must take place in moisture-free conditions. Anhydrous solvents are also frequently used in combinatorial chemistry and in biotechnology. Water content ranges from typically 10 to 30ppm. Scharlab guarantees the quality of the anhydrous solvent by means of strict Karl Fischer controls.

Scharlab offers two types of anhydrous solvents:

### Anhydrous over molecular sieves

These are quality-controlled solvents with minimal water content (ppm) that are kept anhydrous through the molecular sieves being added to each bottle. The sieves trap the water traces that enter with the air on opening and closing the bottle for use, therefore making it unnecessary to use a container with a septum cap. As this grade is packed in our standard bottles, it is an excellent option when economically priced anhydrous solvents are required.

### Anhydrous without molecular sieves

These solvents are packaged in a special way to avoid moisture contamination:

- Cap with septum enabling the extraction of the anhydrous product by means of a syringe. Due to the septum, removal of the cap during product extraction is not required.
- A vacuum aluminium bag protects the content from UV light and air moisture during storage and transportation.

## ■ Spectrosol® Deuterated solvents

This grade includes solvents used in Nuclear Magnetic Resonance spectroscopy (NMR). Nuclear Magnetic Resonance spectroscopy is the most commonly used technique in the structural analysis of compounds obtained by organic synthesis. It normally requires the sample to be dissolved in a solvent whose hydrogen atoms have been replaced with deuterium atoms. Scharlab offers deuterated solvents of different isotopic purities.

## ■ Organic Synthesis solvents

This grade includes two categories:

### For Peptides synthesis

Solvents used for the efficient solvation of the peptide resin in solid phase peptide synthesis.

### For DNA synthesis

Acetonitrile is used in DNA synthesis as a reagent and rinse solvent after each step of the synthesis process. The absence of moisture improves the synthesis yield, which is why anhydrous acetonitrile should be used.

## ■ Molecular Biology

The experiments performed in a molecular biology laboratory are complex and involve the use of samples whose scarcity or difficult collection makes them very valuable. In such cases, the analyst needs reagents to be guaranteed against the presence of any impurities that might alter the structure of the genetic material contained in the sample. Scharlab offers a complete range of reagents for molecular biology with a special quality control that guarantees:

- Absence of nucleases and proteases
- Low UV absorbance
- Very high purity



## ■ Histology

Reagents and solvents specifically designed for medical laboratory use and diagnostics. The Scharlab portfolio offers:

- Fixatives
- Dehydration media
- Clearing agents
- Embedding Media
- Mounting Media
- Stains - solid and in solution

## ■ VLSI

VLSI stands for Very Large Scale Integration. This grade includes solvents used in the semiconductor and in electronic industry production, mainly in the cleaning of integrated circuits. In VLSI grade solvents we guarantee the absence of water, metals and particles.

## ■ ASTM

In this category we include a group of reagents, solutions and mixtures used in the analysis of lubricants and petroleum derivatives, which are manufactured by us according to the published methods of the ASTM. Some of these reagents are used as standard hydrocarbons. Others can be used as titration media.

## ■ Ultratrace® Ultrapure acids

This grade includes extremely pure acids and reagents for inorganic trace analysis. It is crucial for the ultrapure acid to be free of metal traces. They are needed for the digestion of solid samples prior to analysis using atomic spectroscopy methods such as ICP or AAS. These techniques have very low detection limits: ppb or ppt.

- "Ultratrace®" ppb Grade. All certified at maximum impurity levels of parts per billion (1ppb)
- "Ultratrace®" ppt Grade. All certified at maximum impurity levels of parts per trillion (20ppt)

## ■ Standards

This grade includes reference materials used as standards for the calibration of different equipment and techniques.

### ICP standards

Used as external standards for the calibration of ICP equipment. Due to its higher sensitivity the ICP technique requires extremely high purity standards. Our ICP standard solutions are prepared from starting materials having a minimum purity of 99,9%, dissolved in ultrapure acids. The Certificate of Analysis is always supplied with the product.

### AAS standards

Used as external standards to calibrate AA spectrometers, these must have a very accurate concentration. Our AAS standards are prepared from high purity salts and dissolved in suitable acids. Our AAS standards are directly traceable to the SRM of NIST and produced in an accredited ISO 17025 and ISO Guide 34 laboratory. The Certificate of Analysis is always supplied with the product.

### pH buffer solutions/Monobuf®

This grade includes buffer solutions used to calibrate pH meters. Scharlab pH standard solutions are accurate, reliable and directly traceable to the SRM of NIST. We also offer coloured buffer solutions, which make identification easier and avoid laboratory errors due to the incorrect pH buffer being used. The Certificate of Analysis is always supplied with the product.

Monobuf® comprises ready-to-use single dose pH buffer solutions. Each single pack contains the quantity of solution necessary to carry out a measurement in the same pack, avoiding material transfer and providing cleaner and more convenient handling.

### IC standards

Ion Chromatography standards are used for the calibration of IC chromatographs. All Scharlab Ion Chromatography standards are traceable to the SRM of NIST and produced in an accredited ISO 17025 and ISO Guide 34 laboratory. The Certificate of Analysis is always supplied with the product.

# Product Grade Selection Guide

## Conductivity standards

These are solutions of known conductivity used for determining the cell constant. The quality of the standards is very important in order to obtain accurate measurements.

Because temperature affects dissolved ion mobility and therefore conductivity values, the temperature at which they were measured must always be indicated. Scharlab offers standards measured at 25°C and traceable to the SRM of NIST. The Certificate of Analysis is always supplied with the product.

## Titrasure® Secondary standards

Secondary reference standards for titration. The factor of volumetric solutions may vary over time, making periodic verification advisable, particularly in the case where extremely diluted solutions or unstable solutions are used. Titrasure® is our family of reference standards having outstanding purity and homogeneity, suitable for verifying the factor of the volumetric solutions. Titrasure® secondary standards are packaged in glass flasks contained in an opaque carton to protect the product from harmful light and so extend the shelf life. Titrasure® standards are traceable to the SRM of NIST. The Certificate of Analysis is always supplied with the product.

## Acids with low Mercury Content

Mercury is a highly toxic contaminant that enters the human food chain through river and sea water. Mercury analysis of fish can be performed by Atomic Absorption Spectroscopy. Before analysing liquid or solid samples by means of CVAAS (Cold Vapour Atomic Absorption Spectroscopy) the samples are digested in mineral acids, which must be mercury-free. Scharlab's low mercury content acids guarantee a maximum level of 5ppb of Hg, which is the optimum for Hg determination.

## Aquagent® reagents and solvents for Karl Fischer titration

Aquagent® grade includes pyridine-free reagents, solution media and standards for the volumetric and coulometric determination of water by the Karl Fischer method. The Karl Fischer determination is the most widely used method in the quantitative analysis of water in all types of samples and industries. Aquagent® is suitable for volumetric titrations with one and two components as well as coulometric titration with and without cell diaphragm water titration.

## Volumetric solutions

### Ready-to-use volumetric solutions

Scharlab offers a wide range of volumetric solutions of accurate and reliable concentration for titration. Since these solutions are used as reference solutions in quantitative analysis, their concentration must be exact to within the narrowest possible confidence interval. The Certificate of Analysis guarantees their quality and details the factor, the associated level of uncertainty and the method used. Scharlab volumetric solutions are traceable to the SRM of NIST.

For large consumers of standard solutions, we recommend our Kubitainer package; a combined polyethylene and cardboard pack of 10l capacity. The liquid passes through a tap and on emptying, the flexible PE inner container folds without air being introduced. This packaging is very suitable for solutions whose concentration may vary on exposure to air, such as sodium hydroxide solutions.

### Concentrated volumetric solutions

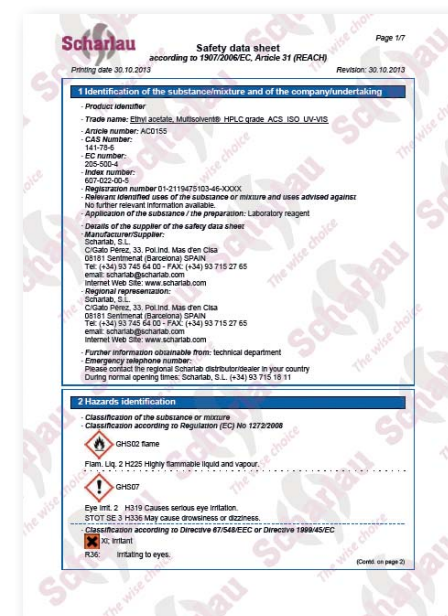
Although these solutions are not ready-to-use solutions, part of the preparation work in the laboratory is eliminated. Each ampoule contains the precise quantity of concentrated solution to prepare on dilution 1l of ready-to-use standard solution. Where required different concentrations may be obtained by diluting the concentrate to a volume other than 1l.



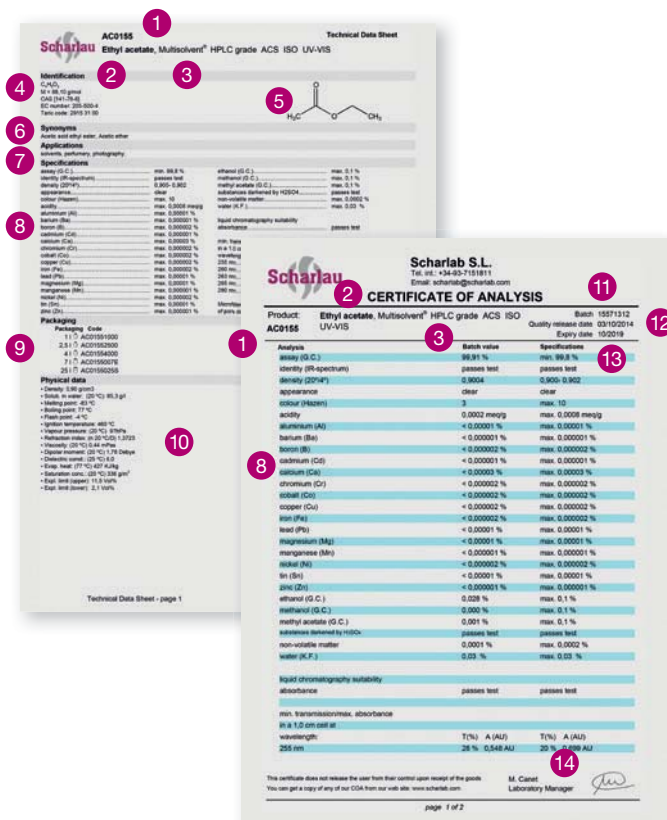
# Product Documentation

Technical Data Sheet (TDS), Certificate of Analysis (CoA) and Safety Data Sheet (SDS) are available for each product. You can download all of them instantly and easily from our website: [www.scharlab.com](http://www.scharlab.com)

## Safety Data Sheet (SDS)



## Technical Data Sheet (TDS) & Certificate of Analysis (CoA)



We provide complete Safety Data Sheets (SDS) in over 12 languages. They contain data regarding the physical and chemical properties of the product, necessary precautions for handling, toxicological information, aspects relating to the environment and waste disposal, storage and transport. The latest version of all our SDS can be downloaded from our website: [www.scharlab.com](http://www.scharlab.com)

The Technical Data Sheet provides the guaranteed values of our product specifications, among others. On the other hand, the Certificate of analysis provides the real values of these specifications, guaranteeing the quality of every manufactured product. On our website you can easily download the TDS and the CoA of our entire product portfolio. Our TDS and CoA certificates are divided according to the following parts:

- 1 Catalogue number
- 2 Product name
- 3 Grade / Quality
- 4 Identification:
  - Empirical formula
  - Molar mass
  - CAS number
  - EC number
  - Tariff number
- 5 Structural formula
- 6 Synonyms
- 7 Product applications
- 8 Product specifications:
  - Guaranteed value (TDS) and real value (CoA)
- 9 Packagings
- 10 Physical data, Safety, Toxicological data and Transport/Storage
- 11 Batch number
- 12 Quality release day
- 13 Expiry date
- 14 Signature of the Laboratory Manager

It's clear. It's simple.  
It's genuine Scharlab

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# Product Label

## Understanding our label

**HE02341000** 11 3074 BATCH 15633807

**ACTUAL LOT ANALYSIS**

assay (g. C.)	97,85 %	benzene	< 0,0003 %
identity	passes test	sulphur compounds (as S)	< 0,005 %
IR-spectrum	passes test	substances darkened by H2SO4	passes test
density (20°/4°)	0,5598	non-volatile matter	0,0001 %
appearance	clear	water (K.F.)	0,003 %
colour (Hazen)	0,0002 meq/g	liquid chromatography suitability	absorbance
acidity	< 0,00001 %	min. transmission/max. absorbance	in a 1,0 cm cell at
aluminium (Al)	< 0,00002 %	200 nm	0,27 AU
barium (Ba)	< 0,00001 %	210 nm	0,207 AU
boron (B)	< 0,00002 %	217 nm	0,22 AU
cadmium (Cd)	< 0,00001 %	225 nm	0,93 AU
calcium (Ca)	< 0,00003 %	245 nm	0,008 AU
chromium (Cr)	< 0,00002 %	microfiltered through membranes	of pore diameter 0,22 µm
cobalt (Co)	< 0,00002 %		
copper (Cu)	< 0,00002 %		
iron (Fe)	< 0,00002 %		
lead (Pb)	< 0,00001 %		
magnesium (Mg)	< 0,00001 %		
manganese (Mn)	< 0,00001 %		
nickel (Ni)	< 0,00002 %		
tin (Sn)	< 0,00001 %		
zinc (Zn)	< 0,00001 %		
aromatic compounds (as benzene)	< 0,0003 %		

# Scharlab

**n-Hexane, 96%, Multisolvent® HPLC grade ACS UV-VIS**

Applications: HPLC, Reagent grade, ACS, ISO, UV-VIS Spectroscopy, Karl Fischer titrations

**n-Hexan**

**n-Hexane**

**n-Esano**

• C<sub>6</sub>H<sub>14</sub> • M=86,18 • D=0,66 g/cm<sup>3</sup> • CAS: [110-54-3]

CE: 601-037-00-0 ADR: 3 F1 II IMDG: 3 II IATA: 3 II

Expiry date 8/2019 UN 1208

**Danger:** Highly flammable liquid and vapour. May be fatal if swallowed and enters airways. Suspected of damaging fertility. May cause damage to organs through prolonged or repeated exposure. Causes skin irritation. May cause drowsiness or dizziness. Toxic to aquatic life with long lasting effects. - Keep away from heat / sparks / open flames / hot surfaces. - No smoking. Use explosion-proof electrical / ventilation / lighting / equipment. If SWALLOWED immediately call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Remove / take off immediately all contaminated clothing. Rinse skin with water / shower. Store locked up. Dispose of contents / container in accordance with local / regional / national / international regulations.

**Peligro:** Líquido y vapores muy inflamables. Puede ser mortal en caso de ingestión y penetración en las vías respiratorias. Se sospecha que perjudica a la fertilidad. Puede provocar daños en los órganos tras exposiciones prolongadas o repetidas. Provoca irritación cutánea. Puede provocar somnolencia o vértigo. Tóxico para los organismos acuáticos, con efectos nocivos duraderos. - Mantener alejado de fuentes de calor, chispas, flamas abiertas o superficies calientes. - No fumar. Utilizar un material eléctrico, de ventilación o de iluminación / anticorrosivo. EN CASO DE INGESTIÓN: Llamar inmediatamente a un CENTRO DE INFORMACIÓN TOXICOLÓGICA o a un médico. EN CASO DE CONTACTO CON LA PIEL: Quitar inmediatamente las prendas contaminadas. Aclararse la piel con agua o ducharse. Guardar bajo llave. Eliminar el contenido o el recipiente conforme a la legislación local / regional / nacional / internacional.

**Gefahr:** Flüssigkeit und Dampf leicht entzündbar. Kann bei Verschlucken und Eindringen in die Atemwege tödlich sein. Kann vermehrt die Fruchtbarkeit beeinträchtigen. Kann die Organe schädigen bei längerer oder wiederholter Exposition. Verursacht Hautreizungen. Kann Schläfrigkeit und Benommenheit verursachen. Giftig für Wasserorganismen, mit langfristiger Wirkung. - Von Hitze / Funken / offener Flamme / heißen Oberflächen fernhalten. Nicht rauchen. Explosionsgeschützte elektrische Betriebsmittel / Lüftungsanlagen / Beleuchtung verwenden. BEI VERSCHLUCKEN: Sofort GIFTINFORMATIONSZENTRUM oder Arzt anrufen. BEI KONTAKT MIT DER HAUT: (oder dem Haar): Alle kontaminierten, getragene Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen / duschen. Unter Verzicht auf Aufbahrung. Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.

**Danger:** Liquide et vapeurs très inflammables. Peut être mortel en cas d'ingestion et de pénétration dans les voies respiratoires. Susceptible de nuire à la fertilité. Risque provoque d'effets graves pour les organes à la suite d'expositions répétées ou d'une exposition prolongée. Peut provoquer somnolence ou vertiges. Toxique pour les organismes aquatiques, entraîne des effets néfastes à long terme. - Tenir à l'écart de la chaleur / des étincelles / des flammes nues / des surfaces chaudes. - Ne pas fumer. Utiliser du matériel électrique / de ventilation / d'éclairage / anticorrosif. EN CAS D'INGESTION: appeler immédiatement un CENTRE ANTIPOISON ou un médecin. EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): enlever immédiatement les vêtements contaminés. Rincer la peau à l'eau ou se doucher. Garder sous clé. Éliminer le contenu / le récipient conformément à la réglementation locale / régionale / nationale / internationale.

**Pericolo:** Liquido e vapori facilmente infiammabili. Può essere letale in caso di ingestione e di penetrazione nelle vie respiratorie. Susceptibile di nuocere alla fertilità. Può provocare somnolenza o vertigini. Tossico per gli organismi acquatici con effetti di lunga durata. - Tenere lontano da fonti di calore / scintille / fiamme libere / superfici riscaldate. - Non fumare. Utilizzare impianti elettrici / di ventilazione / illuminazione / a prova di esplosione. IN CASO DI INGESTIONE: contattare immediatamente un CENTRO ANTIVELENI o un medico. IN CASO DI CONTATTO CON LA PELLE (o con i capelli): togliersi di dosso immediatamente tutti gli indumenti contaminati. Sciacquare la pelle / fare una doccia. Conservare sotto chiave. Smaltire il prodotto / recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

Scharlab S.L. Gato Perez, 33 - P. I. Mas d'En Cisa 08181 Sentmenat SPAIN Tel. 34-937456400 Made in Spain

www.scharlab.com For laboratory use only

- 1 Product name
- 2 Grade / Application
- 3 Order number
- 4 Volume
- 5 Serial number
- 6 Batch number
- 7 Product specifications
- 8 Product applications
- 9 Product name in Spanish, German, French and Italian
- 10 Physical data
- 11 CAS number
- 12 EC Index number
- 13 Transportation data
- 14 Expiry date
- 15 UN number
- 16 QR Code
- 17 Product use
- 18 Hazard pictograms
- 19 Signal word and H&P statements
- 20 Scharlab logo
- 21 Scharlab S.L. data
- 22 Website



Read the Scharlab chemical products QR barcode and download instantly all the documentation associated with the scanned products to your smartphone using our ScharlabQR App.



# Product Holographic Protection



For internal use

Hologram



## Holographic protection

Due to the continuous presence of imitations of Scharlau chemicals in several countries, with negative consequences for our customers, we have launched an initiative that will distinguish genuine Scharlau products from imitations.

All Scharlau lots manufactured from October 2010 bear a barcode label with a unique Scharlau hologram.

- **The hologram is the best guarantee of quality for you**
- **Reject any container that does not contain this Scharlau hologram**

If you have products manufactured before October 2010, you can check their expiry date by downloading the corresponding CoA from our website [www.scharlab.com](http://www.scharlab.com).

Beware if you see the expiry date of the original CoA is not the same as that which appears on the label.





## We have packaging for every requirement

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At Scharlab we are aware of the importance of accompanying our high-quality products with high-quality packaging to keep them in optimum condition. Furthermore, we offer a wide range of packaging, not only with regard to capacities but also with regard to materials, to adapt as much as possible to your needs. Our entire packaging range is manufactured according to the strictest regulations, and aims to be as environmentally friendly as possible.

- **Wide range of materials** taking into account the chemical compatibility and characteristics of our solvents and reagents
- **Wide range of sizes** convenience and peace of mind for all our customers worldwide
- **Returnable drums** convenience and benefit for the user, environmentally friendly
- **UN approval** homologated packaging according to the latest transport regulations
- **Safe packaging options** containers and caps designed to minimise particular risks to users and the environment
- **Ease of handling** in your daily work



# Packaging Safety & the Environment

## Safety & the Environment

Packaging is essential for the shipment and distribution of our products, for that reason we are continuously searching for cleaner and safer ways of packaging. Scharlab is an ISO 14000 certified company and the preservation of the environment is one of the concerns of the company.

When safety permits, Scharlab uses mainly external cardboard packages with paper fills for easier waste management or reuse. These fills come from recycled and renewable sources and they can be reused several times. In addition, this fill protects against potential impacts during transportation and is insensitive to static electricity.

Scharlab is a pioneer in the introduction of the exclusive Returnable Drums Service (available only in Spain or some European countries), recognised by Spanish national laws as a system to reduce packaging and improve waste management of packaging.

Furthermore, Scharlab aims to help customers in regards to reducing the packaging waste and the cost of transportation, therefore we constantly improve our boxes to increase safety and reduce the amount of cardboard used and the space they occupy. Scharlab aims to use stackable packaging and consequently save space during transportation and storage. It reduces the carbon footprint due to transportation emissions and the use of natural resources from petroleum.





# Packaging Overview

## Packaging range for solids

100g	250g	500g
1kg	5kg	
25kg		

### HDPE bottles for solids

- Optimum characteristics for handling, storage and transport
- Wide and safe base to minimise any tip over of the bottle and maximise safety
- High-Density Polyethylene of outstanding quality, with great resistance and durability ensuring the highest safety and product quality
- High-quality neck. Tamper evident screw cap with liner, ensuring a tight fit with the bottle
- Label contains comprehensive information: specifications and hazards, batch number and expiry date



### Wide mouth plastic containers for solids

- Optimum characteristics for handling, storage and transport
- Wide and safe base to minimise any tip over of the container and maximise safety
- High-Density Polyethylene of outstanding quality, with great resistance and durability ensuring the highest safety and product quality
- High-quality neck. Tamper evident cap, ensuring the perfect fit with the container
- Label contains comprehensive information: specifications and hazards, batch number and expiry date
- For better protection of the product, it is packed in a sealed PE bag as primary packaging prior to packaging it in the wide mouth plastic container



### Packaging range for liquids

100ml	250ml	500ml		
1l	2,5l	4l	5l	7l
10l	20l	25l	30l	60l
100l	185l	200l		

### HDPE jerricans and drums for liquids

- Optimum characteristics for handling, storage and transport
- Wide and safe base to minimise any tip over of the bottle and maximise safety
- High-Density Polyethylene of outstanding quality, with great resistance and durability ensuring the highest safety and product quality
- High-quality thread. Tamper evident cap, ensuring the perfect fit with the container
- Label contains comprehensive information: specifications and hazards, batch number and expiry date



### Kubitainer

- Less space than glass bottles (less than half) and less weight
- Time saving: less handling in the lab compared to smaller size packages
- Environmental friendly: minimises packaging waste
- No air enters the Kubitainer during the use, preserving the quality of the product
- Tap incorporated to facilitate the handling



### Aluminium bottle

- Optimum characteristics for handling, storage and transport
- Wide and safe base to prevent any tip over of the bottle and maximise safety
- Ergonomic handle to facilitate the product pouring
- Suitable for high-purity solvent grades
- Shock resistant



# Packaging Overview

Glass bottles available from 500ml up to 4l

## High-quality thread

Tamper evident screw cap with PTFE, ensuring the perfect fit with the bottle mouth

## Same diameter

1l glass bottle has the same diameter as 1l UHDPE bottle, both will fit in the same equipment

## Amber glass of outstanding quality

Great resistance and durability ensuring the highest product safety and quality

## Label contains comprehensive information

Specifications and hazards, batch number and expiry date

## Wide and safe base

Minimises any tip over of the bottle and maximises safety



	500ml	1l	2,5l	4l
Material	Glass	Glass	Glass	Glass
Weight (g)	425	685	1350	1530
Height (mm)	178	224,5	285	319
Diameter (mm)	Ø83	Ø101	Ø139	Ø162,7
Road/Sea LCP Shipment	768 (CP5)	462 (CP5)	120 (CP5)	96 (CP5)
20'/40'/Road/Sea FCL	960 (CP5)	528 (CP5)	144 (CP5)	120 (CP5)
40' H.C. FCL	1056 (CP5)	660 (CP5)	168 (CP5)	144 (CP5)

## UHDPE bottles available from 500ml up to 4l

### High-quality thread

Tamper evident screw cap with PTFE, ensuring the perfect fit with the bottle mouth and inert contact with the content

### Ultra High-Density Polyethylene of outstanding quality

Great resistance and durability ensuring the highest product safety and quality. Our UHDPE is a special quality with very low content of softeners and other additives that may contaminate the content. Thick walls to minimise deformation by vacuum

Compatible with weak acids and alkalis, alcohols, acetone and aqueous solutions

### Keeps the shape

Our bottles contain over 25% more PE than standard 2,5l bottles to ensure they keep the shape even after being submitted to temperature changes

### Wide and safe base

Minimises any tip over of the bottle and maximises safety

### Volume marks

Allow the user to estimate the amount of liquid remaining in the bottle

### Ergonomic handle for full hand

Easier and safer product pouring (in 2,5l bottles)

### Label contains comprehensive information

Specifications and hazards, batch number and expiry date

### Same diameter

1l UHDPE bottle has the same diameter as 1l glass bottle, both will fit in the same equipment



	500ml	1l	2,5l	4l
<b>Material</b>	UHDPE	UHDPE	UHDPE	UHDPE
<b>Weight (g)</b>	55	110	225	328
<b>Height (mm)</b>	180	213	300	343
<b>Diameter (mm)</b>	Ø77	Ø101	Ø128	Ø159
<b>Road/Sea LCP Shipment</b>	768 (CP5)	462 (CP5)	120 (CP5)	96 (CP5)
<b>20'/40'/Road/Sea FCL</b>	960 (CP5)	528 (CP5)	144 (CP5)	120 (CP5)
<b>40' H.C. FCL</b>	1056 (CP5)	660 (CP5)	168 (CP5)	144 (CP5)

# Packaging

## Special packaging

**Glass Safety bottles:** prevents spillage in the case of breakage when the bottle contains strong acids. Available for 1l and 2,5l



	1l	2,5l
<b>Material</b>	Glass with an outer layer of PE	Glass with and outer layer of PE
<b>Weight (g)</b>	685	1350
<b>Height (mm)</b>	224,5	285
<b>Diameter (mm)</b>	Ø101	Ø139
<b>Road/Sea LCP Shipment</b>	240 (EUR)	120 (CP5)
<b>20'/40'/Road/Sea FCL</b>	336 (EUR)	144 (CP5)
<b>40' H.C. FCL</b>	384 (EUR)	168 (CP5)



## Glass bottle for anhydrous products available from 100ml up to 1l



### Aluminium vacuum packaging

Avoids any minimal contact of the product with the atmosphere

**Septum screw cap**  
Keeps the inside of the bottle dry

### Amber glass of outstanding quality

Great resistance and durability ensuring the highest product safety and quality

### Label contains comprehensive information

Specifications and hazards, batch number and expiry date

**Double labelling:** on the outer packaging and on the bottle

### Wide and safe base

Minimises any tip over of the bottle and maximises safety



	100ml	500ml	1l
Material	Glass	Glass	Glass
Weight (g)	140	425	685
Height (mm)	88,5	178	224,5
Diameter (mm)	Ø49	Ø83	Ø101
Road/Sea LCP Shipment	1254 (CP5)	240 (EUR)	240 (EUR)
20'/40'/Road/Sea FCL	1596 (CP5)	336 (EUR)	336 (EUR)
40' H.C. FCL	1824 (CP5)	384 (EUR)	384 (EUR)

# Packaging Overview: Drums

Metal drum available for 25l and 200l

**Tamper evident seal red cap**

**Metal of outstanding quality**  
Great resistance and durability ensuring the highest safety and product quality

**Adaptable to different dispensing systems**  
Two openings of 3/4" and 2"

**Two handles for a better handling (only for 25l)**

**Label contains comprehensive information**  
Specifications and hazards, batch number and expiry date

**Printed UN number**

**Wide and safe base**  
Minimises any tip over of the bottle and maximises safety



	25l	200l
<b>Material</b>	Cold-rolled steel sheet	Steel
<b>Weight (Kg)</b>	3	16,5
<b>Height (mm)</b>	485	884
<b>Diameter (mm)</b>	Ø304	Ø585
<b>Total Volume (l)</b>	30	216,5
<b>UN number</b>	1A1/X1.8/250	1A1/X1.8/250
<b>Road/Sea LCP Shipment</b>	21 (CP5)	1 (CP5)
<b>20'/40'/Road/Sea FCL</b>	21 (CP5)	2 (CP5)
<b>40' H.C. FCL</b>	21 (CP5)	2 (CP5)



## Stainless steel drum available for 25l



	25l
Material	Stainless Steel
Weight (Kg)	3,7
Height (mm)	520
Diameter (mm)	Ø290
Total Volume (l)	30,2
UN number	1A1X500/10/CH3085
Road/Sea LCP Shipment	21 (CP5)
20'/40'/Road/Sea FCL	21 (CP5)
40' H.C. FCL	21 (CP5)

# Packaging

## Overview: Drums

Stainless steel returnable drums available from 7l up to 185l



	7l	20l	25l	30l	100l	185/200l
<b>Material</b>	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
<b>Weight (Kg)</b>	1,8	7	6,4	10	30	43
<b>Height (mm)</b>	320	470	530	435	880	960
<b>Diameter (mm)</b>	Ø197	Ø278	Ø300 (with ring)	Ø363	Ø450	Ø600
<b>Total Volume (l)</b>	7,8	22	28	33	110	220
<b>UN number</b>	A1W/X2.0/900	A1W/X2.0/900	A1/X1.6/400	A1W/X2.0/900	A1W/X2.0/900	A1W/X2.0/900
<b>Road/Sea LCL Shipment</b>	60 (CP5)	33 (CP5)	21 (CP5)	18 (CP5)	3 (CP5)	2 (CP5)
<b>20'/40'/Road/Sea FCL</b>	60 (CP5)	33 (CP5)	21 (CP5)	18 (CP5)	3 (CP5)	2 (CP5)
<b>40' H.C. FCL</b>	60 (CP5)	33 (CP5)	21 (CP5)	18 (CP5)	3 (CP5)	2 (CP5)



## 25l stainless steel returnable drum



# Packaging

## Overview: Dispensing Systems

Dispensing system using positive pressure with inert gas for pressurizable steel drums



System	
Order number	649-000019
Accessories	
Deep pipe for 30l drums	649-000020
Deep pipe for 185l and 200l drums	649-000021
Male-female connectors	649-000022

# Packaging

## Overview: Dispensing Systems

### Dispensing system using positive pressure with inert gas for 30l steel pressurizable drums



System	
Order number	649-000002

### Dispensing system using manual positive pressure for 30l steel pressurizable drums



System	
Order number	028-0EU30S

# Packaging Accessories

We at Scharlab, take into consideration your daily laboratory activities and your work in production facilities. As such, we have developed a range of accessories to facilitate the handling and storage of our products so that you can use them with maximum convenience, efficiency and safety.

		ART. NO.	DESCRIPTION
DISPENSING SYSTEMS	PRESSURIZABLE DRUMS  20, 30, 60, 185 & 200l	028-0EU30S	Dispensing system using manual positive pressure for 30l pressurizable steel drums
		028-000002	Dispensing system using positive pressure with inert gas for 30l steel pressurizable drums
		649-000019	Dispensing system using positive pressure with inert gas for pressurizable steel drums. Deep pipes and connectors not included.
		649-000020	Deep pipe for 30l drums
		649-000021	Deep pipe for 185l and 200l drums
		649-000022	Male-female connectors
		028-0EK07S	Dispensing system using manual positive pressure for 7l steel drums
	7l DRUMS	033-065.05	Dispenser, 10-50ml
		033-065.06	Dispenser, 20-100ml
		033-00Tdos	Screw cap GL45 for HPLC
	25l DRUMS	113-GR7040	Self-closing tap 1 ½" for 25l safety drums
		113-TAP25S	Air valve for 25l safety drum
		113-GR7041	Screw cap 1 ½" for 25l safety drums
OTHER ACCESSORIES		055-GR010C	Tap for "Kubitainer" 10l
		202-250001	Metallic tap for Combi 25l drum
		232-SOPBID	Support for 25l drums. Suitable for any 25l metallic drums
		232-SOPSOB	Bench cap support for 25l metallic drums
		055-GR005P	Tap for 5l carboy
		055-GR025P	Tap for 25l carboys
		055-GR025L	Plastic tap for 25l metal drum
		055-GR025B	Tap for steel drum 2" opening
		055-LLAVEB	Drum opening wrench
		055-LLAVEF	Bottle opening wrench
		055-LLAVG2	Carboy opening wrench
		055-LLAVEM	Opening wrench for 185l and 200l steel drums
		033-AD5L+T	Adaptor kit to connect dispensers (25, 50 or 100ml) to 5l carboys





# Services

## Custom Made Products

# You imagine it, we develop it

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The challenges facing professionals in laboratories and industry research centers vary. To address these needs, in addition to our comprehensive catalogue, we offer a wide range of solutions developed by our R&D department and certified by our laboratory.

## Product

### Customised solvents purification

If none of our available solvents meets your specifications, we can customise our solvent purification according to your requirements.

We have reactors with capacities from 300 to 1200l with the possibility of vacuum distillation as well as columns of different diameters and efficiencies.

We also perform chemical treatments to remove impurities as well as microfiltration to 0,1 µm.

### Mixtures of solvents

We offer prepared mixtures of solvents so that you can avoid the risk of handling flammable substances.

Our facilities are equipped to handle all kinds of solvents and solvent mixtures with minimal risk.

### Aqueous or organic solutions

- Volumetric solutions
- Buffers
- Mobile phases for chromatography

The customised manufacture of standard solutions, buffers and mobile phases for chromatography is of major importance in terms of time saving in the laboratory. The preparation of these solutions is laborious and requires further analysis by using a method validated in the laboratory. Let us help you:

- Save time in the preparation of reagents and the development of analytical methods for their validation
- Guaranteed results by using the CoA that we provide as manufacturer
- Classification of the mixture according to the CLP regulation is avoided
- Eliminate the need to print product identification labels
- Save time and money on primary standards

### Reagents for analysers

Some equipment including Kjeldahl or TOC analysers need to incorporate different reagents or wash solutions which may be manufactured by Scharlab.

All our custom made products are certified by our laboratory and supplied with all necessary technical information: Technical Data Sheet (TDS), Safety Data Sheet (SDS) and Certificate of Analysis (CoA).



## Features

### Flexible packaging

The versatility of our manufacturing facility located in Sentmenat (Barcelona) allows us to work with all kinds of chemicals and packaging formats from 1ml to 1000l.

- We offer a wide range of product packaging: bottles, cans, Kubitainers, drums and IBC
- Made of a variety of materials: glass, polyethylene, steel, always taking into account the chemical product compatibility
- “Ready to use” quantities: for customers who need a repetitive amount of the same product

The packaging is flexible both in single use packaging as well as in drums and returnable cans.

### Tailor-made analysis and specifications

Our laboratory is equipped with advanced analytical instrumentation for HPLC, GC, GC-MS, ICP, potentiometric titration, IR, fluorimetry, UV-VIS spectrophotometry analysis, enabling the certification of the specifications requested by the client to be incorporated in the relevant CoA.

We study the feasibility of all applications according to their specifications.

Download the custom made application form from: [www.scharlab.com](http://www.scharlab.com)

# Services

## Returnable Drum Service: R.D.S.

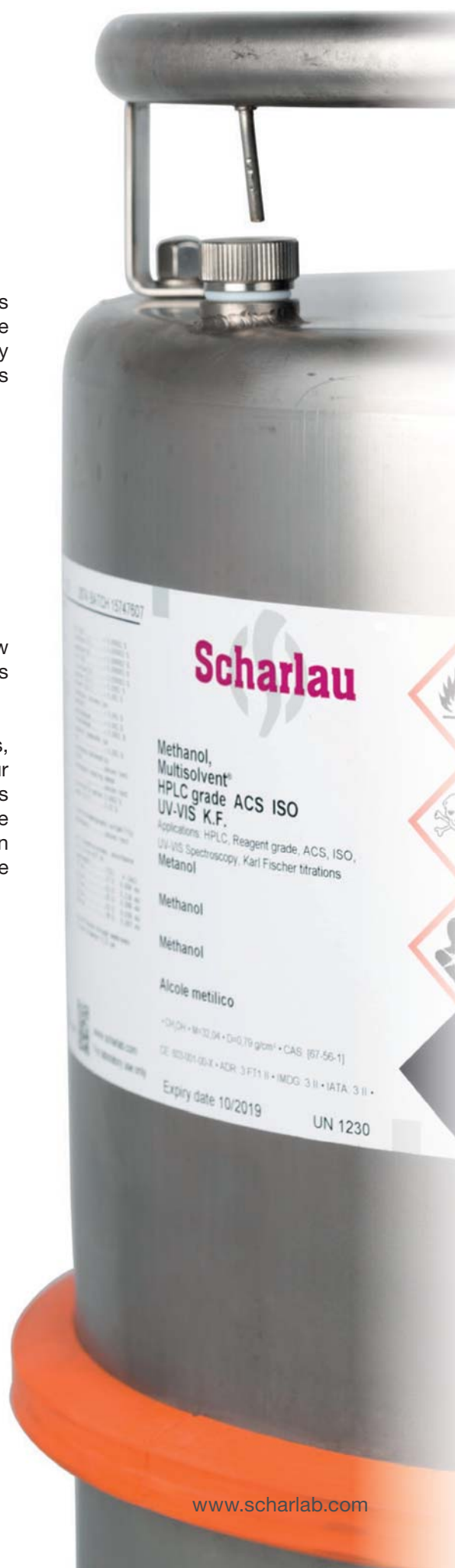
We are pioneers in the introduction of the exclusive Returnable Drums Service, the simplest system for the management of solvents. We are unique in providing drums for exclusive use by an individual customer, thereby supporting the achievement of their goals as chemical analysis professionals through:

- The minimisation of waste
- Economical costs
- Providing a safe and secure chemical storage environment
- Preserving product integrity
- Providing environmentally friendly surroundings

### Attentive to the needs of our clients

When we introduced R.D.S. nobody had identified a need to develop new ways of managing solvents for chemical analysis that would benefit customers and the environment.

First introduced in 1994 in Spain and afterwards within other EU countries, the R.D.S. service is increasingly in demand by professionals who rely on our products and services. Currently more than 500 customers and professionals from the widest range of industries benefit from Scharlab's R.D.S. This service enables us to gain a greater understanding of customer requirements and in so doing, further strengthens the trust that customers and professionals have in us.



# The simplest way to manage your solvents

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## Benefits

### Exclusive Drums for each customer

- Better quality assurance for the users
- Better packaging to preserve product integrity
- Risk of product contamination minimised

### Environmentally friendly

- Wastage of empty glass containers is eliminated
- No additional packaging (i.e. boxes and other materials) is required
- Waste due to packaging materials is minimised
- Contributes to the compliance of ISO 14001
- Reusable drums
- R.D.S. System is recognised as Deposit and Return System (DRS), in accordance with Law 11/1997, RD 782/1998 and the Order of April 27, 1998

### Economical benefits

- Minimises the cost of waste management and recycling
- Space saving: up to 50% less space compared to equivalent volumes packaged in glass bottles
- Less storage costs
- Minimal waste

### Maximum safety for the user

- Reduced fire hazard
- Robust containers resistant to impacts
- Avoids spills
- Safety drums available for flammable products

### Enhanced Product Quality

- Newly packaged product in each shipment
- GL45 neck that allows direct connection to HPLC equipment
- Closed system from the point of production to the place of use
- Contamination from air or moisture is avoided
- Drums designed to contain high purity solvents

### Flexibility

- Adaptable to customers' changing consumption needs
- Variety of containers and sizes to suit every need

### Efficient logistics

- Pressurizable containers that enable the supply of solvent to the point of use, eliminating the transfer of containers in the laboratory

# Services

## R.D.S.

### R.D.S. Cycle

Every laboratory aims to minimise waste production. With the R.D.S. cycle the economic cost of management is reduced and it helps to preserve the environment.

#### R.D.S.: How does the cycle work?

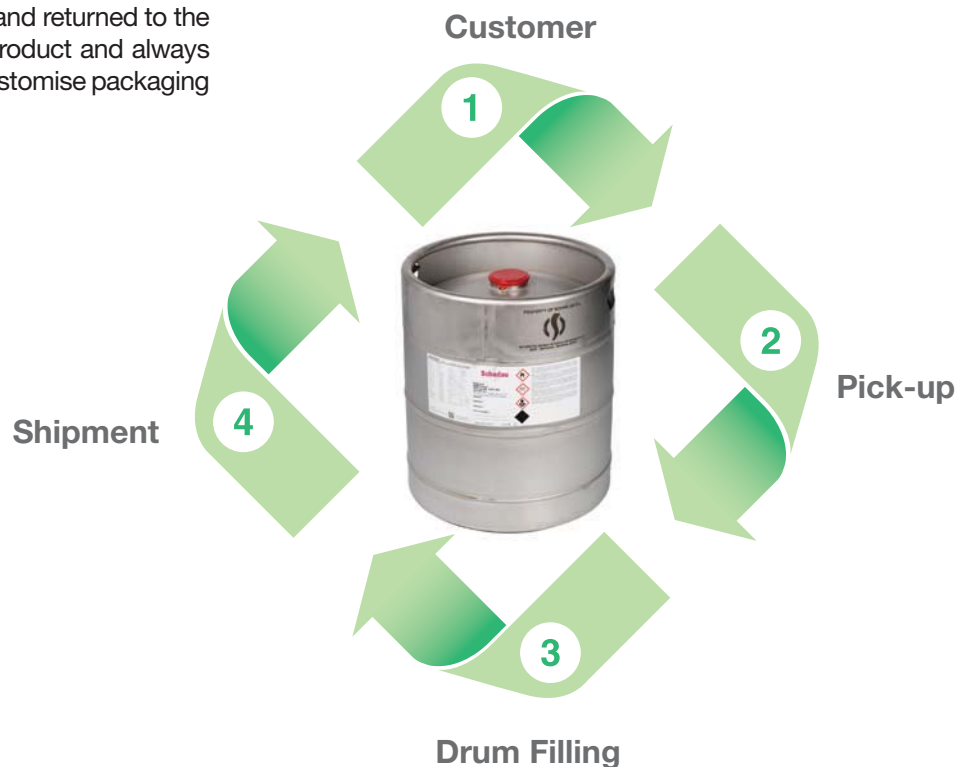
Our Returnable Drums Service, R.D.S. is characterised by offering our solvents in drums that are customised for each product and customer, by means of a delivery and collection service that adapts to the consumption needs of the user.

- Scharlab reviews the number of containers needed by each client based on their product consumption
- In the first shipment, the customer receives all the agreed drums ①
- As the drums are used we collect and transport the empty drums to our facilities within the Spanish and Italian territory. In other countries this service is organised by the dealer ②
- Here the drums are set up, refilled and returned to the customer: always with the same product and always to the same client. To do this, we customise packaging with the code of each client ③④

#### Flexible and customised design

The number of containers can be adapted to the consumption needs and diversity of solvents required. Thus, we provide a tailor-made service.

- This number is established on the basis of a contract between the client and Scharlab
- Through a system of regular monitoring, we identify the requirements to expand and / or modify the contract, thus adapting to the customers' actual requirements



## Product

Product	Grade						
	Synthesis	Extra Pure	Reagent	HPLC Isocratic/ Multisolvent®	HPLC Gradient	HPLC Supragradient	GC Residue Analysis
Acetone	AC0306			AC0310			AC0308
Acetonitrile				AC0333	AC0329	AC0331	
2-Propanol	AL0310		AL0312	AL0321	AL0315		
Cyclohexane		CL0031					
Dichloromethane, stabilised w. Amylene	CL0329	CL0331	CL0342	CL0347			
Dichloromethane, stabilised w. Ethanol			CL0332				CL0340
NN,N-Dimethylformamide				DI1072			
Ethanol Absolute	ET0002	ET0006	ET0005	ET0015	ET0010		
Ethanol 96%		ET0003	ET0004	ET0013			
Diethyl ether	ET0077	ET0078	ET0079	ET0082			
Petroleum ether 40-60	ET0090	ET0091	ET0092	ET0095			
Ethyl acetate	AC0140	AC0143	AC0145	AC0155			AC0148
Heptane, fraction from petroleum		HE0120					
n-Heptane			HE0127	HE0131			
Hexane, fraction from petroleum	HE0219	HE0220	HE0222	HE0221			
n-Hexane 96%		HE0227	HE0228	HE0234			HE0239
n-Hexane 99%			HE0232	HE0242			
Methanol		ME0301		ME0315		ME0306	
Mixture acetone/water, 98:2 v/v	AC0304						
Acidity mixture			ME0507				
TAN mixture			ME0790				
TBN mixture		ME0513	ME0551				
tert-Butyl methyl ether							
Tetrahydrofuran w.o. Stabiliser				TE0225			
Tetrahydrofuran w. Stabiliser	TE0219		TE0221	TE0228			
Toluene	T00072	T00073	T00075	T00085			

## Packaging

Our R.D.S. offers packaging of different materials and sizes, to suit user requirements, as well as accessories to facilitate the handling and storage of drums and to make the process more simple, convenient and safe.

The R.D.S. returnable drums are available in **7l, 25l, 30l, 100l, 185l, 200l and 1.000l** sizes.

### 7 liter stainless steel drum

- The neck (GL45) is like that of a glass bottle enabling the same dosing systems or analytical instrument plugs (HPLC, titrators, etc.) to be used
- User friendly, thanks to its metal handle
- Occupies much less space than 3 bottles of 2.5l and unlike glass, does not break
- Suitable for storage of all liquids compatible with steel, including high purity liquids



7l

# Services

## R.D.S.

### 25 liter stainless steel safety drum

- Safety features. In addition to its impact resistance, the safety drum has additional safety features: Davy Sieve, valve for air inlet and safety valve that prevents explosion
- In case of fire, the flames do not penetrate the drum, thus preventing explosions<sup>100</sup>
- It is particularly suitable for storing flammable liquids such as hexane, acetone and ether
- Once on site, the cap is replaced by a steel self-closing tap to enable emptying in a horizontal position. A thick metal ring on the upper part of the drum enables easy handling and stacking



25l

### 30, 100, 185 and 200 liter stainless steel drum

- For large solvent consumption. The absence of polymer joints between the different parts of the drum ensures that the product is preserved to the highest quality
- Used for the storage of all solvents with the exception of some chlorinated solvents, due to their chemical incompatibility with steel
- The drums can be pressurised making them suitable in applications where solvents are dispensed over long distances
- The liquid can be removed by positive pressure via an inert gas through a steel dispensing system



30l

When greater than 5000l per year of product is consumed, a 1000l pressurizable container can be offered.

R.D.S. currently available in European Community



## R.D.S. Accessories

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		649-000020	Deep pipe for 30l drums	
		649-000021	Deep pipe for 185l and 200l drums	
		649-000022	Male-female connectors	
		028-0EK07S	Dispensing system by manual positive pressure for 7l steel drums	
		<b>7l DRUMS</b>	033-065.05	Dispenser, 10-50ml
			033-065.06	Dispenser, 20-100ml
	033-00Tdos		Screw cap GL45 for HPLC	
	<b>25l DRUMS</b>	113-GR7040	Self-closing tap 1 ½" for 25l safety drums	
		113-TAP25S	Air valve for 25l safety drum	
		113-GR7041	Screw cap 1 ½" for 25l safety drums	



# Safety

## CLP Compliance

### Classification labelling and packaging of substances and mixtures (CLP)

The European Union adopted the GHS (Globally Harmonized System of Classification and Labelling of Chemicals) by means of a new regulation (EC) no. 1272/2008, also called the CLP, which came into force the 20 of January 2009 in all the member states.

The goal is to unify the different criteria for classification of dangerous substances that coexist in the world.

The CLP is replacing the old system of classification and labelling defined by the directives 67/548/EEC (DSD) and 1999/45/EC (DPD) for substances and mixtures respectively. These directives will become invalid on the 1 of June 2015.

Important dates in the implementation of the CLP:

- 1 December 2010. From this date it is obligatory to classify and to label all substances according to the CLP
- 1 December 2012: All the warehoused substances must be labelled according to CLP
- 1 June 2015. From this date it is obligatory to classify and to label all mixtures according to the CLP. Warehoused mixtures labelled according to DPD must be labelled according to the CLP within two years of this date

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 onwards
CLP timeline	Substances		Classified, labelled and packaged under DSD. If CLP is applied in full as well, no DSD labelling and packaging			Classified under both DSD and CLP, labelled and packaged under CLP			Classified labelled and packaged under CLP				
	Mixtures		Classified labelled and packaged under DPD. If CLP is applied in full as well, no DPD labelling and packaging										
		CLP entry into force: repeal of Annex I to DSD 20 January 2009		Obligation to apply CLP to substances 1 December 2010					Obligation to apply CLP to mixtures 1 June 2015				

Since May 2010 Scharlab complies with the CLP classification system for all substances and mixtures manufactured under Scharlau brand, chemicals and microbiological culture media, product range. As well, all Scharlau chemicals manufactured from May 2010 onwards are labelled according to the CLP (continuously updated according to the Adaptation to Technical Progress: <http://echa.europa.eu/web/guest/regulations/clp/legislation>).

# Safe for you, safe for the environment

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## Safety Data Sheet

SDS contents are also affected by both REACH and CLP. The new Regulation (EC) no. 453/2010 modifies CE 1907/2006 (REACH) and becomes the guideline for the issuing of SDS according to the CLP.

The main changes are introduced in the identification of substances and their uses, classification, and elements in the label, composition and toxicological information.

We are continuously updating SDS for products manufactured under Scharlab brand making them compliant with new regulations.

SDS for all substances and mixtures are available through our website [www.scharlab.com](http://www.scharlab.com).

Download the SDS in your smartphone, using our ScharlabQR App

# Safety

## CLP Compliance

### Classification of Substances

The EU has aligned the CLP hazard classes with those from the UN GHS (Globally Harmonised System) closely matching the DSD categories of danger. Hazard classes are broken down further into hazard categories. The total number of hazard classes has increased.

CLP Hazard Classes and Categories	
Physical Hazards	Health Hazards
Explosives (Unstable explosives, Divisions 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6) <sup>D</sup>	Acute toxicity, (Category 1, 2, 3 and 4) <sup>D</sup>
Flammable gases (Category 1 and 2) <sup>D</sup>	Skin corrosion/irritation, (Category 1A, 1B, 1C and 2) <sup>D</sup>
Flammable aerosols (Category 1 and 2) <sup>D</sup>	Serious eye damage/eye irritation, (Category 1 and 2) <sup>D</sup>
Oxidising gases (Category 1) <sup>D</sup>	Respiratory or skin sensitisation (Category 1) <sup>D</sup>
Gases under pressure (Compressed gas, liquefied gas, refrigerated liquefied gas, dissolved gas)	Germ cell mutagenicity, (Category 1A, 1B and 2) <sup>D</sup>
Flammable Liquids (Category 1, 2 and 3) <sup>D</sup>	Carcinogenicity, (Category 1A, 1B and 2) <sup>D</sup>
Flammable solids (Category 1 and 2) <sup>D</sup>	Reproductive toxicity (Category 1A, 1B and 2) <sup>D</sup> plus additional category for effects on or via lactation
Self-reactive substances and mixtures (Type A, B, C, D, E, F, & G) (Types A and B) <sup>D</sup>	Specific target organ toxicity (STOT) – single exposure ((Category 1, 2) <sup>D</sup> and Category 3 for narcotic effects and respiratory tract irritation, only)
Pyrophoric liquids (Category 1) <sup>D</sup>	Specific target organ toxicity (STOT) – repeated exposure (Category 1 and 2) <sup>D</sup>
Pyrophoric solids (Category 1) <sup>D</sup>	Aspiration hazard (Category 1) <sup>D</sup>
Self-heating substances and mixtures (Category 1 and 2)	
Substances and mixtures which in contact with water emit flammable gases (Category 1, 2 and 3) <sup>D</sup>	Environmental Hazards
Oxidising liquids (Category 1, 2 and 3) (Cat 1 and 2) <sup>D</sup>	Hazardous to the aquatic environment (Acute Category 1, Chronic Category 1, 2, 3, and 4) <sup>D</sup>
Oxidising solids (Category 1, 2 and 3) (Cat 1 and 2) <sup>D</sup>	Hazardous to the ozone layer <sup>D</sup>
Organic peroxides, (Type A, B, C, D, E, F & G) (Types A to F) <sup>D</sup>	
Corrosive to metals (Category 1)	

<sup>D</sup>CLP hazard classifications (whole hazard class or the highlighted categories) which reflect –“classified as dangerous” under DSD/DPD.

## Hazard Pictograms

Hazard pictograms are related to hazard classes:

### Physical Hazards:



Explosives



Flammable liquids



Oxidizing liquids



Compressed gases



Corrosive to metals

### Health Hazards:



Acute toxicity



Skin irritation



Skin corrosion



CMR<sup>(1)</sup>, STOT<sup>(2)</sup>,  
aspiration hazard



Hazardous to the  
aquatic environment

### Environment Hazards:

(1) carcinogenic, mutagenic, toxic to reproduction / (2) specific target organ toxicity

According to the CLP, risk (R) and safety (S) phrases are replaced by hazard (H) and precautionary (P) statements respectively. The H and P statements are codified using a unique code which consists of one letter and 3 numbers as follows:

- The letter H or P (some hazard statements carried through from DSD and DPD which are not yet included in the GHS are codified according to the EUH)
- A digit designating the type of hazard (i.e. 2 for physical hazard)
- Two digits corresponding to the sequential numbering of hazards (i.e. flammability codes from 220 to 230)

#### Code Ranges For Hazard And Precautionary Statements

##### H Statements

200-299 Physical hazards

300-399 Health hazards

400-499 Environment hazard

##### P Statements

1 00 General

2 00 Prevention

3 00 Response

4 00 Storage

5 00 Disposal

# Safety

## H&P Statements

### H: Hazard statements

#### Hazard statements for physical hazards

<b>H200</b>	Unstable explosives.
<b>H201</b>	Explosive; mass explosion hazard.
<b>H202</b>	Explosive, severe projection hazard.
<b>H203</b>	Explosive; fire, blast or projection hazard.
<b>H204</b>	Fire or projection hazard.
<b>H205</b>	May mass explode in fire.
<b>H220</b>	Extremely flammable gas.
<b>H221</b>	Flammable gas.
<b>H222</b>	Extremely flammable aerosol.
<b>H223</b>	Flammable aerosol.
<b>H224</b>	Extremely flammable liquid and vapour.
<b>H225</b>	Highly flammable liquid and vapour.
<b>H226</b>	Flammable liquid and vapour.
<b>H227</b>	Combustible liquid.
<b>H228</b>	Flammable solid.
<b>H229</b>	Pressurised container: May burst if heated.
<b>H230</b>	May react explosively even in the absence of air.
<b>H231</b>	May react explosively even in the absence of air at elevated pressure and/or temperature.
<b>H240</b>	Heating may cause an explosion.
<b>H241</b>	Heating may cause a fire or explosion.
<b>H242</b>	Heating may cause a fire.
<b>H250</b>	Catches fire spontaneously if exposed to air.
<b>H251</b>	Self-heating; may catch fire.
<b>H252</b>	Self-heating in large quantities; may catch fire.
<b>H260</b>	In contact with water releases flammable gases which may ignite spontaneously.
<b>H261</b>	In contact with water releases flammable gases.
<b>H270</b>	May cause or intensify fire; oxidiser.
<b>H271</b>	May cause fire or explosion; strong oxidiser.
<b>H272</b>	May intensify fire; oxidiser.
<b>H280</b>	Contains gas under pressure; may explode if heated.
<b>H281</b>	Contains refrigerated gas; may cause cryogenic burns or injury.
<b>H290</b>	May be corrosive to metals.

#### Hazard statements for health hazards

<b>H300</b>	Fatal if swallowed.
<b>H300+H310</b>	Fatal if swallowed or in contact with skin.
<b>H300+H310+H330</b>	Fatal if swallowed, in contact with skin or if inhaled.
<b>H300+H330</b>	Fatal if swallowed or if inhaled.
<b>H301</b>	Toxic if swallowed.
<b>H301+H311</b>	Toxic if swallowed or in contact with skin.
<b>H301+H311+H331</b>	Toxic if swallowed, in contact with skin or if inhaled.
<b>H301+H331</b>	Toxic if swallowed or if inhaled.
<b>H302</b>	Harmful if swallowed.
<b>H302+H312</b>	Harmful if swallowed or in contact with skin.
<b>H302+H312+H332</b>	Harmful if swallowed, in contact with skin or if inhaled.
<b>H302+H332</b>	Harmful if swallowed or if inhaled.
<b>H303</b>	May be harmful if swallowed.
<b>H303+H313</b>	May be harmful if swallowed or in contact with skin
<b>H303+H313+H333</b>	May be harmful if swallowed, in contact with skin or if inhaled
<b>H303+H333</b>	May be harmful if swallowed or if inhaled
<b>H304</b>	May be fatal if swallowed and enters airways.
<b>H305</b>	May be harmful if swallowed and enters airways.
<b>H310</b>	Fatal in contact with skin.
<b>H310+H330</b>	Fatal in contact with skin or if inhaled.
<b>H311</b>	Toxic in contact with skin.
<b>H311+H331</b>	Toxic in contact with skin or if inhaled.
<b>H312</b>	Harmful in contact with skin.
<b>H312+H332</b>	Harmful in contact with skin or if inhaled.
<b>H313</b>	May be harmful in contact with skin.
<b>H313+H333</b>	May be harmful in contact with skin or if inhaled
<b>H314</b>	Causes severe skin burns and eye damage.

<b>H315</b>	Causes skin irritation.
<b>H315+H320</b>	Causes skin and eye irritation
<b>H316</b>	Causes mild skin irritation.
<b>H317</b>	May cause an allergic skin reaction.
<b>H318</b>	Causes serious eye damage.
<b>H319</b>	Causes serious eye irritation.
<b>H320</b>	Causes eye irritation.
<b>H330</b>	Fatal if inhaled.
<b>H331</b>	Toxic if inhaled.
<b>H332</b>	Harmful if inhaled.
<b>H333</b>	May be harmful if inhaled.
<b>H334</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>H335</b>	May cause respiratory irritation.
<b>H336</b>	May cause drowsiness or dizziness.
<b>H340</b>	May cause genetic defects.
<b>H341</b>	Suspected of causing genetic defects.
<b>H350</b>	May cause cancer.
<b>H350i</b>	May cause cancer by inhalation.
<b>H351</b>	Suspected of causing cancer.
<b>H360</b>	May damage fertility or the unborn child.
<b>H360D</b>	May damage the unborn child.
<b>H360Df</b>	May damage the unborn child. Suspected of damaging fertility.
<b>H360F</b>	May damage fertility.
<b>H360FD</b>	May damage fertility. May damage the unborn child.
<b>H360Fd</b>	May damage fertility. Suspected of damaging the unborn child.
<b>H361</b>	Suspected of damaging fertility or the unborn child.
<b>H361d</b>	Suspected of damaging the unborn child.
<b>H361f</b>	Suspected of damaging fertility.
<b>H361fd</b>	Suspected of damaging fertility. Suspected of damaging the unborn child.
<b>H362</b>	May cause harm to breast-fed children.
<b>H370</b>	Causes damage to organs.
<b>H371</b>	May cause damage to organs.
<b>H372</b>	Causes damage to organs through prolonged or repeated exposure.
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure.

## Hazard statements for environmental hazards

<b>H400</b>	Very toxic to aquatic life.
<b>H401</b>	Toxic to aquatic life.
<b>H402</b>	Harmful to aquatic life.
<b>H410</b>	Very toxic to aquatic life with long lasting effects.
<b>H411</b>	Toxic to aquatic life with long lasting effects.
<b>H412</b>	Harmful to aquatic life with long lasting effects.
<b>H413</b>	May cause long lasting harmful effects to aquatic life.
<b>H420</b>	Harms public health and the environment by destroying ozone in the upper atmosphere.

## European Union supplemental hazard information

### Physical properties

<b>EUH001</b>	Explosive when dry.
<b>EUH006</b>	Explosive with or without contact with air.
<b>EUH014</b>	Reacts violently with water.
<b>EUH018</b>	In use may form flammable / explosive vapour-air mixture.
<b>EUH019</b>	May form explosive peroxides.
<b>EUH044</b>	Risk of explosion if heated under confinement.

### Health properties

<b>EUH029</b>	Contact with water liberates toxic gas.
<b>EUH031</b>	Contact with acids liberates toxic gas.
<b>EUH032</b>	Contact with acids liberates very toxic gas.
<b>EUH066</b>	Repeated exposure may cause skin dryness or cracking.
<b>EUH070</b>	Toxic by eye contact.
<b>EUH071</b>	Corrosive to the respiratory tract.

## Environmental properties

**EUH059** Hazardous to the ozone layer.

## Other properties

<b>EUH201</b>	Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.
<b>EUH201A</b>	Warning! Contains lead.
<b>EUH202</b>	Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children.
<b>EUH203</b>	Contains chromium (VI). May produce an allergic reaction.
<b>EUH204</b>	Contains isocyanates. May produce an allergic reaction.
<b>EUH205</b>	Contains epoxy constituents. May produce an allergic reaction.
<b>EUH206</b>	Warning! Do not use together with other products. May release dangerous gases (chlorine).
<b>EUH207</b>	Warning! Contains cadmium. Dangerous fumes are formed during use. See information supplied by the manufacturer. Comply with the safety instructions.
<b>EUH208</b>	Contains <name of sensitising substance>. May produce an allergic reaction.
<b>EUH209</b>	Can become highly flammable in use.
<b>EUH209A</b>	Can become flammable in use.
<b>EUH210</b>	Safety data sheet available on request.
<b>EUH401</b>	To avoid risks to human health and the environment, comply with the instructions for use.

## Precautionary statements-General

<b>P101</b>	If medical advice is needed, have product container or label at hand.
<b>P102</b>	Keep out of reach of children.
<b>P103</b>	Read label before use.

## Precautionary statements-Prevention

<b>P201</b>	Obtain special instructions before use.
<b>P202</b>	Do not handle until all safety precautions have been read and understood.
<b>P210</b>	Keep away from heat / sparks / open flames / hot surfaces. - No smoking.
<b>P210a</b>	Keep away from heat. - No smoking.
<b>P210b</b>	Keep away from sparks. - No smoking.
<b>P210c</b>	Keep away from open flames. - No smoking.
<b>P210d</b>	Keep away from hot surfaces. - No smoking.
<b>P211</b>	Do not spray on an open flame or other ignition source.
<b>P220</b>	Keep / Store away from clothing / combustible materials.
<b>P220a</b>	Keep away from clothing.
<b>P220b</b>	Keep away from combustible materials.
<b>P220c</b>	Keep away from reducing agents, heavy metal compounds, acids and alkalis.
<b>P220d</b>	Keep away from oxidising and acidic substances, as well as heavy metal compounds.
<b>P220e</b>	Keep away from iron.
<b>P220f</b>	Keep away from water.
<b>P220g</b>	Keep away from acids.
<b>P220h</b>	Keep away from alkaline solutions.
<b>P220i</b>	Keep away from metals.
<b>P220j</b>	Keep away from oxidising agents and acidic substances.
<b>P220k</b>	Keep away from flammable organic substances.
<b>P220l</b>	Keep away from acids, reducing agents and flammable materials.
<b>P221</b>	Take any precaution to avoid mixing with combustibles.
<b>P222</b>	Do not allow contact with air.
<b>P223</b>	Keep away from any possible contact with water, because of violent reaction and possible flash fire.
<b>P230</b>	Keep wetted with...

# Safety

## H&P Statements

<b>P230a</b>	Keep wetted.
<b>P231</b>	Handle under inert gas.
<b>P231+P232</b>	Handle under inert gas. Protect from moisture.
<b>P232</b>	Protect from moisture.
<b>P233</b>	Keep container tightly closed.
<b>P234</b>	Keep only in original container.
<b>P235</b>	Keep cool.
<b>P235+P410</b>	Keep cool. Protect from sunlight.
<b>P240</b>	Ground/bond container and receiving equipment.
<b>P241</b>	Use explosion-proof electrical / ventilating / lighting / equipment.
<b>P242</b>	Use only non-sparking tools.
<b>P243</b>	Take precautionary measures against static discharge.
<b>P244</b>	Keep reduction valves free from grease and oil.
<b>P250</b>	Do not subject to grinding / shock / friction.
<b>P251</b>	Pressurised container: Do not pierce or burn, even after use.
<b>P260</b>	Do not breathe dust / fume / gas / mist / vapours / spray.
<b>P261</b>	Avoid breathing dust / fume / gas / mist / vapours / spray.
<b>P262</b>	Do not get in eyes, on skin, or on clothing.
<b>P263</b>	Avoid contact during pregnancy / while nursing.
<b>P264</b>	Wash thoroughly after handling.
<b>P270</b>	Do not eat, drink or smoke when using this product.
<b>P271</b>	Use only outdoors or in a well-ventilated area.
<b>P272</b>	Contaminated work clothing should not be allowed out of the workplace.
<b>P273</b>	Avoid release to the environment.
<b>P280</b>	Wear protective gloves / protective clothing / eye protection / face protection.
<b>P280a</b>	Wear protective gloves and eye / face protection.
<b>P280b</b>	Wear protective gloves and eye protection.
<b>P280c</b>	Wear protective gloves and face protection.
<b>P280d</b>	Wear protective clothing and eye protection.

<b>P280e</b>	Wear protective clothing and face protection.
<b>P280f</b>	Wear protective clothing.
<b>P280g</b>	Wear protective gloves.
<b>P280h</b>	Wear protective gloves / clothing.
<b>P280i</b>	Wear eye / face protection.
<b>P280j</b>	Wear face protection.
<b>P281</b>	Use personal protective equipment as required.
<b>P282</b>	Wear cold insulating gloves / face shield / eye protection.
<b>P283</b>	Wear fire / flame resistant / retardant clothing.
<b>P284</b>	Wear respiratory protection.
<b>P285</b>	In case of inadequate ventilation wear respiratory protection.

## Precautionary statements – Response

<b>P301</b>	IF SWALLOWED:
<b>P301+P310</b>	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
<b>P301+P312</b>	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
<b>P301+P330+P331</b>	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
<b>P302</b>	IF ON SKIN:
<b>P302+P334</b>	IF ON SKIN: Immerse in cool water / wrap in wet bandages.
<b>P302+P350</b>	IF ON SKIN: Gently wash with plenty of soap and water.
<b>P302+P352</b>	IF ON SKIN: Wash with plenty of soap and water.
<b>P303</b>	IF ON SKIN (or hair):
<b>P303+P361+P353</b>	IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.
<b>P304</b>	IF INHALED:
<b>P304+P312</b>	IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.
<b>P304+P340</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
<b>P304+P341</b>	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
<b>P305</b>	IF IN EYES:
<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P306</b>	IF ON CLOTHING:
<b>P306+P360</b>	IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
<b>P307</b>	IF exposed:
<b>P307+P311</b>	IF exposed: Call a POISON CENTER or doctor / physician.
<b>P308</b>	IF exposed or concerned:
<b>P308+P311</b>	IF exposed or concerned: Call a POISON CENTER/doctor/...
<b>P308+P313</b>	IF exposed or concerned: Get medical advice / attention.
<b>P309</b>	IF exposed or if you feel unwell:
<b>P309+P311</b>	IF exposed or if you feel unwell: Call a POISON CENTER or doctor / physician.
<b>P310</b>	Immediately call a POISON CENTER or doctor / physician.
<b>P311</b>	Call a POISON CENTER or doctor / physician.
<b>P312</b>	Call a POISON CENTER or doctor / physician if you feel unwell.
<b>P313</b>	Get medical advice / attention.
<b>P314</b>	Get medical advice / attention if you feel unwell.
<b>P315</b>	Get immediate medical advice / attention.
<b>P320</b>	Specific treatment is urgent (see on this label).
<b>P321</b>	Specific treatment (see on this label).
<b>P322</b>	Specific measures (see on this label).
<b>P330</b>	Rinse mouth.
<b>P331</b>	Do NOT induce vomiting.
<b>P332</b>	If skin irritation occurs:



<b>P332+P313</b> If skin irritation occurs: Get medical advice attention.	<b>P364</b> And wash it before reuse.	explosives.
<b>P333</b> If skin irritation or rash occurs:	<b>P370</b> In case of fire:	<b>P374</b> Fight fire with normal precautions from a reasonable distance.
<b>P333+P313</b> If skin irritation or rash occurs: Get medical advice / attention.	<b>P370+P376</b> In case of fire: Stop leak if safe to do so.	<b>P375</b> Fight fire remotely due to the risk of explosion.
<b>P334</b> Immerse in cool water / wrap in wet bandages.	<b>P370+P378</b> In case of fire: Use ... for extinction.	<b>P376</b> Stop leak if safe to do so.
<b>P335</b> Brush off loose particles from skin.	<b>P370+P378a</b> In case of fire: Use for extinction: CO2, powder or water spray.	<b>P377</b> Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
<b>P335+P334</b> Brush off loose particles from skin. Immerse in cool water / wrap in wet bandages.	<b>P370+P378b</b> In case of fire: Use for extinction: Special powder for metal fires.	<b>P378</b> Use ... for extinction.
<b>P336</b> Thaw frosted parts with lukewarm water. Do no rub affected area.	<b>P370+P378c</b> In case of fire: Use for extinction: CO2, sand, extinguishing powder.	<b>P378a</b> Use for extinction: CO2, powder or water spray.
<b>P337</b> If eye irritation persists:	<b>P370+P378d</b> In case of fire: Use for extinction: Water.	<b>P378b</b> Use for extinction: Special powder for metal fires.
<b>P337+P313</b> If eye irritation persists: Get medical advice / attention.	<b>P370+P378e</b> In case of fire: Use for extinction: Water haze.	<b>P378c</b> Use for extinction: CO2, sand, extinguishing powder.
<b>P338</b> Remove contact lenses, if present and easy to do. Continue rinsing.	<b>P370+P378f</b> In case of fire: Use for extinction: Water spray.	<b>P378d</b> Use for extinction: Water.
<b>P340</b> Remove victim to fresh air and keep at rest in a position comfortable for breathing.	<b>P370+P378g</b> In case of fire: Use for extinction: Foam.	<b>P378e</b> Use for extinction: Water haze.
<b>P341</b> If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.	<b>P370+P378h</b> In case of fire: Use for extinction: Alcohol resistant foam.	<b>P378f</b> Use for extinction: Water spray.
<b>P342</b> If experiencing respiratory symptoms:	<b>P370+P378i</b> In case of fire: Use for extinction: Fire-extinguishing powder.	<b>P378g</b> Use for extinction: Foam.
<b>P342+P311</b> If experiencing respiratory symptoms: Call a POISON CENTER or doctor / physician.	<b>P370+P378j</b> In case of fire: Use for extinction: BC powder.	<b>P378h</b> Use for extinction: Alcohol resistant foam.
<b>P350</b> Gently wash with plenty of soap and water.	<b>P370+P378k</b> In case of fire: Use for extinction: ABC powder.	<b>P378i</b> Use for extinction: Fire-extinguishing powder.
<b>P351</b> Rinse cautiously with water for several minutes.	<b>P370+P378l</b> In case of fire: Use for extinction: Carbon dioxide.	<b>P378j</b> Use for extinction: BC powder.
<b>P352</b> Wash with plenty of soap and water.	<b>P370+P378m</b> In case of fire: Use for extinction: Limestone powder.	<b>P378k</b> Use for extinction: ABC powder.
<b>P353</b> Rinse skin with water / shower.	<b>P370+P378n</b> In case of fire: Use for extinction: Cement.	<b>P378l</b> Use for extinction: Carbon dioxide.
<b>P360</b> Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.	<b>P370+P378o</b> In case of fire: Use for extinction: Sand.	<b>P378m</b> Use for extinction: Limestone powder.
<b>P361</b> Remove / Take off immediately all contaminated clothing.	<b>P370+P378p</b> In case of fire: Use for extinction: Dry sand.	<b>P378n</b> Use for extinction: Cement.
<b>P361+P364</b> Take off immediately all contaminated clothing and wash it before reuse.	<b>P370+P380</b> In case of fire: Evacuate area.	<b>P378o</b> Use for extinction: Sand.
<b>P362</b> Take off contaminated clothing and wash before reuse.	<b>P370+P380+P375</b> In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.	<b>P378p</b> Use for extinction: Dry sand.
<b>P362+P364</b> Take off contaminated clothing and wash it before reuse.	<b>P371</b> In case of major fire and large quantities:	<b>P380</b> Evacuate area.
<b>P363</b> Wash contaminated clothing before reuse.	<b>P371+P380+P375</b> In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.	<b>P381</b> Eliminate all ignition sources if safe to do so.
	<b>P372</b> Explosion risk in case of fire.	<b>P390</b> Absorb spillage to prevent material damage.
	<b>P373</b> DO NOT fight fire when fire reaches	<b>P391</b> Collect spillage.

# Safety

## H&P Statements

### Precautionary statements – Storage

<b>P401</b>	Store...
<b>P401a</b>	Store in accordance with local / regional / national / international regulations.
<b>P402</b>	Store in a dry place.
<b>P402+P404</b>	Store in a dry place. Store in a closed container.
<b>P403</b>	Store in a well-ventilated place.
<b>P403+P233</b>	Store in a well-ventilated place. Keep container tightly closed.
<b>P403+P235</b>	Store in a well-ventilated place. Keep cool.
<b>P404</b>	Store in a closed container.
<b>P405</b>	Store locked up.
<b>P406</b>	Store in corrosive resistant container with a resistant inner liner.
<b>P407</b>	Maintain air gap between stacks / pallets.
<b>P410</b>	Protect from sunlight.
<b>P410+P403</b>	Protect from sunlight. Store in a well-ventilated place.
<b>P410+P412</b>	Protect from sunlight. Do not expose to temperatures exceeding 50 °C / 122 °F.
<b>P411</b>	Store at temperatures not exceeding \$ °C / \$ °F.
<b>P411+P235</b>	Store at temperatures not exceeding \$ °C / \$ °F. Keep cool.
<b>P411a</b>	Store at temperatures not exceeding \$°C.
<b>P411a+P235</b>	Store at temperatures not exceeding \$°C. Keep cool.
<b>P411b</b>	Store at temperatures not exceeding \$°F.
<b>P411b+P235</b>	Store at temperatures not exceeding \$°F. Keep cool.
<b>P412</b>	Do not expose to temperatures exceeding 50 °C / 122 °F.
<b>P413</b>	Store bulk masses greater than \$ kg / \$ lbs at temperatures not exceeding \$ °C / \$ °F.
<b>P413a</b>	Store bulk masses greater than \$ kg at temperatures not exceeding \$°C.

<b>P413b</b>	Store bulk masses greater than \$ lbs at temperatures not exceeding \$°F.
<b>P420</b>	Store away from other materials.
<b>P420a</b>	Store away from foodstuffs.
<b>P420b</b>	Store away from flammable substances.
<b>P420c</b>	Store away from oxidizing agents.
<b>P420d</b>	Store away from reducing agents.
<b>P420e</b>	Store away from water.
<b>P420f</b>	Store away from metals.
<b>P420g</b>	Store away from acids.
<b>P420h</b>	Store away from caustic solutions.
<b>P422</b>	Store contents under...
<b>P422a</b>	Store contents under inert gas.
<b>P422b</b>	Store contents under protective gas.
<b>P422c</b>	Store contents under solvent.
<b>P422d</b>	Store under water.
<b>P422e</b>	Store in petroleum.
<b>P422f</b>	Store in nitrogen.

### Precautionary statements – Disposal

<b>P501</b>	Dispose of contents / container to...
<b>P501a</b>	Dispose of contents / container in accordance with local / regional / national / international regulations.
<b>P502</b>	Refer to manufacturer/supplier for information on recovery/recycling.





# Index
























## Abbreviations

<b>AAS</b>	Atomic Absorption Spectrometry	<b>DEV</b>	Deutsches Einheitsverfahren zur Wasser, Abwasser- und Schlamm Untersuchung (German standards methods for the analysis of water, waste water and sludge)	<b>GPC</b>	Gel Permeation Chromatography
<b>ACS</b>	American Chemical Society	<b>DI</b>	Deionised	<b>GR</b>	Guaranteed Reagent
<b>ADR</b>	Agreement concerning the International Carriage of Dangerous Goods by Road	<b>DIN</b>	German standards institute (Deutsches Institut für Normung)	<b>HDPE</b>	High-density Polyethylene
<b>AFNOR</b>	French Association of Standardization (Association Française de Normalisation)	<b>DMF</b>	Dimethyl Sulfoxide	<b>H</b>	Hazard Statement
<b>AOAC</b>	Association of Official Agricultural Chemists	<b>DMSO</b>	Dimethylformamide	<b>HIC</b>	Hydrophobic interaction chromatography
<b>AOX</b>	Absorbable Organic Halogen	<b>DSC</b>	Differential Scanning Calorimetry	<b>HP</b>	Harmonised Pharmacopoeias (European, American and Japanese)
<b>APHA</b>	American Public Health Association	<b>E Nr.</b>	Number code for food additives	<b>HPLC</b>	High-Performance Liquid Chromatography
<b>API</b>	Active Pharmaceutical Ingredients	<b>EC</b>	Enzyme Commission	<b>HPTLC</b>	High-Performance Thin-Layer Chromatography
<b>AR</b>	Analytical Reagent	<b>ECD</b>	Electron Capture Detector	<b>HS</b>	Harmonized System
<b>ASTM</b>	American Society for Testing and Material	<b>EDI</b>	Electrodeionization	<b>IATA</b>	International Air Transport Association
<b>ATP</b>	Adenosinetriphosphate	<b>EDQM</b>	European Directorate for the Quality of Medicines	<b>IC</b>	Ion Chromatography
<b>AWWA</b>	American Water Works Association	<b>EINECS</b>	European Inventory of Existing Chemical Substances	<b>ICP</b>	Induction-Coupled Plasma
<b>BAT</b>	Biological Substance Tolerance Value	<b>EN</b>	European Norm	<b>ICR</b>	Industrial Clean Room
<b>BET</b>	Surface determination according to Brunauer, Emmet and Teller	<b>EOCI</b>	Extractable Organic Chlorine	<b>IDF</b>	International Dairy Federation
<b>BOD</b>	Biological Oxygen Demand	<b>EP</b>	European Pharmacopoeia	<b>IFU</b>	International Federation of Fruit Juice Producers
<b>BP</b>	British Pharmacopoeia	<b>EPA</b>	Environmental Protection Agency (USA)	<b>IMDG</b>	International Maritime Goods
<b>BPC</b>	British Pharmaceutical Codex	<b>Erg B</b>	Ergänzung zum deutschen Arzneibuch (German Pharmacopoeia supplement)	<b>IP</b>	Indian Pharmacopoeia
<b>BRN</b>	Beilstein Registration Number	<b>F Bras</b>	Farmacopoeia Brasileira	<b>IR</b>	Infrared Spectroscopy
<b>BS</b>	British Standards	<b>FAM</b>	German mineral oil and fuel standards commission (Fachausschuss für Mineralöl- und Brennstoffnormung)	<b>ISO</b>	International Organization for Standardization
<b>BSA</b>	Bovine Serum Albumin	<b>FCC</b>	Food Chemicals Codex / USA	<b>IUPAC</b>	International Union of Pure and Applied Chemistry
<b>CAO</b>	Freight aircraft	<b>FDA</b>	Food and Drug Administration (USA)	<b>IVD</b>	Certification: In Vitro Diagnostics
<b>CAP</b>	College of American Pathologists	<b>FD &amp; C</b>	Food, Drug and Cosmetic (USA)	<b>JP</b>	Japanese Pharmacopoeia
<b>CAS</b>	Chemical Abstracts Service	<b>FIA</b>	Fluorescence Indicator Analysis	<b>JPE</b>	Japanese Pharmaceutical Excipients
<b>CE</b>	Conformité Européenne	<b>FID</b>	Flame Ionization Detector	<b>KF</b>	Karl Fischer
<b>CEN</b>	Centre Européen pour la Normalisation	<b>FIL</b>	Federation Internationale Laitière	<b>LC</b>	Liquid Chromatography
<b>CGS</b>	Centimeter-gram-second (system of units)	<b>FIP</b>	Federation Internationale Pharmaceutique	<b>LCD</b>	Liquid-Crystal Display
<b>C.I. No.</b>	Colour Index Number	<b>FO</b>	Fibre Optics	<b>LC-MS</b>	Liquid Chromatography Mass Spectrometry
<b>CLP</b>	Classification, Labelling and Packaging	<b>FU</b>	Farmacopoea Ufficiale della Repubblica Italiana	<b>LDPE</b>	Low-Density Polyethylene
<b>CLSI</b>	Clinical and Laboratory Standards Institute Inc.	<b>GC</b>	Gas Chromatography	<b>LLC</b>	Liquid-Liquid Chromatography
<b>CLRW</b>	Clinical Laboratory Reagent Water	<b>GHS</b>	Globally Harmonized System	<b>LLPC</b>	Liquid-Liquid Partition Chromatography
<b>COA</b>	Certificate of Analysis	<b>GLP</b>	Good Laboratory Practice	<b>LSC</b>	Liquid-Solid Chromatography
<b>COD</b>	Chemical Oxygen Demand	<b>GMP</b>	Good Manufacturing Practice	<b>MAC</b>	Maximum Allowed Concentration
<b>CRM</b>	Certified Reference Material			<b>MAK</b>	Maximale Arbeitsplatzkonzentration (Maximum Workplace Concentration)
<b>C. France</b>	Codex Français			<b>MOS</b>	Metal-Oxide Semiconductor
<b>DAB</b>	Deutsches Arzneibuch (German Pharmacopoeia)			<b>MS</b>	Mass Spectrometry
<b>DAC</b>	Deutscher Arzneimittel-Codex (German Pharmaceutical Codex)				

<b>MSDS</b>	Material Safety Data Sheet	<b>REACH</b>	Register, Evaluation, Authorisation and Restriction of Chemicals	<b>VHP</b>	Very High Pressure
<b>NBS</b>	National Bureau of Standards	<b>RFA</b>	Röntgen-Fluoreszenz-Analyse (X-Ray Fluorescence Analysis)	<b>VLSI</b>	Very Large-Scale Integrated Circuits
<b>NCLSS</b>	National Commitee for Clinical Laboratory Standards	<b>R</b>	Risk phrases	<b>VOC</b>	Volatile Organic Compound
<b>NF</b>	The National Formulary (USA)	<b>RFID</b>	Radio-Frequency Identification	<b>WEF</b>	Water Environment Federation
<b>NIST</b>	National Institute of Standards and Tecnology	<b>RI</b>	Refractive Index	<b>WGK</b>	German Water Hazard
<b>NIOSH</b>	National Institute for Occupational Safety and Health	<b>RNA</b>	Ribonucleic Acid	<b>WHO</b>	World Health Organization
<b>NMR</b>	Nuclear Magnetic Resonance spectrometry	<b>RO</b>	Reverse Osmosis	<b>XRF</b>	X-Ray Fluorescence
<b>NNR</b>	New and Nonoficial Remedies	<b>RP</b>	Reversed-Phase Chromatography		
<b>NPD</b>	Nitrogen Phosphorus Detector	<b>RTECS</b>	Registry of Toxic Effects of Chemical Substances		
<b>NT</b>	New Technology	<b>SDS</b>	Safety Data Sheet		
<b>NTA</b>	Nitriooacetic Acid	<b>SDS-PAGE</b>	Sodium Dodecylsulfate - Polyacrylamide Gel Electrophoresis		
<b>NTU</b>	Nephelometric Turbidity Unit	<b>S</b>	Safety phrases		
<b>ÖAB</b>	Österreichisches Arzneibuch (Austrian Pharmacopoeia)	<b>SI</b>	International System of Units		
<b>OES</b>	Optical Emission Spectrometry	<b>SL</b>	Schweizerisches Lebensmittlebuch (Swiss Food Manual)		
<b>OQ</b>	Operational Qualification	<b>SMD</b>	Standards Methods for the Examination of Dairy Products		
<b>P</b>	Precautionary Statement	<b>SMWW</b>	Standards Methods for the Examination of Water and Wastewater		
<b>PA</b>	Polyamide	<b>SRM</b>	Standards Reference Material		
<b>PAH</b>	Polycyclic Aromatic Hydrocarbons	<b>SVHC</b>	Substances of Very High Concern		
<b>PAX</b>	Passenger Aircraft	<b>TCD</b>	Thermal Conductivity Detector		
<b>PCB</b>	Polychlorinated Biphenyls	<b>TDS</b>	Technical Data Sheet		
<b>PCR</b>	Polymerase Chain Reaction	<b>THF</b>	Tetrahydrofuran		
<b>Ph Belg</b>	Belgian Pharmacopoeia	<b>TIC</b>	Total Inorganic Carbon		
<b>Ph Dan</b>	Danish Pharmacopoeia	<b>TISAB</b>	Total Ionic Strength Adjustment Buffer		
<b>Ph Eur</b>	European Pharmacopoeia	<b>TLC</b>	Thin-Layer Chromatography		
<b>Ph F</b>	Finnish Pharmacopoeia	<b>TOC</b>	Total Organic Carbon		
<b>Ph Franc</b>	French Pharmacopoeia	<b>UHPLC</b>	Ultra-High Performance Liquid Chromatography		
<b>Ph Helv</b>	Swiss Pharmacopoeia	<b>ULSI</b>	Ultra Large-Scale Integrated Circuits		
<b>Ph Ned</b>	Dutch Pharmacopoeia	<b>UN</b>	United Nations		
<b>Ph Nord</b>	Nordic Pharmacopoeia	<b>USP</b>	The United States Pharmacopoeia		
<b>Ph Norv</b>	Norwegian Pharmacopoeia	<b>ÜS-EPA</b>	US Environmental Protection Agency		
<b>Ph Svec</b>	Swedish Pharmacopoeia	<b>UV</b>	Ultraviolet Spectroscopy		
<b>PLC</b>	Preparative-Layer Chromatography	<b>UV/VIS</b>	Ultraviolet-Visible Spectroscopy		
<b>PND</b>	Phosphorus Nitrogen Detector	<b>VbF</b>	Verordnung über brennbare Flüssigkeiten (Regulation of flammable liquids)		
<b>PP</b>	Polypropylene				
<b>ppb</b>	Parts per billion				
<b>ppm</b>	Parts per million				
<b>ppt</b>	Parts per trillion				
<b>PTFE</b>	Polytetrafluoroethylene				
<b>PVDF</b>	Polyvinylidenfluoride				

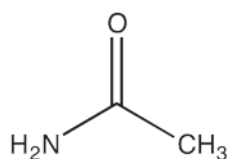
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## Acetamide

## AC0050 Acetamide, extra pure



- Synonyms: Acetic acid amide
- $C_2H_5NO$
- $M = 59,07$  g/mol
- CAS [60-35-5]
- EINECS-No.: 200-473-5
- Solub. in water: (20 °C): soluble
- Melting point: 78 - 81 °C
- Boiling point: (13 hPa) 105 °C
- Vapour pressure: (65 °C) 1,33 hPa
- LD 50 (oral, rat): 7000 mg/kg
- EC-Index-No.: 616-022-00-4
- GHS-signal word: Warning
- GHS-H sentences: H351
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2924 19 00 90
- Applications: solvents, plasticizer, synthesis of organic products.

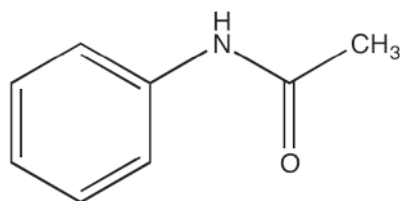
## Specifications:

assay (G.C.)	min. 99 %
identity (IR-spectrum)	passes test
insoluble in water	max. 0,005 %
free acid (as $CH_3COOH$ )	max. 0,1 %
chlorides (Cl)	max. 0,005 %
sulfates ( $SO_4$ )	max. 0,01 %
copper (Cu)	max. 0,002 %
iron (Fe)	max. 0,002 %
lead (Pb)	max. 0,002 %
nickel (Ni)	max. 0,002 %
residue on ignition (as $SO_2$ )	max. 0,01 %
water (K.F.)	max. 0,3 %

Art. No.	Volume	Container
AC00500500	500 g	P
AC00501000	1 kg	P
AC0050005P	5 kg	P

## Acetanilide

## AC0065 Acetanilide, extra pure



- Synonyms: N-Phenylacetamide
- $C_9H_9NO$
- $M = 135,17$  g/mol
- CAS [103-84-4]
- EINECS-No.: 203-150-7
- Solub. in water: (20 °C): 5 g/l
- Melting point: 115 °C
- Boiling point: 304 °C
- Flash pt. 173 °C
- Ignition temp.: 540 °C
- LD 50 (oral, rat): 800 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2924 29 98 99

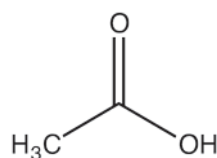
- Applications: for pharmaceuticals synthesizing, manufacture of dyes.

## Specifications:

assay (bromometric)	98,5 - 101 %
identity (IR-spectrum)	passes test
insoluble in $C_2H_5OH$	passes test
pH (1 %, $H_2O$ )	5 - 7
heavy metals (as Pb)	max. 0,001 %
aniline	max. 0,06 %
phenol	max. 0,002 %
residue on ignition	max. 0,1 %
loss on drying	max. 0,2 %

Art. No.	Volume	Container
AC00651000	1 kg	P

## Acetic acid glacial



- Synonyms: Methane carboxylic acid, Methylformic acid
- $CH_3COOH$
- $M = 60,05$  g/mol
- CAS [64-19-7]
- EINECS-No.: 200-580-7
- Density: 1,05 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 17 °C
- Boiling point: 117 °C
- Flash pt. 39 °C
- Ignition temp.: 485 °C
- Vapour pressure: (20 °C) 15,4 hPa

- Refraction index: (20 °C) 1,37
- LD 50 (oral, rat): 3310 mg/kg
- EC-Index-No.: 607-002-00-6
- ADR: 8 CF1 II UN 2789
- IMDG: 8 II UN 2789
- IATA/ICAO: 8 II UN 2789
- GHS-signal word: Danger
- GHS-H sentences: H314 - H226
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 21 00 10
- Applications: laboratory reagent, synthesis of organic products, in the rubber industry, in food industry.

## AC0343 Acetic acid glacial, synthesis grade



assay (acidimetric)	min. 99,5 %
identity (IR-spectrum)	passes test
density (20°/4°)	1,048 - 1,050
residue on evaporation	max. 0,002 %
water (K.F.)	max. 0,3 %

Art. No.	Volume	Container
AC03431000	1 l	O
AC03432500	2,5 l	O
AC0343005P	5 l	P
AC0343025P	25 l	P

## AC0342 Acetic acid glacial, extra pure, Pharmpur®, Ph Eur, BP, USP



assay (acidimetric)	99,0 - 100,5 %
identification	passes test
identity acidity	passes test
identity acetate	passes test
appearance	clear and colourless
freezing point	min. 14,8 °C
chlorides (Cl)	max. 0,0025 %

sulfates ( $SO_4$ )	max. 0,005 %
heavy metals (as Pb)	max. 0,0005 %
iron (Fe)	max. 0,0005 %
reducing substances	passes test
residue on evaporation	max. 0,001 %
Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
AC03421000	1 l	P
AC03422500	2,5 l	P
AC0342005P	5 l	P
AC0342025P	25 l	P

# Acetic

## AC0344 Acetic acid glacial, reagent grade, ACS, ISO, Reag. Ph Eur



assay (acidimetric) . . . . . min. 99,8 %	gallium (Ga) . . . . . max. 0,000005 %	vanadium (V) . . . . . max. 0,000001 %
identity (IR-spectrum) . . . . . passes test	germanium (Ge) . . . . . max. 0,000002 %	zinc (Zn) . . . . . max. 0,000003 %
density (20°/4°) . . . . . 1,048 - 1,050	gold (Au) . . . . . max. 0,000001 %	zirconium (Zr) . . . . . max. 0,000005 %
boiling point . . . . . 117 - 119 °C	heavy metals (as Pb) . . . . . max. 0,00005 %	acetaldehyde (CH <sub>3</sub> CHO) . . . . . max. 0,0002 %
freezing point . . . . . min. 15,8 °C	indium (In) . . . . . max. 0,000005 %	acetic anhydride (CH <sub>3</sub> CO) <sub>2</sub> O . . . . . max. 0,01 %
colour (Hazen) . . . . . max. 10	iron (Fe) . . . . . max. 0,000005 %	substances reducing KMnO <sub>4</sub> . . . . . passes test
titrable base . . . . . max. 0,0004 meq/g	lead (Pb) . . . . . max. 0,000001 %	substances reducing K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> . . . . . passes test
chlorides (Cl) . . . . . max. 0,00004 %	lithium (Li) . . . . . max. 0,000001 %	miscibility with water . . . . . total dilution test . . . . . passes test
phosphates (as PO <sub>4</sub> ) . . . . . max. 0,00004 %	magnesium (Mg) . . . . . max. 0,000005 %	substances reducing iodine . . . . . negative reaction
sulfates (SO <sub>4</sub> ) . . . . . max. 0,00004 %	manganese (Mn) . . . . . max. 0,000001 %	residue on evaporation . . . . . max. 0,0005 %
aluminium (Al) . . . . . max. 0,000002 %	mercury (Hg) . . . . . max. 0,000005 %	water (K.F.) . . . . . max. 0,2 %
arsenic (As) . . . . . max. 0,000001 %	molybdenum (Mo) . . . . . max. 0,000001 %	
barium (Ba) . . . . . max. 0,000001 %	nickel (Ni) . . . . . max. 0,000002 %	
beryllium (Be) . . . . . max. 0,000005 %	platinum (Pt) . . . . . max. 0,00001 %	
bismuth (Bi) . . . . . max. 0,000005 %	potassium (K) . . . . . max. 0,00001 %	
boron (B) . . . . . max. 0,00001 %	silver (Ag) . . . . . max. 0,000005 %	
cadmium (Cd) . . . . . max. 0,000002 %	sodium (Na) . . . . . max. 0,00002 %	
calcium (Ca) . . . . . max. 0,00001 %	strontium (Sr) . . . . . max. 0,00001 %	
chromium (Cr) . . . . . max. 0,00002 %	thallium (Tl) . . . . . max. 0,00002 %	
cobalt (Co) . . . . . max. 0,000001 %	tin (Sn) . . . . . max. 0,000005 %	
copper (Cu) . . . . . max. 0,000001 %	titanium (Ti) . . . . . max. 0,000005 %	

Art. No.	Volume	Container
AC03441000	1 l	Ø
AC03442500	2,5 l	Ø
AC0344005P	5 l	Ⓟ
AC0344025P	25 l	Ⓟ

## AC0345 Acetic acid glacial, min. 99,8%, reagent grade, according to Wijs



assay (acidimetric) . . . . . min. 99,8 %	germanium (Ge) . . . . . max. 0,000002 %	tin (Sn) . . . . . max. 0,000005 %
identity (IR-spectrum) . . . . . passes test	gold (Au) . . . . . max. 0,000001 %	titanium (Ti) . . . . . max. 0,000005 %
density (20°/4°) . . . . . 1,048 - 1,050	heavy metals (as Pb) . . . . . max. 0,00005 %	vanadium (V) . . . . . max. 0,000001 %
colour (Hazen) . . . . . max. 10	indium (In) . . . . . max. 0,000005 %	zinc (Zn) . . . . . max. 0,000003 %
chlorides (Cl) . . . . . max. 0,00004 %	iron (Fe) . . . . . max. 0,000005 %	zirconium (Zr) . . . . . max. 0,000005 %
phosphates (as PO <sub>4</sub> ) . . . . . max. 0,00004 %	lead (Pb) . . . . . max. 0,000001 %	acetaldehyde (CH <sub>3</sub> CHO) . . . . . max. 0,0002 %
sulfates (SO <sub>4</sub> ) . . . . . max. 0,00004 %	lithium (Li) . . . . . max. 0,000001 %	acetic anhydride (CH <sub>3</sub> CO) <sub>2</sub> O . . . . . max. 0,01 %
aluminium (Al) . . . . . max. 0,000005 %	magnesium (Mg) . . . . . max. 0,000005 %	substances reducing KMnO <sub>4</sub> . . . . . passes test
arsenic (As) . . . . . max. 0,000001 %	manganese (Mn) . . . . . max. 0,000001 %	substances reducing K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> . . . . . passes test
barium (Ba) . . . . . max. 0,000001 %	mercury (Hg) . . . . . max. 0,000005 %	indifference to chromic acid . . . . . passes test
beryllium (Be) . . . . . max. 0,000005 %	molybdenum (Mo) . . . . . max. 0,000001 %	residue on evaporation . . . . . max. 0,0005 %
bismuth (Bi) . . . . . max. 0,000005 %	nickel (Ni) . . . . . max. 0,000002 %	water (K.F.) . . . . . max. 0,2 %
cadmium (Cd) . . . . . max. 0,000002 %	platinum (Pt) . . . . . max. 0,00001 %	
calcium (Ca) . . . . . max. 0,00001 %	potassium (K) . . . . . max. 0,00001 %	
chromium (Cr) . . . . . max. 0,00002 %	silver (Ag) . . . . . max. 0,000005 %	
cobalt (Co) . . . . . max. 0,000001 %	sodium (Na) . . . . . max. 0,00002 %	
copper (Cu) . . . . . max. 0,000001 %	strontium (Sr) . . . . . max. 0,00001 %	
gallium (Ga) . . . . . max. 0,000005 %	thallium (Tl) . . . . . max. 0,00002 %	

Art. No.	Volume	Container
AC03451000	1 l	Ø
AC03452500	2,5 l	Ø

## AC0353 Acetic acid glacial, reagent grade, ACS, ISO, packed in HDPE bottles



assay (acidimetric) . . . . . min. 99,8 %	copper (Cu) . . . . . max. 0,000001 %	tin (Sn) . . . . . max. 0,000005 %
identity (IR-spectrum) . . . . . passes test	gallium (Ga) . . . . . max. 0,000005 %	titanium (Ti) . . . . . max. 0,000005 %
density (20°/4°) . . . . . 1,048 - 1,050	germanium (Ge) . . . . . max. 0,000002 %	vanadium (V) . . . . . max. 0,000001 %
colour (Hazen) . . . . . max. 10	gold (Au) . . . . . max. 0,000001 %	zinc (Zn) . . . . . max. 0,000003 %
titrable base . . . . . max. 0,0004 meq/g	heavy metals (as Pb) . . . . . max. 0,00005 %	zirconium (Zr) . . . . . max. 0,000005 %
miscibility with water . . . . . passes test	indium (In) . . . . . max. 0,000005 %	acetaldehyde (CH <sub>3</sub> CHO) . . . . . max. 0,0002 %
total dilution test . . . . . passes test	iron (Fe) . . . . . max. 0,000005 %	acetic anhydride (CH <sub>3</sub> CO) <sub>2</sub> O . . . . . max. 0,01 %
chlorides (Cl) . . . . . max. 0,00004 %	lead (Pb) . . . . . max. 0,000001 %	substances reducing KMnO <sub>4</sub> . . . . . passes test
phosphates (as PO <sub>4</sub> ) . . . . . max. 0,00004 %	lithium (Li) . . . . . max. 0,000001 %	substances reducing K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> . . . . . passes test
sulfates (SO <sub>4</sub> ) . . . . . max. 0,00004 %	magnesium (Mg) . . . . . max. 0,000005 %	substances reducing iodine . . . . . negative reaction
aluminium (Al) . . . . . max. 0,000002 %	manganese (Mn) . . . . . max. 0,000001 %	residue on evaporation . . . . . max. 0,001 %
arsenic (As) . . . . . max. 0,000001 %	mercury (Hg) . . . . . max. 0,000005 %	water (K.F.) . . . . . max. 0,2 %
barium (Ba) . . . . . max. 0,000001 %	molybdenum (Mo) . . . . . max. 0,000001 %	
beryllium (Be) . . . . . max. 0,000005 %	nickel (Ni) . . . . . max. 0,000002 %	
bismuth (Bi) . . . . . max. 0,000005 %	platinum (Pt) . . . . . max. 0,00001 %	
boron (B) . . . . . max. 0,00001 %	potassium (K) . . . . . max. 0,00001 %	
cadmium (Cd) . . . . . max. 0,000002 %	silver (Ag) . . . . . max. 0,000005 %	
calcium (Ca) . . . . . max. 0,00001 %	sodium (Na) . . . . . max. 0,00002 %	
chromium (Cr) . . . . . max. 0,00002 %	strontium (Sr) . . . . . max. 0,00001 %	
cobalt (Co) . . . . . max. 0,000001 %	thallium (Tl) . . . . . max. 0,00002 %	

Art. No.	Volume	Container
AC03531000	1 l	Ⓟ
AC03532500	2,5 l	Ⓟ
AC0353005P	5 l	Ⓟ
AC0353025P	25 l	Ⓟ

## AC0346 Acetic acid glacial, HPLC grade



assay (acidimetric) . . . . . min. 99,8 %	Microfiltered through membranes of pore diameter 0,22 µm min. transmission/max. absorbance in a 1,0 cm cell at wavelength: . . . . . T(%) A (AU)	Art. No.	Volume	Container
identity (IR-spectrum) . . . . . passes test	260 nm . . . . . 80 % 0,097 AU	AC03461000	1 l	Ø
density (20°/4°) . . . . . 1,048 - 1,050	270 nm . . . . . 95 % 0,022 AU	AC03462500	2,5 l	Ø
residue on evaporation . . . . . max. 0,0002 %	280 nm . . . . . 98 % 0,009 AU			
water (K.F.) . . . . . max. 0,2 %				

## AC0347 Acetic acid glacial, eluent additive for LC-MS



assay (acidimetric) . . . . . min. 99,9 %	lead (Pb) . . . . . max. 0,000005 %	strontium (Sr) . . . . . max. 0,000005 %
aluminium (Al) . . . . . max. 0,000005 %	lithium (Li) . . . . . max. 0,000005 %	thallium (Tl) . . . . . max. 0,000005 %
barium (Ba) . . . . . max. 0,000005 %	magnesium (Mg) . . . . . max. 0,00001 %	zinc (Zn) . . . . . max. 0,000005 %
cadmium (Cd) . . . . . max. 0,000005 %	manganese (Mn) . . . . . max. 0,000005 %	suitability for use in LC-MS . . . . . passes test
calcium (Ca) . . . . . max. 0,00005 %	molybdenum (Mo) . . . . . max. 0,000005 %	
chromium (Cr) . . . . . max. 0,000005 %	nickel (Ni) . . . . . max. 0,000005 %	
cobalt (Co) . . . . . max. 0,000005 %	potassium (K) . . . . . max. 0,00001 %	
copper (Cu) . . . . . max. 0,000005 %	silver (Ag) . . . . . max. 0,000005 %	
iron (Fe) . . . . . max. 0,00002 %	sodium (Na) . . . . . max. 0,00005 %	

Art. No.	Volume	Container
AC03470050	50 ml	Ⓟ



## AC0358 Acetic acid glacial, ppb-trace analysis grade, Ultratrace®



assay (acidimetric) . . . . .	.min. 99 %	gallium (Ga) . . . . .	max. 0,1 ppb	scandium (Sc) . . . . .	max. 0,1 ppb
colour (Hazen) . . . . .	max. 10	germanium (Ge) . . . . .	max. 0,5 ppb	selenium (Se) . . . . .	max. 1 ppb
chlorides (Cl) . . . . .	max. 0,0001 %	hafnium (Hf) . . . . .	max. 0,1 ppb	silver (Ag) . . . . .	max. 1 ppb
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,0001 %	holmium (Ho) . . . . .	max. 0,1 ppb	sodium (Na) . . . . .	max. 1 ppb
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,00005 %	indium (In) . . . . .	max. 0,1 ppb	strontium (Sr) . . . . .	max. 0,5 ppb
substances reducing K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> . . . . .	passes test	iron (Fe) . . . . .	max. 1 ppb	tellurium (Te) . . . . .	max. 0,5 ppb
substances reducing KMnO <sub>4</sub> . . . . .	passes test	lanthanum (La) . . . . .	max. 0,1 ppb	terbium (Tb) . . . . .	max. 0,1 ppb
aluminium (Al) . . . . .	max. 1 ppb	lead (Pb) . . . . .	max. 0,1 ppb	thallium (Tl) . . . . .	max. 0,1 ppb
antimony (Sb) . . . . .	max. 0,5 ppb	lithium (Li) . . . . .	max. 0,1 ppb	thorium (Th) . . . . .	max. 0,1 ppb
arsenic (As) . . . . .	max. 0,5 ppb	lutetium (Lu) . . . . .	max. 0,1 ppb	thulium (Tm) . . . . .	max. 0,1 ppb
barium (Ba) . . . . .	max. 0,5 ppb	magnesium (Mg) . . . . .	max. 0,5 ppb	tin (Sn) . . . . .	max. 0,5 ppb
beryllium (Be) . . . . .	max. 0,1 ppb	manganese (Mn) . . . . .	max. 0,5 ppb	titanium (Ti) . . . . .	max. 0,5 ppb
bismuth (Bi) . . . . .	max. 0,1 ppb	mercury (Hg) . . . . .	max. 1 ppb	tungsten (W) . . . . .	max. 0,5 ppb
cadmium (Cd) . . . . .	max. 0,5 ppb	molybdenum (Mo) . . . . .	max. 0,5 ppb	uranium (U) . . . . .	max. 0,1 ppb
calcium (Ca) . . . . .	max. 1 ppb	neodymium (Nd) . . . . .	max. 0,1 ppb	vanadium (V) . . . . .	max. 0,5 ppb
cerium (Ce) . . . . .	max. 0,1 ppb	nickel (Ni) . . . . .	max. 0,5 ppb	ytterbium (Yb) . . . . .	max. 0,1 ppb
cesium (Cs) . . . . .	max. 0,1 ppb	platinum (Pt) . . . . .	max. 0,5 ppb	yttrium (Y) . . . . .	max. 0,1 ppb
chromium (Cr) . . . . .	max. 1 ppb	potassium (K) . . . . .	max. 1 ppb	zinc (Zn) . . . . .	max. 1 ppb
cobalt (Co) . . . . .	max. 0,1 ppb	praseodymium (Pr) . . . . .	max. 0,1 ppb	zirconium (Zr) . . . . .	max. 0,1 ppb
copper (Cu) . . . . .	max. 0,5 ppb	rhenium (Re) . . . . .	max. 0,1 ppb		
dysprosium (Dy) . . . . .	max. 0,1 ppb	rhodium (Rh) . . . . .	max. 0,5 ppb		
erbium (Er) . . . . .	max. 0,1 ppb	rubidium (Rb) . . . . .	max. 0,1 ppb		
europium (Eu) . . . . .	max. 0,1 ppb	ruthenium (Ru) . . . . .	max. 0,5 ppb		
gadolinium (Gd) . . . . .	max. 0,1 ppb	samarium (Sm) . . . . .	max. 0,1 ppb		

Art. No.	Volume	Container
AC03580500	500 ml	

## AC0359 Acetic acid glacial, ppt-trace analysis grade, Ultratrace®



assay (acidimetric) . . . . .	.min. 99 %	holmium (Ho) . . . . .	max. 1 ppt	silver (Ag) . . . . .	max. 50 ppt
aluminium (Al) . . . . .	max. 50 ppt	indium (In) . . . . .	max. 1 ppt	sodium (Na) . . . . .	max. 100 ppt
antimony (Sb) . . . . .	max. 50 ppt	iron (Fe) . . . . .	max. 50 ppt	strontium (Sr) . . . . .	max. 10 ppt
arsenic (As) . . . . .	max. 50 ppt	lanthanum (La) . . . . .	max. 1 ppt	tellurium (Te) . . . . .	max. 1 ppt
barium (Ba) . . . . .	max. 10 ppt	lead (Pb) . . . . .	max. 10 ppt	terbium (Tb) . . . . .	max. 1 ppt
beryllium (Be) . . . . .	max. 10 ppt	lithium (Li) . . . . .	max. 10 ppt	thallium (Tl) . . . . .	max. 10 ppt
bismuth (Bi) . . . . .	max. 10 ppt	lutetium (Lu) . . . . .	max. 10 ppt	thorium (Th) . . . . .	max. 1 ppt
cadmium (Cd) . . . . .	max. 10 ppt	magnesium (Mg) . . . . .	max. 50 ppt	thulium (Tm) . . . . .	max. 1 ppt
calcium (Ca) . . . . .	max. 50 ppt	manganese (Mn) . . . . .	max. 10 ppt	tin (Sn) . . . . .	max. 50 ppt
cerium (Ce) . . . . .	max. 10 ppt	molybdenum (Mo) . . . . .	max. 10 ppt	titanium (Ti) . . . . .	max. 10 ppt
cesium (Cs) . . . . .	max. 10 ppt	neodymium (Nd) . . . . .	max. 1 ppt	tungsten (W) . . . . .	max. 10 ppt
chromium (Cr) . . . . .	max. 10 ppt	nickel (Ni) . . . . .	max. 50 ppt	uranium (U) . . . . .	max. 1 ppt
cobalt (Co) . . . . .	max. 10 ppt	platinum (Pt) . . . . .	max. 50 ppt	vanadium (V) . . . . .	max. 10 ppt
copper (Cu) . . . . .	max. 10 ppt	potassium (K) . . . . .	max. 50 ppt	ytterbium (Yb) . . . . .	max. 1 ppt
dysprosium (Dy) . . . . .	max. 1 ppt	praseodymium (Pr) . . . . .	max. 1 ppt	yttrium (Y) . . . . .	max. 1 ppt
erbium (Er) . . . . .	max. 1 ppt	rhenium (Re) . . . . .	max. 10 ppt	zinc (Zn) . . . . .	max. 50 ppt
europium (Eu) . . . . .	max. 1 ppt	rhodium (Rh) . . . . .	max. 50 ppt	zirconium (Zr) . . . . .	max. 10 ppt
gadolinium (Gd) . . . . .	max. 1 ppt	rubidium (Rb) . . . . .	max. 10 ppt		
gallium (Ga) . . . . .	max. 10 ppt	ruthenium (Ru) . . . . .	max. 50 ppt		
germanium (Ge) . . . . .	max. 10 ppt	samarium (Sm) . . . . .	max. 1 ppt		
hafnium (Hf) . . . . .	max. 10 ppt	scandium (Sc) . . . . .	max. 10 ppt		

Art. No.	Volume	Container
AC03590250	250 ml	

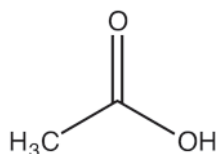
# Acetic

## Acetic acid, 96% v/v

### AC0354 Acetic acid, solution 96% v/v, reagent grade



- Synonyms: Methane carboxylic acid, Methylformic acid
- $\text{CH}_3\text{COOH}$
- $M = 60,05 \text{ g/mol}$
- CAS [64-19-7]
- EINECS-No.: 200-580-7
- Density:  $\sim 1,05 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point: 17 °C
- Boiling point: 117 °C
- Flash pt. 39 °C
- Ignition temp.: 485 °C
- Vapour pressure: (20 °C) 15,4 hPa
- Refraction index: (20 °C) 1,37
- LD 50 (oral, rat): 3310 mg/kg
- EC-Index-No.: 607-002-00-6
- ADR: 8 CF1 II UN 2789
- IMDG: 8 II UN 2789
- IATA/ICAO: 8 II UN 2789
- GHS-signal word: Danger
- GHS-H sentences: H314 - H226
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 21 00 00
- Applications: analytical chemistry, synthesis of organic products, acidifying agent, for pharmaceuticals synthesizing, in food industry.



#### Specifications:

assay (acidimetric) . . . . .	min. 96 %
insoluble in water . . . . .	passes test
colour (Hazen) . . . . .	max. 10
chlorides (Cl) . . . . .	max. 0,00005 %
phosphates (as $\text{PO}_4$ ) . . . . .	max. 0,00005 %
sulfates ( $\text{SO}_4$ ) . . . . .	max. 0,00005 %
aluminium (Al) . . . . .	max. 0,00005 %
arsenic (As) . . . . .	max. 0,00001 %
barium (Ba) . . . . .	max. 0,00001 %
beryllium (Be) . . . . .	max. 0,00002 %
bismuth (Bi) . . . . .	max. 0,00001 %

boron (B) . . . . .	max. 0,00001 %
cadmium (Cd) . . . . .	max. 0,000005 %
calcium (Ca) . . . . .	max. 0,00002 %
chromium (Cr) . . . . .	max. 0,000002 %
cobalt (Co) . . . . .	max. 0,000001 %
copper (Cu) . . . . .	max. 0,000002 %
gallium (Ga) . . . . .	max. 0,000005 %
germanium (Ge) . . . . .	max. 0,000005 %
gold (Au) . . . . .	max. 0,000001 %
indium (In) . . . . .	max. 0,000005 %
iron (Fe) . . . . .	max. 0,00001 %
lead (Pb) . . . . .	max. 0,000002 %
lithium (Li) . . . . .	max. 0,000001 %
magnesium (Mg) . . . . .	max. 0,000005 %
manganese (Mn) . . . . .	max. 0,000001 %
molybdenum (Mo) . . . . .	max. 0,000002 %
nickel (Ni) . . . . .	max. 0,000002 %
platinum (Pt) . . . . .	max. 0,00001 %
potassium (K) . . . . .	max. 0,00001 %
silver (Ag) . . . . .	max. 0,000001 %
sodium (Na) . . . . .	max. 0,00005 %
strontium (Sr) . . . . .	max. 0,000001 %
thallium (Tl) . . . . .	max. 0,000005 %
tin (Sn) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,00001 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000005 %
zirconium (Zr) . . . . .	max. 0,00001 %
acetaldehyde ( $\text{CH}_3\text{CHO}$ ) . . . . .	max. 0,0002 %
acetic anhydride ( $\text{CH}_3\text{CO}_2\text{O}$ ) . . . . .	max. 0,01 %
substances reducing $\text{KMnO}_4$ . . . . .	passes test
substances reducing $\text{K}_2\text{Cr}_2\text{O}_7$ . . . . .	passes test
substances reducing iodine . . . . .	negative reaction
residue on evaporation . . . . .	max. 0,0005 %

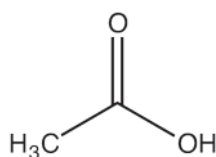
Art. No.	Volume	Container
AC03541000	1 l	
AC03542500	2,5 l	

## Acetic acid, solution 80%

### AC0351 Acetic acid, solution 80% v/v, extra pure



- Synonyms: Methane carboxylic acid solution, Methylformic acid solution
- $\text{CH}_3\text{COOH}$
- $M = 60,05 \text{ g/mol}$
- CAS [64-19-7]
- EINECS-No.: 200-580-7
- Density:  $1,07 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Flash pt. 40 °C
- LD 50 (oral, rat): 3310 mg/kg
- EC-Index-No.: 607-002-00-6
- ADR: 8 CF1 II UN 2789
- IMDG: 8 II UN 2789
- IATA/ICAO: 8 II UN 2789
- GHS-signal word: Danger
- GHS-H sentences: H314 - H226
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 21 00 00



- Applications: analytical chemistry, synthesis of organic products, acidifying agent, for pharmaceuticals synthesizing, in food industry.

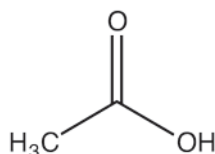
#### Specifications:

assay (acidimetric) . . . . .	min. 80 %
chlorides (Cl) . . . . .	max. 0,0002 %
sulfates ( $\text{SO}_4$ ) . . . . .	max. 0,0005 %
aluminium (Al) . . . . .	max. 0,00005 %
arsenic (As) . . . . .	max. 0,0002 %
iron (Fe) . . . . .	max. 0,0005 %
heavy metals (as Pb) . . . . .	max. 0,0005 %
zinc (Zn) . . . . .	max. 0,0005 %
substances reducing $\text{KMnO}_4$ . . . . .	passes test
residue on evaporation . . . . .	max. 0,003 %

Art. No.	Volume	Container
AC03511000	1 l	
AC03512500	2,5 l	
AC0351005P	5 l	

## Acetic acid, solution 60%

## AC0349 Acetic acid, solution 60% v/v, extra pure



- Synonyms: Methane carboxylic acid solution, Methylformic acid solution
- $\text{CH}_3\text{COOH}$
- $M = 60,05 \text{ g/mol}$
- CAS [64-19-7]
- EINECS-No.: 200-580-7
- LD 50 (oral, rat): 3310 mg/kg (pure substance)
- EC-Index-No.: 607-002-00-6
- ADR: 8 C3 II UN 2790
- IMDG: 8 II UN 2790
- IATA/ICAO: 8 II UN 2790
- GHS-signal word: Danger
- GHS-H sentences: H314 - H226
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 21 00 00
- Applications: analytical chemistry, synthesis of organic products, acidifying agent, for pharmaceuticals synthesizing, in food industry.

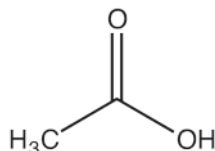
## Specifications:

assay (acidimetric) . . . . . min. 60 %  
 chlorides (Cl) . . . . . max. 0,0002 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,0005 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 arsenic (As) . . . . . max. 0,0002 %  
 copper (Cu) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0005 %  
 zinc (Zn) . . . . . max. 0,0005 %  
 substances reducing  $\text{KMnO}_4$  . . . . . max. 0,005 %  
 residue on evaporation . . . . . max. 0,003 %

Art. No.	Volume	Container
AC03491000	1 l	0
AC03492500	2,5 l	0

## Acetic acid, solution 50%

## AC0350 Acetic acid, solution 50% v/v, extra pure



- Synonyms: Methane carboxylic acid solution, Methylformic acid solution
- $\text{CH}_3\text{COOH}$
- $M = 60,05 \text{ g/mol}$
- CAS [64-19-7]
- EINECS-No.: 200-580-7
- Density: 1,052 g/cm<sup>3</sup>
- Flash pt. > 100 °C
- LD 50 (oral, rat): 3310 mg/kg (pure substance)
- EC-Index-No.: 607-002-00-6
- ADR: 8 C3 II UN 2790
- IMDG: 8 II UN 2790
- IATA/ICAO: 8 II UN 2790
- GHS-signal word: Danger
- GHS-H sentences: H314 - H226
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 21 00 00
- Applications: analytical chemistry, synthesis of organic products, acidifying agent, for pharmaceuticals synthesizing, in food industry.

- Appearance: Colourless clear liquid

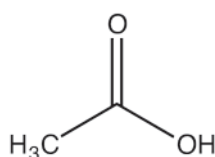
## Specifications:

assay (acidimetric) . . . . . min. 50 %  
 chlorides (Cl) . . . . . max. 0,0002 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,0005 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 arsenic (As) . . . . . max. 0,0002 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 zinc (Zn) . . . . . max. 0,0005 %  
 substances reducing  $\text{KMnO}_4$  . . . . . passes test  
 residue on evaporation . . . . . max. 0,003 %

Art. No.	Volume	Container
AC03501000	1 l	0

## Acetic acid, volumetric solutions

## AC0365 Acetic acid, solution 1 mol/l (1 N)



- $\text{CH}_3\text{COOH}$
- $M = 60,05 \text{ g/mol}$
- CAS [64-19-7]
- EINECS-No.: 200-580-7
- Density: 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 607-002-00-6
- GHS-H sentences: EUH210
- Tariff number: 2915 21 00 00
- Applications: analytical chemistry, acidifying agent, titrant in volumetric analysis.
- Appearance: Colourless clear liquid

uncertainty  $\pm 0,001$

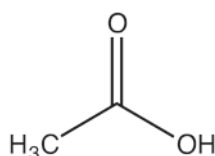
1 ml = 0,060 g  $\text{CH}_3\text{COOH}$  This volumetric solution was checked by means of potentiometric methods using a sodium hydroxide standard solution, that was also checked against Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

## Specifications:

factor . . . . . 0,999 - 1,001

Art. No.	Volume	Container
AC03651000	1 l	0

## AC0364 Acetic acid, solution 0,1 mol/l (0,1 N)



- $\text{CH}_3\text{COOH}$
- $M = 60,05 \text{ g/mol}$
- CAS [64-19-7]
- EINECS-No.: 200-580-7
- Density:  $\sim 1,002 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 607-002-00-6
- Tariff number: 2915 21 00 00
- Applications: analytical chemistry, acidifying agent, titrant in volumetric analysis.

uncertainty  $\pm 0,001$

1 ml = 0,006 g  $\text{CH}_3\text{COOH}$  This volumetric solution was checked using a sodium hydroxide standard by means of potentiometric methods solution, that was also checked against Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

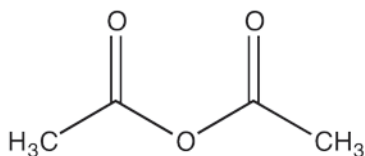
## Specifications:

factor . . . . . 0,999 - 1,001

Art. No.	Volume	Container
AC03641000	1 l	0

# Acetic

## Acetic anhydride



- Synonyms: Acetyl oxide
- $(\text{CH}_3\text{CO})_2\text{O}$
- M = 102,09 g/mol
- CAS [108-24-7]
- EINECS-No.: 203-564-8
- Density: 1,08 g/cm<sup>3</sup>
- Solub. in water: (20 °C): hydrolysis reaction
- Melting point: -73 °C
- Boiling point: 138 - 140,5 °C
- Flash pt. 49 °C
- Ignition temp.: 330 °C
- Vapour pressure: (20 °C) 4hPa
- Refraction index: (n 20 °C/D) 1,3903

- LD 50 (oral, rat): 1780 mg/kg
- EC-Index-No.: 607-008-00-9
- ADR: 8 CF1 II UN 1715
- IMDG: 8 II UN 1715
- IATA/ICAO: 8 II UN 1715
- GHS-signal word: Danger
- GHS-H sentences: H314 - H226 - H302 - H332
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 24 00 00
- Applications: analytical chemistry, synthesis of organic products, acetylating agent.

### AN0154 Acetic anhydride, extra pure



assay (G.C.) . . . . .min. 98 %	copper (Cu) . . . . .max. 0,001 %
identity (IR-spectrum) . . . . .passes test	heavy metals (as Pb). . . . .max. 0,001 %
density (20°/4°) . . . . .1,079 - 1,082	iron (Fe) . . . . .max. 0,001 %
chlorides (Cl) . . . . .max. 0,001 %	lead (Pb) . . . . .max. 0,001 %
phosphates (as PO <sub>4</sub> ) . . . . .max. 0,001 %	nickel (Ni) . . . . .max. 0,001 %
sulfates (SO <sub>4</sub> ) . . . . .max. 0,001 %	residue on evaporation . . . . .max. 0,005 %

Art. No.	Volume	Container
AN01541000	1 l	
AN01542500	2,5 l	
AN0154005P	5 l	
AN0154025A	25 l	

### AN0155 Acetic anhydride, reagent grade, ACS, ISO, Reag. Ph Eur



assay (G.C.) . . . . .min. 99 %	cadmium (Cd) . . . . .max. 0,000005 %
identity (IR-spectrum) . . . . .passes test	calcium (Ca) . . . . .max. 0,00005 %
density (20°/4°) . . . . .1,079 - 1,082	chromium (Cr) . . . . .max. 0,00005 %
boiling point . . . . .136 - 142 °C	cobalt (Co) . . . . .max. 0,000002 %
colour (Hazen) . . . . .max. 10	copper (Cu) . . . . .max. 0,000002 %
appearance . . . . .clear	heavy metals (as Pb) . . . . .max. 0,0002 %
chlorides (Cl) . . . . .max. 0,0002 %	iron (Fe) . . . . .max. 0,00001 %
phosphates (as PO <sub>4</sub> ) . . . . .max. 0,0005 %	lead (Pb) . . . . .max. 0,00001 %
sulfates (SO <sub>4</sub> ) . . . . .max. 0,0005 %	magnesium (Mg) . . . . .max. 0,00001 %
aluminium (Al) . . . . .max. 0,00005 %	manganese (Mn) . . . . .max. 0,000002 %
barium (Ba) . . . . .max. 0,00001 %	nickel (Ni) . . . . .max. 0,000002 %
boron (B) . . . . .max. 0,000002 %	tin (Sn) . . . . .max. 0,00001 %

zinc (Zn) . . . . .max. 0,00001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test  
 substances reducing KMnO<sub>4</sub> . . . . .passes test  
 residue on evaporation . . . . .max. 0,002 %

Art. No.	Volume	Container
AN01551000	1 l	
AN01552500	2,5 l	
AN0155005P	5 l	

## Acetone

- Synonyms: Dimethyl ketone, 2-Propanone
- C<sub>3</sub>H<sub>6</sub>O
- M = 58,08 g/mol
- CAS [67-64-1]
- EINECS-No.: 200-662-2
- Density: 0,79 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -95 °C
- Boiling point: 56 °C

- Flash pt. < -20 °C
- Ignition temp.: 540 °C
- Vapour pressure: (20 °C) 233 hPa
- Refraction index: (n 20 °C/D) 1,3588
- Dielectric const.: (25 °C) 20,7
- LD 50 (oral, rat): 5800 mg/kg
- EC-Index-No.: 606-001-00-8
- ADR: 3 F1 II UN 1090
- IMDG: 3 II UN 1090

- IATA/ICAO: 3 II UN 1090
- GHS-signal word: Danger
- GHS-H sentences: H225 - H319 - EUH066 - H336
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2914 11 00 00
- Applications: solvents, analytical chemistry, synthesis of organic products, photography.

### AC0306 Acetone, synthesis grade



assay (G.C.) . . . . .min. 99,5 %
identity (IR-spectrum) . . . . .passes test
density (20°/4°) . . . . .0,787 - 0,791
residue on evaporation . . . . .max. 0,002 %
water (K.F.) . . . . .max. 0,3 %

Art. No.	Volume	Container
AC03061000	1 l	
AC03062500	2,5 l	
AC0306005P	5 l	
AC0306007E	7 l	
AC0306025L	25 l	
AC0306025P	25 l	
AC0306025S	25 l	
AC0306030S	30 l	

### AC0312 Acetone, extra pure, Pharmapur®, Ph Eur, BP, NF



assay (G.C.) . . . . .min. 99,5 %	ethanol (G.C.) . . . . .max. 0,01 %
identification . . . . .passes test	methanol (G.C.) . . . . .max. 0,05 %
density (20°/20°) . . . . .0,790 - 0,793	2-propanol (G.C.) . . . . .max. 0,05 %
density (25°/25°) . . . . .max. 0,789	reducing substances . . . . .passes test
appearance of solution . . . . .passes test	residue on evaporation . . . . .max. 0,002 %
acidity or alkalinity . . . . .passes test	water (K.F.) . . . . .max. 0,3 %
insoluble in water . . . . .passes test	Residual solvents are analysed according to guideline
related substances . . . . .passes test	CPMP/ICH/283/95.
benzene (G.C.) . . . . .max. 0,0002 %	

Art. No.	Volume	Container
AC03121000	1 l	
AC03122500	2,5 l	
AC0312005P	5 l	
AC0312025P	25 l	

## AC0314 Acetone, reagent grade, ACS, ISO, Reag. Ph Eur



assay (G.C.)	min. 99,8 %	chromium (Cr)	max. 0,000002 %
identity (IR-spectrum)	passes test	cobalt (Co)	max. 0,000002 %
density (20°/4°)	0,787 - 0,791	copper (Cu)	max. 0,000002 %
appearance of solution	passes test	gallium (Ga)	max. 0,000002 %
colour (Hazen)	max. 10	germanium (Ge)	max. 0,000002 %
solubility in water	passes test	gold (Au)	max. 0,000002 %
insoluble in water	passes test	indium (In)	max. 0,000002 %
acidity	max. 0,0002 meq/g	iron (Fe)	max. 0,000001 %
alkalinity	max. 0,0002 meq/g	lead (Pb)	max. 0,00001 %
chlorides (Cl <sub>2</sub> )	max. 0,00001 %	lithium (Li)	max. 0,000005 %
nitrites (NO <sub>2</sub> )	max. 0,00001 %	magnesium (Mg)	max. 0,000001 %
phosphates (as PO <sub>4</sub> )	max. 0,00001 %	manganese (Mn)	max. 0,000002 %
sulfates (SO <sub>4</sub> )	max. 0,00001 %	molybdenum (Mo)	max. 0,000002 %
aluminium (Al)	max. 0,00005 %	nickel (Ni)	max. 0,000002 %
antimony (Sb)	max. 0,000002 %	silver (Ag)	max. 0,000002 %
arsenic (As)	max. 0,000002 %	thallium (Tl)	max. 0,000002 %
barium (Ba)	max. 0,00001 %	tin (Sn)	max. 0,00001 %
beryllium (Be)	max. 0,000002 %	titanium (Ti)	max. 0,000002 %
bismuth (Bi)	max. 0,000002 %	vanadium (V)	max. 0,000002 %
boron (B)	max. 0,000002 %	zinc (Zn)	max. 0,00001 %
cadmium (Cd)	max. 0,000005 %	zirconium (Zr)	max. 0,000002 %
calcium (Ca)	max. 0,00005 %	aldehydes (as HCHO)	max. 0,001 %

related substances . . . . . passes test  
benzene (G.C.) . . . . . max. 0,0002 %  
cyclohexane (G.C.) . . . . . max. 0,1 %  
alcoholacetone (G.C.) . . . . . max. 0,02 %  
ethanol (G.C.) . . . . . max. 0,01 %  
methanol (G.C.) . . . . . max. 0,05 %  
2-propanol (G.C.) . . . . . max. 0,05 %  
substances reducing KMnO<sub>4</sub> . . . . . passes test  
residue on evaporation . . . . . max. 0,0005 %  
water (K.F.) . . . . . max. 0,2 %

Art. No.	Volume	Container
AC03141000	1 l	
AC03142500	2,5 l	
AC0314005P	5 l	
AC0314007E	7 l	
AC0314025A	25 l	
AC0314025P	25 l	
AC0314025S	25 l	
AC0314200L	200 l	

AC0316 Acetone, dried (max. 0,01% H<sub>2</sub>O), reagent grade

assay (G.C.)	min. 99,8 %	boron (B)	max. 0,000002 %
identity (IR-spectrum)	passes test	cadmium (Cd)	max. 0,000005 %
density (20°/4°)	0,787 - 0,791	calcium (Ca)	max. 0,00005 %
appearance of solution	passes test	chromium (Cr)	max. 0,000002 %
colour (Hazen)	max. 10	cobalt (Co)	max. 0,000002 %
solubility in water	passes test	copper (Cu)	max. 0,000002 %
insoluble in water	passes test	gallium (Ga)	max. 0,000002 %
acidity	max. 0,0002 meq/g	germanium (Ge)	max. 0,000002 %
alkalinity	max. 0,0002 meq/g	gold (Au)	max. 0,000002 %
chlorides (Cl <sub>2</sub> )	max. 0,00001 %	indium (In)	max. 0,000002 %
nitrites (NO <sub>2</sub> )	max. 0,00001 %	iron (Fe)	max. 0,00001 %
phosphates (as PO <sub>4</sub> )	max. 0,00001 %	lead (Pb)	max. 0,00001 %
sulfates (SO <sub>4</sub> )	max. 0,00001 %	lithium (Li)	max. 0,000005 %
aluminium (Al)	max. 0,00005 %	magnesium (Mg)	max. 0,00001 %
antimony (Sb)	max. 0,000002 %	manganese (Mn)	max. 0,000002 %
arsenic (As)	max. 0,000002 %	molybdenum (Mo)	max. 0,000002 %
barium (Ba)	max. 0,00001 %	nickel (Ni)	max. 0,000002 %
beryllium (Be)	max. 0,000002 %	silver (Ag)	max. 0,000002 %
bismuth (Bi)	max. 0,000002 %	thallium (Tl)	max. 0,000002 %

tin (Sn) . . . . . max. 0,00001 %  
titanium (Ti) . . . . . max. 0,000002 %  
vanadium (V) . . . . . max. 0,000002 %  
zinc (Zn) . . . . . max. 0,00001 %  
zirconium (Zr) . . . . . max. 0,000002 %  
aldehydes (as HCHO) . . . . . max. 0,001 %  
cyclohexane (G.C.) . . . . . max. 0,1 %  
alcoholacetone (G.C.) . . . . . max. 0,02 %  
ethanol (G.C.) . . . . . max. 0,01 %  
methanol (G.C.) . . . . . max. 0,05 %  
2-propanol (G.C.) . . . . . max. 0,05 %  
substances reducing KMnO<sub>4</sub> . . . . . passes test  
residue on evaporation . . . . . max. 0,0005 %  
water (K.F.) . . . . . max. 0,01 %

Art. No.	Volume	Container
AC03161000	1 l	

## AC0310 Acetone, Multisolvant® HPLC grade ACS ISO UV-VIS



assay (G.C.)	min. 99,8 %	gallium (Ga)	max. 0,000002 %
identity (IR-spectrum)	passes test	germanium (Ge)	max. 0,000002 %
density (20°/4°)	0,787 - 0,791	gold (Au)	max. 0,000002 %
appearance of solution	passes test	indium (In)	max. 0,000002 %
colour (Hazen)	max. 10	iron (Fe)	max. 0,000002 %
solubility in water	passes test	lead (Pb)	max. 0,000001 %
insoluble in water	passes test	lithium (Li)	max. 0,000005 %
acidity	max. 0,0002 meq/g	magnesium (Mg)	max. 0,00001 %
alkalinity	max. 0,0002 meq/g	manganese (Mn)	max. 0,00001 %
chlorides (Cl <sub>2</sub> )	max. 0,00001 %	molybdenum (Mo)	max. 0,000002 %
nitrites (NO <sub>2</sub> )	max. 0,00001 %	nickel (Ni)	max. 0,000001 %
phosphates (as PO <sub>4</sub> )	max. 0,00001 %	silver (Ag)	max. 0,000002 %
sulfates (SO <sub>4</sub> )	max. 0,00001 %	thallium (Tl)	max. 0,000002 %
aluminium (Al)	max. 0,00001 %	tin (Sn)	max. 0,00001 %
antimony (Sb)	max. 0,000002 %	titanium (Ti)	max. 0,000002 %
arsenic (As)	max. 0,000002 %	vanadium (V)	max. 0,000002 %
barium (Ba)	max. 0,000001 %	zinc (Zn)	max. 0,000001 %
beryllium (Be)	max. 0,000002 %	zirconium (Zr)	max. 0,000002 %
bismuth (Bi)	max. 0,000002 %	aldehydes (as HCHO)	max. 0,002 %
boron (B)	max. 0,000002 %	cyclohexane (G.C.)	max. 0,1 %
cadmium (Cd)	max. 0,000001 %	alcoholacetone (G.C.)	max. 0,02 %
calcium (Ca)	max. 0,00003 %	ethanol (G.C.)	max. 0,01 %
chromium (Cr)	max. 0,000002 %	methanol (G.C.)	max. 0,05 %
cobalt (Co)	max. 0,000002 %	2-propanol (G.C.)	max. 0,05 %
copper (Cu)	max. 0,000001 %	reducing substances	passes test

residue on evaporation . . . . . max. 0,0002 %  
water (K.F.) . . . . . max. 0,2 %  
liquid chromatography suitability  
absorbance . . . . . passes test  
min. transmission/max. absorbance in a 1,0 cm cell at  
wavelength: T(%) A (AU)  
330 nm. . . . . 10 % 1,000 AU  
335 nm. . . . . 50 % 0,301 AU  
339 nm. . . . . 80 % 0,097 AU  
342 nm. . . . . 90 % 0,046 AU  
350 nm. . . . . 98 % 0,009 AU  
Microfiltered through membranes of pore diameter  
0,22 µm

Art. No.	Volume	Container
AC03101000	1 l	
AC03102500	2,5 l	
AC03104000	4 l	
AC0310007E	7 l	
AC0310025S	25 l	
AC0310030S	30 l	

## AC0308 Acetone, for GC residue analysis



assay (G.C.)	min. 99,8 %
identity (IR-spectrum)	passes test
density (20°/4°)	0,787 - 0,791
residue on evaporation	max. 0,0001 %
water (K.F.)	max. 0,2 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 3 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
AC03081000	1 l	
AC03082500	2,5 l	
AC0308007E	7 l	

# Aceton

## AC0309 Acetone, GC ultra-trace analysis grade

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,787 - 0,791  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,2 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 3 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl. Suitable for highly volatile halogenated hydrocarbons trace analysis. ECD, from dichloromethane to 1,2,4-trichlorobenzene, no peaks are obtained greater than 1 ng/ml as tetrachloromethane.

Suitable for pesticide and polycyclic aromatic hydrocarbons residue analysis. FID, from 1-octanol to 1-tetradecanol, no peaks are obtained greater than 5 ng/ml as 1-tetradecanol. No peaks are obtained in vicinity of pyrene.

Art. No.	Volume	Container
AC03091000	1 l	
AC03092500	2,5 l	

## AC0319 Acetone, 99,8%, anhydrous (max. 0,005% H<sub>2</sub>O)

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,787 - 0,791  
 appearance of solution . . . . . passes test  
 colour (Hazen) . . . . . max. 10  
 solubility in water . . . . . passes test  
 insoluble in water . . . . . passes test  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 chlorides (Cl) . . . . . max. 0,00001 %  
 nitrates (NO<sub>3</sub>) . . . . . max. 0,00001 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,00001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,00001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 antimony (Sb) . . . . . max. 0,00002 %  
 arsenic (As) . . . . . max. 0,00002 %  
 barium (Ba) . . . . . max. 0,00001 %  
 beryllium (Be) . . . . . max. 0,00002 %  
 bismuth (Bi) . . . . . max. 0,00002 %  
 boron (B) . . . . . max. 0,00002 %

cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,00002 %  
 cobalt (Co) . . . . . max. 0,00002 %  
 copper (Cu) . . . . . max. 0,00002 %  
 gallium (Ga) . . . . . max. 0,00002 %  
 germanium (Ge) . . . . . max. 0,00002 %  
 gold (Au) . . . . . max. 0,00002 %  
 indium (In) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 lithium (Li) . . . . . max. 0,00005 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,00002 %  
 molybdenum (Mo) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 silver (Ag) . . . . . max. 0,00002 %  
 thallium (Tl) . . . . . max. 0,00002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 titanium (Ti) . . . . . max. 0,00002 %

vanadium (V) . . . . . max. 0,000002 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 zirconium (Zr) . . . . . max. 0,00002 %  
 aldehydes (as HCHO) . . . . . max. 0,002 %  
 cyclohexane (G.C.) . . . . . max. 0,1 %  
 alcoholdiacetone (G.C.) . . . . . max. 0,02 %  
 ethanol (G.C.) . . . . . max. 0,01 %  
 methanol (G.C.) . . . . . max. 0,05 %  
 2-propanol (G.C.) . . . . . max. 0,05 %  
 heavy metals (as Pb) . . . . . max. 0,0002 %  
 reducing substances . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
AC03190100	100 ml	
AC03190500	500 ml	
AC03191000	1 l	

## AC0320 Acetone, VLSI grade

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,787 - 0,791  
 resistivity . . . . . min. 5 MΩ·cm  
 acidity . . . . . max. 0,0003 meq/g  
 alkalinity . . . . . max. 0,0006 meq/g  
 chlorides (Cl) . . . . . max. 0,0001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
 copper (Cu) . . . . . max. 0,000001 %

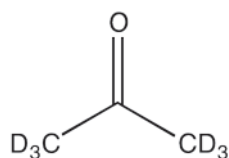
iron (Fe) . . . . . max. 0,000001 %  
 lead (Pb) . . . . . max. 0,000001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000001 %  
 nickel (Ni) . . . . . max. 0,000001 %  
 zinc (Zn) . . . . . max. 0,000001 %  
 aldehydes (as HCHO) . . . . . max. 0,0002 %  
 ethanol (G.C.) . . . . . max. 0,01 %  
 methanol (G.C.) . . . . . max. 0,05 %

2-propanol (G.C.) . . . . . max. 0,05 %  
 substances reducing KMnO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
AC03202500	2,5 l	
AC0320005P	5 l	

## Acetone-d<sub>6</sub>

### AC0322 Acetone-d<sub>6</sub>, deuteration degree min. 99,8%, NMR spectroscopy grade, Spectrosol®



- Synonyms: Hexadeuteroacetone
- C<sub>2</sub>D<sub>6</sub>O
- M = 64,12 g/mol
- CAS [666-52-4]
- EINECS-No.: 211-563-9
- Density: 0,87 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -95,4 °C
- Boiling point: 56 °C
- Flash pt. < -20 °C
- Ignition temp.: 540 °C
- Vapour pressure: (20 °C) 233 hPa
- Dielectric const.: (25 °C) 20,7
- LD 50 (oral, rat): 5800 mg/kg
- EC-Index-No.: 606-001-00-8
- ADR: 3 F1 II UN 1090
- IMDG: 3 II UN 1090
- IATA/ICAO: 3 II UN 1090

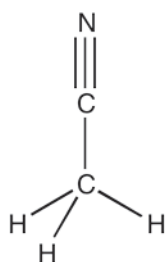
- GHS-signal word: Danger
- GHS-H sentences: H225 - H319 - EUH066 - H336
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2845 90 10 00
- Applications: for nuclear magnetic resonance spectroscopy.

#### Specifications:

deuteration degree . . . . . min. 99,8 %  
 water (K.F., H<sub>2</sub>O + D<sub>2</sub>O) . . . . . max. 0,03 %  
 performance test (NMR-spectrum) . . . . . passes test

Art. No.	Volume	Container
AC03220010	10 ml	

## Acetonitrile



- Synonyms: Methyl cyanide, Cyanomethane
- CH<sub>3</sub>CN
- M = 41,05 g/mol
- CAS [75-05-8]
- EINECS-No.: 200-835-2
- Density: 0,786 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -45,7 °C
- Boiling point: 81,6 °C
- Flash pt. 2 °C
- Ignition temp.: 524 °C
- Vapour pressure: (20 °C) 97 hPa
- Refraction index: (n 20 °C) 1,3442
- Dielectric const.: (20 °C) 37,5

- LD 50 (oral, rat): 2730 - 3800 mg/kg
- EC-Index-No.: 608-001-00-3
- ADR: 3 F1 II UN 1648
- IMDG: 3 II UN 1648
- IATA/ICAO: 3 II UN 1648
- GHS-signal word: Danger
- GHS-H sentences: H225 - H302 - H312 - H332 - H319
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P305 + P351 + P338 - P501a
- Tariff number: 2926 90 95 90
- Applications: chromatography, synthesis of organic products, solvents.

## AC0333 Acetonitrile, Multisolvant® HPLC grade ACS UV-VIS, Reag. Ph Eur



assay (G.C.) . . . . .	min. 99,9 %	copper (Cu) . . . . .	max. 0,00002 %
identity (IR-spectrum) . . . . .	passes test	iron (Fe) . . . . .	max. 0,00002 %
density (20°/4°) . . . . .	0,779 - 0,783	lead (Pb) . . . . .	max. 0,00001 %
colour (Hazen) . . . . .	max. 10	magnesium (Mg) . . . . .	max. 0,00001 %
appearance . . . . .	clear	manganese (Mn) . . . . .	max. 0,00001 %
acidity . . . . .	max. 0,0002 meq/g	nickel (Ni) . . . . .	max. 0,00002 %
alkalinity . . . . .	max. 0,0001 meq/g	tin (Sn) . . . . .	max. 0,00001 %
cyanides (CN) . . . . .	max. 0,005 %	zinc (Zn) . . . . .	max. 0,00001 %
aluminium (Al) . . . . .	max. 0,00001 %	residue on evaporation . . . . .	max. 0,0002 %
barium (Ba) . . . . .	max. 0,000001 %	water (K.F.) . . . . .	max. 0,03 %
boron (B) . . . . .	max. 0,000002 %	liquid chromatography suitability	
cadmium (Cd) . . . . .	max. 0,000001 %	absorbance . . . . .	passes test
calcium (Ca) . . . . .	max. 0,00003 %	min. transmission/max. absorbance in a 1,0 cm cell at	
chromium (Cr) . . . . .	max. 0,00002 %	wavelength:	T(%) A (AU)
cobalt (Co) . . . . .	max. 0,000002 %	195 nm . . . . .	70 % 0,155 AU

200 nm . . . . .	90 % 0,046 AU
230 nm . . . . .	98 % 0,009 AU
Microfiltered through membranes of pore diameter 0,22 µm	

Art. No.	Volume	Container
AC03331000	1 l	0
AC03332500	2,5 l	0
AC03334000	4 l	0
AC0333007E	7 l	0
AC0333020S	20 l	0
AC0333025S	25 l	0
AC0333185E	185 l	0

## AC0329 Acetonitrile, gradient 240nm/ far UV HPLC grade



assay (G.C.) . . . . .	min. 99,9 %	205 nm . . . . .	92 % 0,036 AU
identity (IR-spectrum) . . . . .	passes test	210 nm . . . . .	95 % 0,022 AU
density (20°/4°) . . . . .	0,779 - 0,783	220 nm . . . . .	98 % 0,009 AU
acidity . . . . .	max. 0,0002 meq/g	Microfiltered through membranes of pore diameter 0,22 µm	
alkalinity . . . . .	max. 0,0001 meq/g		
residue on evaporation . . . . .	max. 0,0002 %		
water (K.F.) . . . . .	max. 0,02 %		
gradient grade (240 nm) maximum background absorbance:0,01 AU maximum peak absorbance:0,0015 AU			
min. transmission/max. absorbance in a 1,0 cm cell at			
wavelength:	T(%) A (AU)		
200 nm . . . . .	90 % 0,046 AU		

Art. No.	Volume	Container
AC03291000	1 l	0
AC03292500	2,5 l	0
AC03294000	4 l	0
AC0329007E	7 l	0
AC0329025S	25 l	0
AC0329030S	30 l	0
AC0329100S	100 l	0
AC0329185E	185 l	0

## AC0331 Acetonitrile, supragradient HPLC grade



assay (G.C.) . . . . .	min. 99,9 %	gradient grade (210 nm) maximum peak absorbance:	
identity (IR-spectrum) . . . . .	passes test	0,0015 AU maximum background absorbance: 0,01 AU	
density (20°/4°) . . . . .	0,779 - 0,783	fluorescence analysis: maximum absorbance: 1 ppb	
acidity . . . . .	max. 0,0002 meq/g	as quinine (in 0,1 N sulfuric acid), for the spectra	
alkalinity . . . . .	max. 0,0001 meq/g	recorded at the following conditions: EX wavelength	
residue on evaporation . . . . .	max. 0,0001 %	between 220 and 450 EM wavelength between 250	
water (K.F.) . . . . .	max. 0,01 %	and 550	
min. transmission/max. absorbance in a 1,0 cm cell at		Microfiltered through membranes of pore diameter	
wavelength:	T(%) A (AU)	0,22 µm	
195 nm . . . . .	80 % 0,097 AU		
200 nm . . . . .	95 % 0,022 AU		
210 nm . . . . .	97 % 0,013 AU		
220 nm . . . . .	98 % 0,009 AU		

Art. No.	Volume	Container
AC03311000	1 l	0
AC03312500	2,5 l	0
AC03314000	4 l	0
AC0331007E	7 l	0
AC0331025S	25 l	0
AC0331030S	30 l	0
AC0331185E	185 l	0

## AC0391 Acetonitrile, UHPLC-MS



assay (G.C.) . . . . .	min. 99,9 %	potassium (K) . . . . .	max. 0,00001 %
identity (IR-spectrum) . . . . .	passes test	silver (Ag) . . . . .	max. 0,00001 %
density (20°/4°) . . . . .	0,779 - 0,783	sodium (Na) . . . . .	max. 0,00001 %
acidity . . . . .	max. 0,0002 meq/g	tin (Sn) . . . . .	max. 0,00001 %
aluminium (Al) . . . . .	max. 0,000005 %	zinc (Zn) . . . . .	max. 0,00001 %
barium (Ba) . . . . .	max. 0,000002 %	residue on evaporation . . . . .	max. 0,0001 %
cadmium (Cd) . . . . .	max. 0,000002 %	water (K.F.) . . . . .	max. 0,01 %
calcium (Ca) . . . . .	max. 0,00001 %	suitability for use in	
chromium (Cr) . . . . .	max. 0,000002 %	UHPLC-MS . . . . .	passes test
cobalt (Co) . . . . .	max. 0,000002 %	min. transmission/max. absorbance in a 1,0 cm cell at	
copper (Cu) . . . . .	max. 0,000002 %	wavelength:	T(%) A (AU)
iron (Fe) . . . . .	max. 0,00002 %	195 nm . . . . .	80 % 0,097 AU
lead (Pb) . . . . .	max. 0,00001 %	200 nm . . . . .	95 % 0,022 AU
magnesium (Mg) . . . . .	max. 0,00002 %	210 nm . . . . .	97 % 0,013 AU
manganese (Mn) . . . . .	max. 0,00002 %	220 nm . . . . .	98 % 0,009 AU
nickel (Ni) . . . . .	max. 0,000002 %	230 nm . . . . .	99 % 0,004 AU

gradient grade (210 nm) maximum background absorbance: 0,012 AU maximum peak absorbance:0,001 AU	
gradient grade (254 nm) maximum peak absorbance: 0,0002 AU	
UHPLC-MS test ESI+ . . . . .	max. 5 ppb Reserpin
UHPLC-MS test ESI- . . . . .	max. 20 ppb Digoxin
Microfiltered through membranes of pore diameter 0,1 µm	

Art. No.	Volume	Container
AC03911000	1 l	0
AC03912500	2,5 l	0

## AC0371 Acetonitrile, LC-MS



assay (G.C.) . . . . .	min. 99,9 %	manganese (Mn) . . . . .	max. 0,000002 %
identity (IR-spectrum) . . . . .	passes test	nickel (Ni) . . . . .	max. 0,000002 %
density (20°/4°) . . . . .	0,779 - 0,783	potassium (K) . . . . .	max. 0,00001 %
acidity . . . . .	max. 0,0002 meq/g	silver (Ag) . . . . .	max. 0,00001 %
aluminium (Al) . . . . .	max. 0,000005 %	sodium (Na) . . . . .	max. 0,00001 %
barium (Ba) . . . . .	max. 0,00001 %	tin (Sn) . . . . .	max. 0,00001 %
cadmium (Cd) . . . . .	max. 0,000005 %	zinc (Zn) . . . . .	max. 0,00001 %
calcium (Ca) . . . . .	max. 0,00001 %	residue on evaporation . . . . .	max. 0,0001 %
chromium (Cr) . . . . .	max. 0,000002 %	water (K.F.) . . . . .	max. 0,01 %
cobalt (Co) . . . . .	max. 0,000002 %	suitability for use in LC-MS . . . . .	passes test
copper (Cu) . . . . .	max. 0,000002 %	min. transmission/max. absorbance in a 1,0 cm cell at	
iron (Fe) . . . . .	max. 0,00001 %	wavelength:	T(%) A (AU)
lead (Pb) . . . . .	max. 0,00001 %	195 nm . . . . .	80 % 0,097 AU
magnesium (Mg) . . . . .	max. 0,00001 %	200 nm . . . . .	95 % 0,022 AU

210 nm . . . . .	97 % 0,013 AU
220 nm . . . . .	98 % 0,009 AU
230 nm . . . . .	99 % 0,004 AU
gradient grade (210 nm) maximum background absorbance: 0,012 AU maximum peak absorbance: 0,001 AU gradient grade (254 nm) maximum peak absorbance: 0,0002 AU	
Microfiltered through membranes of pore diameter 0,22 µm	

Art. No.	Volume	Container
AC03711000	1 l	0
AC03712500	2,5 l	0

# Aceton

## AC0338 Acetonitrile, for GC residue analysis, suitable for QuEChERS

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,779 - 0,783  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,02 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 3 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl. Suitable for QuEChERS

Art. No.	Volume	Container
AC03381000	1 l	
AC03382500	2,5 l	

## AC0326 Acetonitrile, 99,9%, anhydrous (max. 0,001% H<sub>2</sub>O)

assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,779 - 0,783  
 appearance . . . . . clear  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0001 meq/g  
 colour (Hazen) . . . . . max. 10  
 cyanides (CN) . . . . . max. 0,005 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %

cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,00002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %

zinc (Zn) . . . . . max. 0,00001 %  
 reaction to H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,001 %

Art. No.	Volume	Container
AC03260100	100 ml	
AC03260500	500 ml	
AC03261000	1 l	

## AC0370 Acetonitrile, 99,7%, anhydrous (max. 0,005% H<sub>2</sub>O), with molecular sieves

assay (G.C.) . . . . . min. 99,7 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,779 - 0,783

acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0001 meq/g  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
AC03701000	1 l	

## AC0336 Acetonitrile, max. 0,003% H<sub>2</sub>O, DNA synthesis grade

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,779 - 0,783  
 acidity . . . . . max. 0,001 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 residue on evaporation . . . . . max. 0,0001 %

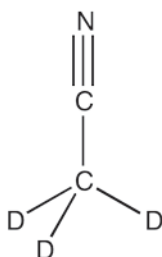
water (K.F.) . . . . . max. 0,003 %  
 minimum transmission in a 1,0 cm cell at wavelength:-  
 transmission:  
 200 nm. . . . . 88 %  
 225 nm. . . . . 98 %

Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
AC03362500	2,5 l	

## Acetonitrile-d<sub>3</sub>

### AC0332 Acetonitrile-d<sub>3</sub>, deuteration degree min. 99,8%, NMR spectroscopy grade, Spectrosol®



- Synonyms: Trideuteroacetonitrile
- CD<sub>3</sub>CN
- M = 44,05 g/mol
- CAS [2206-26-0]
- EINECS-No.: 218-616-5
- Density: 0,84 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -46 °C
- Boiling point: 79 °C
- Flash pt. 5 °C
- Ignition temp.: 525 °C
- Vapour pressure: (20 °C) 97 hPa
- LD 50 (oral, rat): 2730 - 3800 mg/kg
- ADR: 3 F1 II UN 1648
- IMDG: 3 II UN 1648
- IATA/ICAO: 3 II UN 1648
- GHS-signal word: Danger

- GHS-H sentences: H225 - H302 - H312 - H332 - H319
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P305 + P351 + P338 - P501a
- Tariff number: 2845 90 10 00
- Applications: for nuclear magnetic resonance spectroscopy.

#### Specifications:

deuteration degree . . . . . min. 99,8 %  
 water (K.F., H<sub>2</sub>O + D<sub>2</sub>O) . . . . . max. 0,03 %  
 performance test (NMR-spectrum) . . . . . passes test

Art. No.	Volume	Container
AC03320010	10 ml	

## Acetonitrile with 0,1% acetic acid

### AC0374 Acetonitrile with 0,1% acetic acid, LC-MS

- Flash pt. 6 °C
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993
- GHS-signal word: Danger
- GHS-H sentences: H225 - H312 - H332 - H319 -
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P305 + P351 + P338 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, chromatography.

#### Specifications:

acetic acid content (v/v) . . . . . 0,093 - 0,107 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 magnesium (Mg) . . . . . max. 0,00005 %  
 potassium (K) . . . . . max. 0,00005 %  
 sodium (Na) . . . . . max. 0,0002 %  
 suitability for use in LC-MS . . . . . passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 T(%) A(AU)  
 210 nm. . . . . 20 % 0,699 AU

230 nm. . . . . 50 % 0,301 AU  
 254 nm. . . . . 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
AC03741000	1 l	



## Acetonitrile with 0,1% formic acid

## AC0373 Acetonitrile with 0,1% formic acid, LC-MS



- Density: 0,78 g/cm<sup>3</sup>
- Flash pt. 2 °C
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993
- GHS-signal word: Danger
- GHS-H sentences: H225 - H312 - H332 - H319
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P305 + P351 + P338 - P501a -
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, chromatography.

**Specifications:**

formic acid content (v/v) . . . . . 0,093 - 0,107 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 magnesium (Mg) . . . . . max. 0,00005 %  
 potassium (K) . . . . . max. 0,00005 %  
 sodium (Na) . . . . . max. 0,0002 %  
 suitability for use in LC-MS . . . . . passes test  
 gradient grade (254 nm) maximum peak absorbance: 0,05  
 AU min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 210 nm. . . . . 5 % 1,301 AU

230 nm. . . . . 15 % 0,824 AU  
 254 nm. . . . . 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
AC03731000	1 l	0

## Acetonitrile with 0,1% trifluoroacetic acid

## AC0372 Acetonitrile with 0,1% trifluoroacetic acid, LC-MS



- Flash pt. 6 °C
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993
- GHS-signal word: Danger
- GHS-H sentences: H225 - H312 - H332 - H319
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P305 + P351 + P338 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, chromatography.

**Specifications:**

trifluoroacetic acid content  
 (v/v) . . . . . 0,093 - 0,107 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 magnesium (Mg) . . . . . max. 0,00005 %  
 potassium (K) . . . . . max. 0,00005 %  
 sodium (Na) . . . . . max. 0,0002 %  
 suitability for use in LC-MS . . . . . passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at

wavelength: T(%) A (AU)  
 210 nm. . . . . 30 % 0,523 AU  
 230 nm. . . . . 50 % 0,301 AU  
 254 nm. . . . . 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
AC03721000	1 l	0

## Acetophenone

## AC0300 Acetophenone, extra pure



- Synonyms: Methyl phenyl ketone, Phenyl methyl ketone
- C<sub>8</sub>H<sub>8</sub>O
- M = 120,15 g/mol
- CAS [98-86-2]
- EINECS-No.: 202-708-7
- Density: 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 5,5 g/l
- Melting point: 20 °C
- Boiling point: 202 °C
- Flash pt. 82 °C
- Ignition temp.: 570 °C
- Vapour pressure: (20 °C) 0,4 hPa

- Refraction index: (n 20 °C/D) 1,5339
- Dielectric const.: (20 °C) 8,6
- LD 50 (oral, rat): 815 mg/kg
- EC-Index-No.: 606-042-00-1
- ADR: Not regulated/IMDG: Not regulated/IATA/ICAO: 9 UN 3334
- GHS-signal word: Warning
- GHS-H sentences: H302 - H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P301 + P312 - P337 + P313 - P501a
- Tariff number: 2914 39 00 90
- Applications: perfumery, synthesis of organic products, synthesis of polymers.

**Specifications:**

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,025 - 1,028  
 free acid (as C<sub>6</sub>H<sub>5</sub>COOH) . . . . . max. 0,05 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
AC03001000	1 l	0

## Acetylacetone

## AC0220 Acetylacetone, synthesis grade



- Synonyms: 2,4-Pentanedione, ACAC
- C<sub>5</sub>H<sub>8</sub>O<sub>2</sub>
- M = 100,12 g/mol
- CAS [123-54-6]
- EINECS-No.: 204-634-0
- Density: 0,97 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 200 g/l
- Melting point: -23 °C
- Boiling point: 140 °C
- Flash pt. 34 °C
- Ignition temp.: 335 °C
- Vapour pressure: (20 °C) 9 hPa
- Refraction index: (n 20 °C) 1,4510

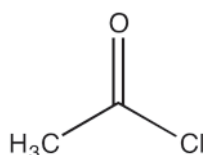
- Dielectric const.: (20 °C) 25,7
- LD 50 (oral, rat): 575 mg/kg
- EC-Index-No.: 606-029-00-0
- ADR: 3 FT1 III UN 2310
- IMDG: 3 III UN 2310
- IATA/ICAO: 3 III UN 2310
- GHS-signal word: Warning
- GHS-H sentences: H226 - H302
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2914 19 90 90
- Applications: synthesis of organic products, as gaso-line additive, in lubricant compositions, insecticide.

**Specifications:**

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,972 - 0,974  
 residue on evaporation . . . . . max. 0,005 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
AC02200250	250 ml	0
AC02201000	1 l	0

## Acetyl chloride



- Synonyms: Acetic acid chloride
- CH<sub>3</sub>COCl
- M = 78,50 g/mol
- CAS [75-36-5]
- EINECS-No.: 200-865-6
- Density: 1,10 g/cm<sup>3</sup>
- Solub. in water: (20 °C): hydrolysis reaction
- Melting point: -112 °C
- Boiling point: 52 °C
- Flash pt. 5 °C
- Ignition temp.: 390 °C
- Vapour pressure: (20 °C) 320 hPa
- Refraction index: (n 20 °C/D) 1,3890

- Dielectric const.: (20 °C) 15,9
- LD 50 (oral, rat): 910 mg/kg
- EC-Index-No.: 607-011-00-5
- ADR: 3 FC II UN 1717
- IMDG: 3 II UN 1717
- IATA/ICAO: 3 II UN 1717
- GHS-signal word: Danger
- GHS-H sentences: H225 - H314 - EUH014
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 90 70 90
- Applications: acetylating agent, for water determination.

# Acetyl

## CLO230 Acetyl chloride, synthesis grade

assay (argentometric) . . . . . min. 98 %	residue on evaporation . . . . . max. 0,01 %
identity (IR-spectrum) . . . . . passes test	
density (20°/4°) . . . . . 1,103 - 1,105	

Art. No.	Volume	Container
CLO2301000	1 l	

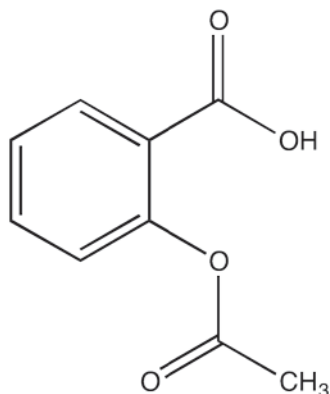
## CLO232 Acetyl chloride, reagent grade, ACS

assay (G.C.) . . . . . min. 98,5 %	phosphates (as PO <sub>4</sub> ) . . . . . max. 0,002 %
identity (IR-spectrum) . . . . . passes test	heavy metals (as Pb) . . . . . max. 0,0001 %
density (20°/4°) . . . . . 1,103 - 1,105	iron (Fe) . . . . . max. 0,00001 %
colour (Hazen) . . . . . max. 10	residue on evaporation . . . . . max. 0,001 %
insoluble in water . . . . . max. 0,0025 %	

Art. No.	Volume	Container
CLO2320100	100 ml	
CLO2320250	250 ml	
CLO2321000	1 l	

## Acetylsalicylic acid

### AC0355 Acetylsalicylic acid, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms: Acetoxybenzoic acid
- C<sub>9</sub>H<sub>8</sub>O<sub>4</sub>
- M = 180,15 g/mol
- CAS [50-78-2]
- EINECS-No.: 200-064-1
- Solub. in water: (20 °C): 3,0 g/l
- Melting point: 136 °C
- Flash pt. 250 °C
- Ignition temp.: 500 °C
- LD 50 (oral, rat): 200 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H301
- GHS-P sentences: P264 - P270 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2918 22 00 00
- Applications: for pharmaceuticals synthesizing, in pharma industry.

appearance of solution (10%, ethanol 96%) . . . . . clear and colourless chlorides (Cl) . . . . . max. 0,014 % substances insoluble in sodium carbonate (Na<sub>2</sub>CO<sub>3</sub>) . . . . . passes test sulfates (SO<sub>4</sub>) . . . . . max. 0,04 % heavy metals (as Pb) . . . . . max. 0,001 % salicylic acid . . . . . max. 0,1 % related substances . . . . . passes test substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test loss on drying (at vacuum) . . . . . max. 0,5 % residue on ignition . . . . . max. 0,1 % Residual solvents are analysed according to guideline CPMP/ICH/283/95.

**Specifications:**

assay (acidimetric) . . . . .	99,5 - 100,5 %
identification . . . . .	passes test

Art. No.	Volume	Container
AC03550500	500 g	
AC03551000	1 kg	
AC0355005P	5 kg	
AC0355025P	25 kg	

## Acid detergent fibre reagent

### RE0025 Acid detergent fibre reagent, ADF according to Van Soest

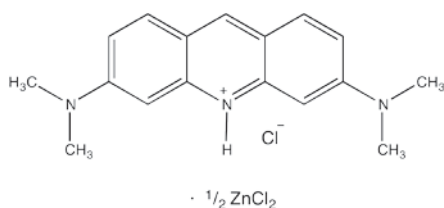


- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Density: 1,03 g/cm<sup>3</sup></li> <li>• ADR: 8 C9 III UN 1760</li> <li>• IMDG: 8 III UN 1760</li> <li>• IATA/ICAO: 8 III UN 1760</li> <li>• GHS-signal word: Warning</li> <li>• GHS-H sentences: H315 - H319</li> <li>• GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313</li> </ul> | <ul style="list-style-type: none"> <li>• Tariff number: 3822 00 00 00</li> <li>• Applications: for acid detergent fibre determination in animal feed.</li> </ul> |
|--|--|
- Specifications:**
- composition :
- |   |      |
|---|------|
| hexadecyltrimethylammonium bromide . . . . .      | 20 g |
| sulfuric acid, solution 0,5 mol/l (1 N) . . . . . | 1 l  |

Art. No.	Volume	Container
RE0025005P	5 l	

## Acridine orange, C.I. 46005

### AN0040 Acridine orange, C.I. 46005, for microscopy



- Synonyms: Basic orange, Acridine orange zinc chloride double salt
- C<sub>17</sub>H<sub>20</sub>ClN<sub>3</sub> · 1/2 ZnCl<sub>2</sub>
- M = 438,09 g/mol
- CAS [10127-02-3]
- EINECS-No.: 233-353-6
- Solub. in water: (20 °C): 28 g/l
- GHS-signal word: Warning
- GHS-H sentences: H341
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 3204 13 00 90
- Applications: bacterium staining, manufacture of dyes.

**Specifications:**

assay (espectrophotometric) . . . . . min. 60 %

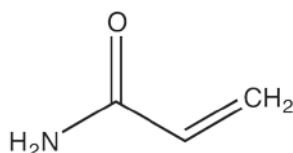
Absorption maximum λ (in ethanol 50 %) . . . . . 491 - 495 nm

Absorptivity (A1%/1 cm; λ max; ethanol 50 %) . . . . . min. 1345

related substances (TLC) . . . . . passes test suitability for microscopy . . . . . passes test loss on drying (110 °C) . . . . . max. 5 %

Art. No.	Volume	Container
AN00400025	25 g	

## Acrylamide



- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Synonyms: Acrylic acid amide</li> <li>• C<sub>3</sub>H<sub>5</sub>NO</li> <li>• M = 71,08 g/mol</li> <li>• CAS [79-06-1]</li> <li>• EINECS-No.: 201-173-7</li> <li>• Solub. in water: (20 °C): soluble</li> <li>• Melting point: 84 °C</li> <li>• Boiling point: (2,7 hPa) 87 °C</li> <li>• Vapour pressure: (20 °C) 0,009 hPa</li> <li>• LD 50 (oral, rat): 124 mg/kg</li> <li>• EC-Index-No.: 616-003-00-0</li> <li>• ADR: 6.1 T2 III UN 2074</li> </ul> | <ul style="list-style-type: none"> <li>• IMDG: 6.1 III UN 2074</li> <li>• IATA/ICAO: 6.1 III UN 2074</li> <li>• GHS-signal word: Danger</li> <li>• GHS-H sentences: H301 - H340 - H350 - H372 - H361f - H312 - H332 - H315 - H319 - H317</li> <li>• GHS-P sentences: P260 - P301 + P310 - P305 + P351 + P338 - P321 - P405 - P501a</li> <li>• Tariff number: 2924 19 00 90</li> <li>• Applications: synthesis of polymers, for electrophoresis.</li> <li>• Appearance: White crystalline powder</li> </ul> |
|---|--|

## AC3343 Acrylamide, molecular biology grade



assay (G.C.) . . . . .	min. 99,9 %	solubility (sol 50%, H <sub>2</sub> O) . . . . .	passes test
identity (IR-spectrum) . . . . .	passes test	turbidity (50 %, H <sub>2</sub> O) . . . . .	max. 2 N.T.U.
appearance . . . . .	passes test	turbidity (50 %, methanol, 37°C) . . . . .	max. 3 N.T.U.
pH ( 10 %, NaCl 0,1M) . . . . .	5,0 - 6,5	iron (Fe) . . . . .	max. 0,0001 %
free acid (as acrylic acid) . . . . .	max. 0,0005 %	lead (Pb) . . . . .	max. 0,0001 %
absorbance of an aqueous solution (10 %) in a 1 cm cell at 300nm . . . . .	max. 0,1 AU	magnesium (Mg) . . . . .	max. 0,0001 %
conductivity (40 %, H <sub>2</sub> O, 20°C) . . . . .	max. 10 µS/cm	water (K.F.) . . . . .	max. 0,1 %
		DNases, RNases, Proteases . . . . .	non detected

Art. No.	Volume	Container
AC33430100	100 g	☐

## AC3345 Acrylamide, electrophoresis grade

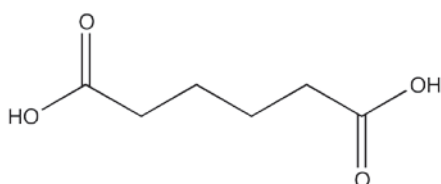


assay (G.C.) . . . . .	min. 99,9 %	absorbance of an aqueous solution (10 %) in a 1 cm cell at 300nm . . . . .	max. 0,15 AU
identity (IR-spectrum) . . . . .	passes test	turbidity (50 %, H <sub>2</sub> O) . . . . .	max. 2 N.T.U.
insoluble in water . . . . .	max. 0,005 %	turbidity (50 %, methanol, 37°C) . . . . .	max. 3 N.T.U.
pH ( 10 %, NaCl 0,1M) . . . . .	5,0 - 6,6	water (K.F.) . . . . .	max. 0,1 %
free acid (as acrylic acid) . . . . .	max. 0,001 %		
conductivity (40 %, H <sub>2</sub> O, 20°C) . . . . .	max. 10 µS/cm		

Art. No.	Volume	Container
AC33450100	100 g	☐
AC33451000	1 kg	☐

## Adipic acid

### AC0375 Adipic acid, synthesis grade



- Synonyms: Hexanedioic acid, 1,4-Butanedicarboxylic acid, Butane-1,4-dicarboxylic acid
- C<sub>6</sub>H<sub>10</sub>O<sub>4</sub>
- M = 146,14 g/mol
- CAS [124-04-9]
- EINECS-No.: 204-673-3
- Solub. in water: (25 °C): 24 g/l
- Melting point: 150 - 153 °C
- Boiling point: (13 hPa) 205 °C
- Flash pt. 196 °C
- Vapour pressure: (151 °C) 0,4 hPa
- LD 50 (oral, rat): ~ 5700 mg/kg
- EC-Index-No.: 607-144-00-9
- GHS-signal word: Warning
- GHS-H sentences: H319

- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2917 12 00 10
- Applications: manufacturing of synthetic resins, plasticizer, in lubricant compositions.

#### Specifications:

assay (acidimetric) . . . . .	min. 99,5 %
identity (IR-spectrum) . . . . .	passes test
residue on ignition . . . . .	max. 0,01 %
water (K.F.) . . . . .	max. 0,2 %

Art. No.	Volume	Container
AC03751000	1 kg	☐

## Agar-agar

- Synonyms: Agar
- CAS [9002-18-0]
- EINECS-No.: 232-658-1

- LD 50 (oral, rat): 11000 mg/kg
- Tariff number: 1302 31 00 00

- Applications: nutrient media for bacterial culture, manufacture of dyes, emulsifier.

### AG0020 Agar-agar, powder, for bacteriology

pH in gel (1,5 %, before autoclaving) . . . . .	6,5 - 7,0	melting point (1,5 %, after autoclaving) . . . . .	85 - 87 °C
pH in gel (1,5 %, after autoclaving) . . . . .	6,5 - 7,0	gel point (1,5 %, after autoclaving) . . . . .	36 - 37 °C
turbidity (1,5 %, before autoclaving) . . . . .	5,4 - 5,1 N.T.U.	gel strength (1,5 %, before autoclaving) . . . . .	750 Nikan
turbidity (1,5 %, after autoclaving) . . . . .	5,0 - 5,1 N.T.U.	gel strength (1,5%, after autoclaving) . . . . .	780 Nikan

full ash . . . . .	3 - 6 %
loss on drying . . . . .	5 - 7 %

Art. No.	Volume	Container
AG00200250	250 g	☐
AG00200500	500 g	☐
AG00201000	1 kg	☐

### AG0019 Agar-agar, food grade

insoluble matter . . . . .	max. 1 %	zinc (Zn) . . . . .	max. 0,0005 %
arsenic (As) . . . . .	max. 0,0003 %	absorption of water . . . . .	passes test
copper and zinc . . . . .	max. 0,001 %	gelatines and other proteins . . . . .	passes test
heavy metals (as Pb) . . . . .	max. 0,001 %	starch and dextrine . . . . .	passes test
lead (Pb) . . . . .	max. 0,001 %	residue on ignition . . . . .	max. 6,5 %

loss on drying . . . . .	max. 20 %
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Art. No.	Volume	Container
AG00191000	1 kg	☐

## Agarose

- CAS [9012-36-6]
- EINECS-No.: 232-731-8

- Solub. in water: (20 °C): sparingly soluble
- Tariff number: 3913 90 00 99

- Applications: analytical chemistry, for electrophoresis.

### AG0030 Agarose Low EEO, electrophoresis grade

gel strength . . . . .	min. 1000 g/cm <sup>2</sup>	electroendosmosis . . . . .	max. 0,15 -mr
gelling point . . . . .	34 - 38 °C	water . . . . .	max. 10 %
melting point . . . . .	86 - 90 °C	DNases, RNases . . . . .	non detected

All purpose agarose for routine electrophoresis of nucleic acids and proteins.

sulfates (SO<sub>4</sub>) . . . . . max. 0,35 %

Art. No.	Volume	Container
AG00300025	25 g	☐
AG00300100	100 g	☐
AG00300250	250 g	☐
AG00301000	1 kg	☐

# Agaros

## AG0031 Agarose Medium EEO, electrophoresis grade

gel strength	min. 1000 g/cm <sup>2</sup>	water	max. 10 %
gelling point	34 - 38 °C	DNases, RNases	non detected
melting point	86 - 90 °C		
sulfates (SO <sub>4</sub> )	max. 0,35 %		
electroendosmosis	0,16 - 0,20 -mr		

Art. No.	Volume	Container
AG00310025	25 g	Ⓟ
AG00310100	100 g	Ⓟ

## AG0032 Agarose High EEO, electrophoresis grade

gel strength	min. 700 g/cm <sup>2</sup>	water	max. 10 %
gelling point	34 - 38 °C	DNases, RNases	non detected
melting point	86 - 90 °C		
sulfates (SO <sub>4</sub> )	max. 0,35 %		
electroendosmosis	0,21 - 0,26 -mr		

Art. No.	Volume	Container
AG00320025	25 g	Ⓟ
AG00320100	100 g	Ⓟ
AG00320250	250 g	Ⓟ

## AG0034 Agarose Low Melt, electrophoresis grade

gel strength	min. 400 g/cm <sup>2</sup>	Specially suitable in preparative electrophoresis for intact recovery of DNA and RNA, fragments greater than 1000 bp.	water	max. 10 %
gelling point	26 - 30 °C		DNases, RNases	non detected
mesh size	> 65			
melting point	62 - 70 °C	sulfates (SO <sub>4</sub> )	max. 0,15 %	
		electroendosmosis	max. 0,15 -mr	
		resolution	passes test	

Art. No.	Volume	Container
AG00340005	5 g	Ⓟ

## AG0033 Agarose High Gelling Temperature, electrophoresis grade

gel strength	min. 800 g/cm <sup>2</sup>	The high gelling temperature provides great thermal stability to the gel.	DNases, RNases	non detected
gelling point	40 - 44 °C	electroendosmosis	max. 0,1 -mr	
sulfates (SO <sub>4</sub> )	max. 0,25 %	water	max. 10 %	
melting point	86 - 90 °C			

Art. No.	Volume	Container
AG00330025	25 g	Ⓟ

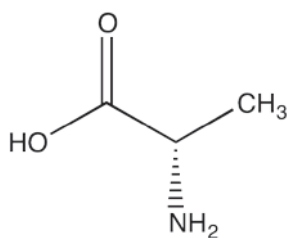
## AG0036 Agarose High Resolution, electrophoresis grade

gel strength (1,5%)	min. 1000 g/cm <sup>2</sup>	Allows resolution of small DNA, RNA and OCR fragments < 1000 bp	DNases, RNases	non detected
gelling point	30 - 38 °C	electroendosmosis	max. 0,15 -mr	
melting point	82 - 90 °C	resolution	passes test	
sulfates (SO <sub>4</sub> )	max. 0,15 %	water	max. 10 %	

Art. No.	Volume	Container
AG00360025	25 g	Ⓟ

## L-Alanine

### AL0030 L-Alanine, extra pure, Pharmapur®, Ph Eur, BP, USP



- Synonyms: a-Aminopropanoic acid, 2-Aminopropanoic acid, Ala
- C<sub>3</sub>H<sub>7</sub>NO<sub>2</sub>
- M = 89,09 g/mol
- CAS [56-41-7]
- EINECS-No.: 200-273-8
- Solub. in water: (25 °C): 166,5 g/l
- Melting point: 295 - 297 °C (decomposes)
- Tariff number: 2922 49 95 90
- Applications: nutrient media for bacterial culture, synthesis of organic products, in biochemistry, in pharma industry.

#### Specifications:

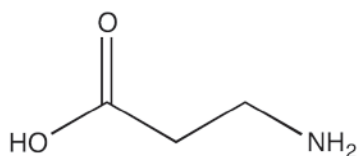
assay (titration with HClO <sub>4</sub> , on dried sample)	98,5 - 101 %
identity (IR-spectrum)	passes test

appearance of solution. . . . . passes test  
 specific rotation ([α]<sub>D</sub><sup>20</sup>/D, 100g/l, HCl 6 mol/l) . . . . . + 13,7 ° - + 15,1 °  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,03 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %  
 ninhydrin-positive substances . . . . . max. 0,5 %  
 residue on ignition . . . . . max. 0,1 %  
 loss on drying (105 °C) . . . . . max. 0,2 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AL00300100	100 g	Ⓟ

## β-Alanine

### AL0035 β-Alanine, extra pure



- Synonyms: 3-Aminopropanoic acid, Ala
- C<sub>3</sub>H<sub>7</sub>NO<sub>2</sub>
- M = 89,09 g/mol
- CAS [107-95-9]
- EINECS-No.: 203-536-5
- Solub. in water: (20 °C): 545 g/l
- Melting point: 200 °C (decomposes)
- Tariff number: 2922 49 20 00
- Applications: in biochemistry.

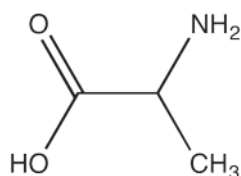
#### Specifications:

assay (titration with HClO<sub>4</sub>, on dried sample) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,001 %

Art. No.	Volume	Container
AL00350250	250 g	Ⓟ

## DL-Alanine

## AL0025 DL-Alanine, extra pure



- Synonyms: 2-Aminopropionic acid, Ala
- $C_3H_7NO_2$
- $M = 89,09 \text{ g/mol}$
- CAS [302-72-7]
- EINECS-No.: 206-126-4
- Solub. in water: (25 °C): 167 g/l
- Melting point: 264 - 296 °C (decomposes)
- Tariff number: 2922 49 95 90
- Applications: in biochemistry, in food industry.

**Specifications:**

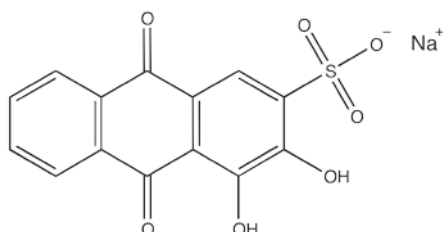
assay (titration with  $HClO_4$ ) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 insoluble in water .....max. 0,05 %  
 chlorides (Cl) .....max. 0,01 %  
 sulfates ( $SO_4$ ) .....max. 0,01 %

ammonium ( $NH_4$ ) .....max. 0,02 %  
 arsenic (As) .....max. 0,00015 %  
 copper (Cu) .....max. 0,001 %  
 heavy metals (as Pb) .....max. 0,001 %  
 iron (Fe) .....max. 0,001 %  
 lead (Pb) .....max. 0,001 %  
 nickel (Ni) .....max. 0,001 %  
 related substances (TLC) .....passes test  
 residue on ignition .....max. 0,1 %  
 loss on drying (105 °C) .....max. 0,5 %

Art. No.	Volume	Container
AL00250100	100 g	⊖
AL00251000	1 kg	⊖

## Alizarin red S, C.I. 58005

## R00070 Alizarin red S, C.I. 58005, reagent grade



- Synonyms: Sodium alizarinsulfonate, Alizarin carmine, 1,2-Dihydroxyanthraquinone-3-sulfonic acid sodium salt, Alizarin sulfonic acid sodium salt
- $C_{14}H_7NaO_7S$
- $M = 342,25 \text{ g/mol}$
- CAS [130-22-3]
- EINECS-No.: 204-981-8
- Tariff number: 3204 12 00 90
- Applications: analytical chemistry, indicator.

**Specifications:**

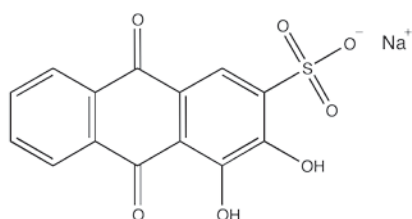
pH range (yellow to purple-red) .....3,7 - 5,2  
 identity (IR-spectrum) .....passes test  
 insoluble in water .....passes test  
 Absorption maximum  $\lambda_1$  (NaOH 0,1 M) .....592 - 596 nm

Absorption maximum  $\lambda_2$  (NaOH 0,1 M) .....553 - 558 nm  
 Absorptivity (A1%/1 cm;  $\lambda_{max1}$ , NaOH 0,1 M) .....305 - 480  
 Absorptivity (A1%/1 cm;  $\lambda_{max2}$ , NaOH 0,1 M) .....330 - 520  
 related substances (TLC) .....passes test  
 loss on drying (135 °C) .....max. 5,0 %  
 suitability for microscopy .....passes test  
 sensitivity to Aluminium. ....passes test

Art. No.	Volume	Container
R000700025	25 g	⊖
R000700100	100 g	⊖

## Alizarin red S, solution 0,1%

## R00071 Alizarin red S, solution 0,1%



- Synonyms: Sodium alizarinsulfonate, Alizarin carmine, 1,2-Dihydroxyanthraquinone-3-sulfonic acid sodium salt, Alizarin sulfonic acid sodium salt
- $C_{14}H_7NaO_7S$
- $M = 342,25 \text{ g/mol}$
- CAS [130-22-3]
- EINECS-No.: 204-981-8
- Density: 0,947 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

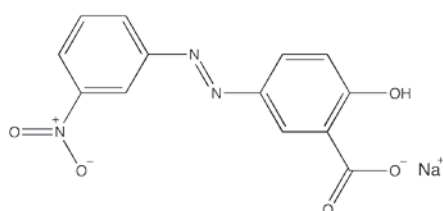
**Specifications:**

pH range (yellow to purple-red) .....3,7 - 5,2

Art. No.	Volume	Container
R000710100	100 ml	⊖

## Alizarin yellow GG, C.I. 14025

## AM0025 Alizarin yellow GG, C.I. 14025, indicator



- Synonyms: 2-Hydroxy-5[(3-nitrophenyl)azo]benzoic acid monosodium salt, Mordant yellow 1
- $C_{13}H_8N_2NaO_5$
- $M = 309,21 \text{ g/mol}$
- CAS [584-42-9]
- EINECS-No.: 209-536-1
- Solub. in water: (25 °C): ~ 12 g/l
- Tariff number: 3204 19 00 90
- Applications: indicator and for microbiology.

**Specifications:**

pH range (yellow-orange) .....10,2 - 12,1  
 Absorption maximum  $\lambda_1$  (pH 10,2) .....350 - 355 nm

Absorptivity (A1%/1 cm;  $\lambda_1$ , pH 10,2, on dried sample) .....620 - 720  
 Absorption maximum  $\lambda_2$  (pH 12,1) .....448 - 452 nm  
 Absorptivity (A1%/1 cm;  $\lambda_2$ ; pH 12,1 on dried sample) .....800 - 900  
 suitability for microbiology .....passes test  
 loss on drying (110 °C) .....max. 1 %

Art. No.	Volume	Container
AM00250010	10 g	⊖
AM00250050	50 g	⊖

# Alumin

## Aluminium

### AL0760 Aluminium, powder, synthesis grade



- Al
- M = 26,98 g/mol
- CAS [7429-90-5]
- EINECS-No.: 231-072-3
- Solub. in water: (20 °C): insoluble
- Melting point: 660 °C
- Boiling point: 2467 °C
- Ignition temp.: ~ 400 °C
- EC-Index-No.: 013-001-00-6
- ADR: 4.3 W2 II UN 1396

- IMDG: 4.3 II UN 1396
- IATA/ICAO: 4.3 II UN 1396
- GHS-signal word: Danger
- GHS-H sentences: H250 - H261
- GHS-P sentences: P210 - P222 - P231 + P232 - P280 - P422a - P501a
- Tariff number: 7603 10 00 00
- Applications: in explosive compositions, photography, synthesis of organic products, metal alloys, for the synthesis of: inorganic salts.

#### Specifications:

assay .....min. 99 %

Art. No.	Volume	Container
AL07600250	250 g	Ⓒ
AL07601000	1 kg	Ⓒ
AL0760005P	5 kg	Ⓕ

## Aluminium ammonium sulfate dodecahydrate

### AL0740 Aluminium ammonium sulfate dodecahydrate, extra pure, Pharpur®, USP

- Synonyms: Ammonium aluminium sulfate, Ammonium alum
- $\text{NH}_4\text{Al}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$
- M = 453,33 g/mol
- CAS [7784-26-1]
- EINECS-No.: 232-055-3
- Solub. in water: (20 °C): 150 g/l
- Melting point: 93 °C
- Boiling point: 200 °C
- Tariff number: 2833 30 00 00

- Applications: for water purifying, manufacture of dyes, manufacturing of lacquers, in porcelain industry, in pharma industry.

alkali and alkaline-earth salts .....max. 0,5 %  
loss on drying (300 °C) .....45 - 48 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

#### Specifications:

assay (complexometric, on dried sample) . . .99 - 100,5 %  
identification . . . . .passes test  
insoluble in water . . . . .max. 0,02 %  
heavy metals (as Pb) . . . . .max. 0,002 %  
iron (Fe) . . . . .passes test

Art. No.	Volume	Container
AL07400500	500 g	Ⓒ
AL07401000	1 kg	Ⓒ
AL0740005P	5 kg	Ⓕ

## Aluminium chloride hexahydrate

### AL0770 Aluminium chloride hexahydrate, extra pure, Pharpur®, Ph Eur, BP, USP



- Synonyms: Hydrochloric acid aluminium salt hexahydrate
- $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$
- M = 241,43 g/mol
- CAS [7784-13-6]
- EINECS-No.: 231-208-1
- Solub. in water: (20 °C): 1330 g/l
- Melting point: ~ 100 °C
- LD 50 (oral, rat): 3311 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 2827 32 00 00
- Applications: as gasoline additive, manufacture of dyes, cosmetics, in pharma industry.

water .....42 - 48 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

#### Specifications:

assay (complexometric) . . . . .95 - 101 %  
identification . . . . .passes test  
appearance of solution . . . . .passes test  
sulfates ( $\text{SO}_4$ ) . . . . .max. 0,01 %  
heavy metals (as Pb) . . . . .max. 0,002 %  
iron (Fe) . . . . .max. 0,001 %  
alkali and alkaline earth metals . . . . .max. 0,5 %

Art. No.	Volume	Container
AL07700500	500 g	Ⓒ
AL07701000	1 kg	Ⓒ
AL0770005P	5 kg	Ⓕ
AL0770025P	25 kg	Ⓕ

## Aluminium hydroxide

### AL0795 Aluminium hydroxide, extra pure

- Synonyms: Gibbsite, Hydrargillite
- $\text{Al}(\text{OH})_3$
- M = 78,00 g/mol
- CAS [21645-51-2]
- EINECS-No.: 244-492-7
- Solub. in water: (20 °C): ~ 0,0015 g/l
- Melting point: 300 °C (release of crystalline water)
- Vapour pressure: (20 °C) 5000 mg/kg
- Tariff number: 2818 30 00 90

- Applications: chromatography, emulsifier, manufacture of dyes, in lubricant compositions, ion exchanger.

residue on ignition .....32 - 35 %

#### Specifications:

assay (complexometric) . . . . .min. 90 %  
arsenic (As) . . . . .max. 0,0003 %  
copper (Cu) . . . . .max. 0,002 %  
iron (Fe) . . . . .max. 0,01 %  
lead (Pb) . . . . .max. 0,002 %  
nickel (Ni) . . . . .max. 0,002 %

Art. No.	Volume	Container
AL07950250	250 g	Ⓒ
AL07951000	1 kg	Ⓕ
AL0795005P	5 kg	Ⓕ
AL0795025P	25 kg	Ⓒ

## Aluminium nitrate nonahydrate

- $\text{Al}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O}$
- M = 375,13 g/mol
- CAS [7784-27-2]
- EINECS-No.: 236-751-8
- Solub. in water: (20 °C): 419 g/l
- Melting point: 73 °C
- Boiling point: 135 °C (decomposes)

- LD 50 (oral, rat): 3671 mg/kg
- ADR: 5.1 O2 III UN 1438
- IMDG: 5.1 III UN 1438
- IATA/ICAO: 5.1 III UN 1438
- GHS-signal word: Danger
- GHS-H sentences: H272 - H315 - H319

- GHS-P sentences: P221 - P210 - P220 - P305 + P351 + P338 - P321 - P501a
- Tariff number: 2834 29 80 00
- Applications: analytical chemistry, cosmetics, for the synthesis of: nitro compounds.
- Appearance: Semi-transparent to transparent crystals

### AL0850 Aluminium nitrate nonahydrate, extra pure



assay (complexometric) . . . . .98 - 102 %  
insoluble in water . . . . .max. 0,02 %  
pH (5 %,  $\text{H}_2\text{O}$ ) . . . . .2,5 - 3,5  
chlorides (Cl) . . . . .max. 0,005 %  
sulfates ( $\text{SO}_4$ ) . . . . .max. 0,005 %  
ammonium ( $\text{NH}_4$ ) . . . . .max. 0,05 %  
arsenic (As) . . . . .max. 0,0001 %  
calcium (Ca) . . . . .max. 0,02 %

copper (Cu) . . . . .max. 0,001 %  
heavy metals (as Pb) . . . . .max. 0,001 %  
iron (Fe) . . . . .max. 0,01 %  
lead (Pb) . . . . .max. 0,001 %  
magnesium (Mg) . . . . .max. 0,005 %  
nickel (Ni) . . . . .max. 0,001 %  
potassium (K) . . . . .max. 0,05 %  
sodium (Na) . . . . .max. 0,01 %

non precipitable by  $\text{NH}_4\text{OH}$  (as  $\text{SO}_4$ ) . . . . .max. 0,5 %

Art. No.	Volume	Container
AL08500500	500 g	Ⓒ
AL08501000	1 kg	Ⓒ
AL0850005P	5 kg	Ⓕ

**AL0820 Aluminium nitrate nonahydrate, reagent grade, ACS**

assay (complexometric) . . . . . 98 - 102 %  
 insoluble in water . . . . . max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 2,0 - 4,0  
 chlorides (Cl) . . . . . max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,02 %  
 cadmium (Cd) . . . . . max. 0,001 %  
 calcium (Ca) . . . . . max. 0,005 %

copper (Cu) . . . . . max. 0,001 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,002 %  
 lead (Pb) . . . . . max. 0,001 %  
 magnesium (Mg) . . . . . max. 0,001 %  
 potassium (K) . . . . . max. 0,002 %  
 sodium (Na) . . . . . max. 0,005 %  
 zinc (Zn) . . . . . max. 0,001 %

non precipitable by NH<sub>4</sub>OH (as SO<sub>4</sub>) . . . . . max. 0,05 %

Art. No.	Volume	Container
AL08200500	500 g	
AL08201000	1 kg	
AL0820005P	5 kg	

**Aluminium oxide**

- Synonyms: Alum earth, Alumina, Gooch crucibles
- Al<sub>2</sub>O<sub>3</sub>
- M = 101,96 g/mol
- CAS [1344-28-1]

- EINECS-No.: 215-691-6
- Solub. in water: (20 °C): insoluble
- Melting point: ~ 1760 °C
- Tariff number: 2818 20 00 00

- Applications: in porcelain industry, in building materials, catalyst, synthesis of organic products.

**AL0830 Aluminium oxide, synthesis grade**

residue on ignition . . . . . max. 1 %

Art. No.	Volume	Container
AL08301000	1 kg	

**AL0835 Aluminium oxide activated, neutral, for column chromatography (activity degree 1)**

grain size: 0,05-0,2 mm (70-290 mesh ASTM)  
 pH (10 %, H<sub>2</sub>O) . . . . . approx. 7,5

Art. No.	Volume	Container
AL08351000	1 kg	
AL08352500	2,5 kg	
AL0835005P	5 kg	

**AL0836 Aluminium oxide activated, acid, for column chromatography (activity degree 1)**

grain size: 0,05-0,2 mm (70-290 mesh ASTM)  
 pH (10 %, H<sub>2</sub>O) . . . . . 4,5

Art. No.	Volume	Container
AL08361000	1 kg	
AL0836005P	5 kg	

**AL0837 Aluminium oxide activated, basic, for column chromatography (activity degree 1)**

grain size: 0,05-0,2 mm (70-290 mesh ASTM)  
 pH (10 %, H<sub>2</sub>O) . . . . . approx. 10

Art. No.	Volume	Container
AL08371000	1 kg	
AL0837005P	5 kg	

**Aluminium potassium sulfate dodecahydrate**

- Synonyms: Potassium aluminium sulfate, Alum potassium, Potassium alum
- KAl(SO<sub>4</sub>)<sub>2</sub>·12H<sub>2</sub>O
- M = 474,39 g/mol

- CAS [7784-24-9]
- EINECS-No.: 233-141-3
- Solub. in water: (20 °C): 139 g/l
- Melting point: 92 °C

- Tariff number: 2833 30 00 00
- Applications: analytical chemistry, manufacture of dyes, manufacturing of lacquers, in explosive compositions.

**AL0745 Aluminium potassium sulfate dodecahydrate, extra pure, Pharmpur®, Ph Eur, BP, USP**

assay (complexometric) . . . . . 99 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 pH (10 %, H<sub>2</sub>O) . . . . . 3,0 - 3,5  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,2 %  
 heavy metals (as Pb) . . . . . max. 0,002 %

iron (Fe) . . . . . max. 0,01 %  
 loss on drying . . . . . 43,0 % - 46,0 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AL07450500	500 g	
AL07451000	1 kg	
AL0745005P	5 kg	
AL0745025P	25 kg	

**AL0746 Aluminium potassium sulfate dodecahydrate, reagent grade, ACS, Reag. Ph Eur**

assay (complexometric) . . . . . 98 - 102 %  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . max. 0,005 %  
 pH (10 %, H<sub>2</sub>O) . . . . . 3,0 - 3,5  
 chlorides (Cl) . . . . . max. 0,0005 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,005 %  
 arsenic (As) . . . . . max. 0,0002 %

cadmium (Cd) . . . . . max. 0,0005 %  
 copper (Cu) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0005 %  
 sodium (Na) . . . . . max. 0,005 %

Art. No.	Volume	Container
AL07460500	500 g	
AL07461000	1 kg	
AL0746005P	5 kg	
AL0746025P	25 kg	

# Alumin

## Aluminium sulfate 18-hydrate

### AL0855 Aluminium sulfate 18-hydrate, extra pure, Pharmpur®, Ph Eur, BP

- $\text{Al}_2(\text{SO}_4)_3 \cdot 18\text{H}_2\text{O}$
- M = 666,42 g/mol
- CAS [7784-31-8]
- EINECS-No.: 233-135-0
- Solub. in water: (20 °C): ~ 600 g/l
- Melting point: 92 °C
- LD 50 (oral, rat): 9000 mg/kg
- Tariff number: 2833 22 00 00
- Applications: manufacturing of lacquers, manufacture of dyes, in pesticide compositions, for water purifying, in pharma industry.

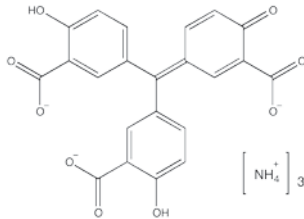
- Specifications:**  
 assay (complexometric,  $\text{Al}_2(\text{SO}_4)_3$ ) . . . . . 51 - 59 %  
 identification . . . . . passes test  
 appearance of solution . . . . . passes test  
 pH (2 %,  $\text{H}_2\text{O}$ ) . . . . . 2,5 - 4,0  
 alkali and alkaline earth metals . . . . . max. 0,4 %  
 ammonium ( $\text{NH}_4$ ) . . . . . max. 0,05 %  
 heavy metals (as Pb) . . . . . max. 0,005 %  
 iron (Fe) . . . . . max. 0,01 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AL08550500	500 g	Ⓟ
AL08551000	1 kg	Ⓟ
AL0855005P	5 kg	Ⓟ

## Aluminon

### AL0860 Aluminon, reagent for aluminium, reagent grade, ACS



- Synonyms: Aurin tricarboxylic acid ammonium salt, Ammonium aurin tricarboxylate
- $\text{C}_{22}\text{H}_{23}\text{N}_3\text{O}_9$
- M = 473,44 g/mol
- CAS [569-58-4]
- EINECS-No.: 209-319-1
- Solub. in water: (20 °C): ~ 800 g/l
- LD 50 (oral, rat): 9000 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H373 - H312 - H332
- GHS-P sentences: P260 - P261 - P280 - P322 - P304 + P340 - P501a
- Tariff number: 2918 90 90 90

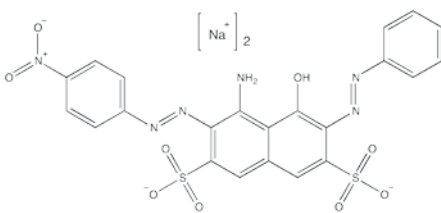
- Applications: manufacturing of lacquers, for the detection of: aluminium.

- Specifications:**  
 insoluble in water . . . . . max. 0,1 %  
 suitability for determination of Al . . . . . passes test  
 residue on ignition . . . . . max. 0,2 %  
 loss on drying (110 °C) . . . . . max. 10 %

Art. No.	Volume	Container
AL08600025	25 g	Ⓟ

## Amido black 10 B, C.I. 20470

### NE0025 Amido black 10 B, C.I. 20470



- Synonyms: Black acid 1, Naphthol blue black
- $\text{C}_{22}\text{H}_{11}\text{N}_3\text{Na}_2\text{O}_9\text{S}_2$
- M = 616,5 g/mol
- CAS [1064-48-8]
- EINECS-No.: 213-903-1
- Solub. in water: (20 °C): 30 g/l
- GHS-signal word: Danger
- GHS-H sentences: H224 - H301 - H330
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P310 - P320 - P405 - P501a
- Tariff number: 3204 12 00 00

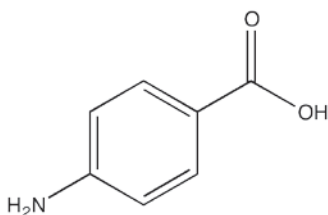
- Applications: analytical chemistry, indicator, chromatography, for electrophoresis.

- Specifications:**  
 Absorption maximum  $\lambda$  (in  $\text{H}_2\text{O}$ ) . . . . . 614 - 620 nm  
 Absorptivity ( $A_{1\%}^{1\text{cm}}$ ;  $\lambda$  max.) . . . . . 625 - 670  
 loss on drying (135 °C) . . . . . max. 10 %

Art. No.	Volume	Container
NE00250025	25 g	Ⓟ

## 4-Aminobenzoic acid

### AC0415 4-Aminobenzoic acid, synthesis grade



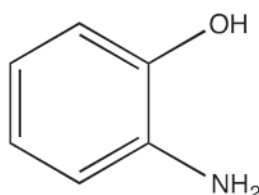
- Synonyms: p-Aminobenzoic acid, PABA
- $\text{C}_7\text{H}_7\text{NO}_2$
- M = 137,14 g/mol
- CAS [150-13-0]
- EINECS-No.: 205-753-0
- Solub. in water: (20 °C): 4,7 g/l
- Melting point: 186 - 189 °C
- LD 50 (oral, rat): > 6000 mg/kg
- Tariff number: 2922 49 95 90
- Applications: synthesis of organic products, manufacture of dyes.

- Specifications:**  
 assay (acidimetric) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 loss on drying (105 °C) . . . . . max. 0,2 %

Art. No.	Volume	Container
AC04150250	250 g	Ⓟ
AC04151000	1 kg	Ⓟ

## 2-Aminophenol

### AM0210 2-Aminophenol, technical grade



- Synonyms: 2-Amino-1-hydroxybenzene, 2-Hydroxy-aniline, o-Aminophenol
- $\text{C}_6\text{H}_7\text{NO}$
- M = 109,13 g/mol
- CAS [95-55-6]
- EINECS-No.: 202-431-1
- Solub. in water: (20 °C): 17 g/l
- Melting point: 172 -174 °C (sublimes)
- Vapour pressure: (153 °C) 14 hPa
- LD 50 (oral, rat): 1300 mg/kg
- EC-Index-No.: 612-033-00-3
- ADR: 6.1 T2 III UN 2512
- IMDG: 6.1 III UN 2512
- IATA/ICAO: 6.1 III UN 2512
- GHS-signal word: Warning

- GHS-H sentences: H341 - H302 - H332
- GHS-P sentences: P261 - P281 - P301 + P312 - P304 + P340 - P405 - P501a
- Tariff number: 2922 29 00 90
- Applications: synthesis of organic products, manufacture of dyes, in the textile industry.

- Specifications:**  
 assay (titration with  $\text{HClO}_4$ ) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test

Art. No.	Volume	Container
AM02100100	100 g	Ⓟ



## Ammonia, solution 32%

## AM0251 Ammonia, solution 32% w/w, extra pure



- Synonyms: Ammonia water, Ammonium hydroxide solution
- NH<sub>3</sub>
- M = 17,03 g/mol
- CAS [1336-21-6]
- EINECS-No.: 215-647-6
- Density: 0,89 g/cm<sup>3</sup>
- Melting point: -91,5 °C
- Boiling point: 24,7 °C
- Vapour pressure: (20 °C) ~ 837 hPa
- LD 50 (oral, rat): 350 mg/kg
- EC-Index-No.: 007-001-01-2
- ADR: 8 C5 III UN 2672
- IMDG: 8 III UN 2672
- IATA/ICAO: 8 III UN 2672

- GHS-signal word: Danger
- GHS-H sentences: H314 - H400 - H335
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2814 20 00 00
- Applications: analytical chemistry, laboratory reagent, for ammonium salts synthesizing.

## Specifications:

- assay (acidimetric, NH<sub>3</sub>) . . . . .min. 30 %
- carbonates (as CO<sub>2</sub>) . . . . .max. 0,005 %
- chlorides (Cl) . . . . .max. 0,0005 %
- phosphates (as PO<sub>4</sub>) . . . . .max. 0,0005 %
- sulfates (SO<sub>4</sub>) . . . . .max. 0,001 %
- calcium (Ca) . . . . .max. 0,001 %

- copper (Cu) . . . . .max. 0,00005 %
- iron (Fe) . . . . .max. 0,0001 %
- lead (Pb) . . . . .max. 0,0001 %
- magnesium (Mg) . . . . .max. 0,001 %
- nickel (Ni) . . . . .max. 0,0001 %
- zinc (Zn) . . . . .max. 0,0001 %
- sulphur compounds (as SO<sub>2</sub>) . . . . .max. 0,001 %
- substances reducing KMnO<sub>4</sub> . . . . .passes test
- residue on ignition (as SO<sub>4</sub>) . . . . .max. 0,002 %

Art. No.	Volume	Container
AM02511000	1l	0
AM02512500	2,5l	0

## Ammonia, solution 28%

## AM0256 Ammonia, solution 28% w/w, reagent grade, Pharmpur®, Ph Eur



- Synonyms: Ammonia water
- NH<sub>3</sub>
- M = 17,03 g/mol
- CAS [1336-21-6]
- EINECS-No.: 215-647-6
- Density: ~ 0,90 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ -63 °C
- Boiling point: 36 °C
- Vapour pressure: (20 °C) 535 hPa
- LD 50 (oral, rat): 350 mg/kg
- EC-Index-No.: 007-001-01-2
- ADR: 8 C5 III UN 2672
- IMDG: 8 III UN 2672
- IATA/ICAO: 8 III UN 2672
- GHS-signal word: Danger
- GHS-H sentences: H314 - H400 - H335
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2814 20 00 00
- Applications: analytical chemistry, laboratory reagent, for ammonium salts synthesizing, in pharma industry.

## Specifications:

- assay (acidimetric, NH<sub>3</sub>) . . . . .min. 28 %

- identity . . . . .passes test
- appearance . . . . .passes test
- colour (Hazen) . . . . .max. 10
- carbonates (as CO<sub>2</sub>) . . . . .max. 0,001 %
- chlorides (Cl) . . . . .max. 0,00003 %
- nitrates (NO<sub>3</sub>) . . . . .max. 0,0002 %
- phosphates (as PO<sub>4</sub>) . . . . .max. 0,00005 %
- silicates (SiO<sub>2</sub>) . . . . .max. 0,0005 %
- sulfates (SO<sub>4</sub>) . . . . .max. 0,0002 %
- sulfides (S) . . . . .max. 0,00002 %
- aluminium (Al) . . . . .max. 0,00005 %
- barium (Ba) . . . . .max. 0,000005 %
- bismuth (Bi) . . . . .max. 0,00001 %
- cadmium (Cd) . . . . .max. 0,000005 %
- calcium (Ca) . . . . .max. 0,00005 %
- chromium (Cr) . . . . .max. 0,000005 %
- cobalt (Co) . . . . .max. 0,000005 %
- copper (Cu) . . . . .max. 0,00001 %
- gallium (Ga) . . . . .max. 0,000002 %
- gold (Au) . . . . .max. 0,00001 %
- heavy metals (as Pb) . . . . .max. 0,00005 %
- indium (In) . . . . .max. 0,000002 %
- iron (Fe) . . . . .max. 0,00001 %
- lead (Pb) . . . . .max. 0,000005 %
- lithium (Li) . . . . .max. 0,000002 %

- magnesium (Mg) . . . . .max. 0,00001 %
- manganese (Mn) . . . . .max. 0,000005 %
- molybdenum (Mo) . . . . .max. 0,000005 %
- nickel (Ni) . . . . .max. 0,000005 %
- platinum (Pt) . . . . .max. 0,00001 %
- potassium (K) . . . . .max. 0,00005 %
- silver (Ag) . . . . .max. 0,000002 %
- sodium (Na) . . . . .max. 0,00005 %
- strontium (Sr) . . . . .max. 0,00001 %
- thallium (Tl) . . . . .max. 0,000005 %
- tin (Sn) . . . . .max. 0,00001 %
- titanium (Ti) . . . . .max. 0,00001 %
- zinc (Zn) . . . . .max. 0,00001 %
- pyridine and related substances . . . . .max. 0,0002 %
- oxidisable substances . . . . .passes test
- residue on evaporation . . . . .max. 0,001 %
- Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AM02561000	1l	0
AM02562500	2,5l	0
AM0256005P	5l	0

## Ammonia, solution 25%

- Synonyms: Ammonia water, Ammonium hydroxide solution
- NH<sub>3</sub>
- M = 17,03 g/mol
- CAS [1336-21-6]
- EINECS-No.: 215-647-6
- Density: 0,90 g/cm<sup>3</sup>

- Melting point: -57,5 °C
- Boiling point: 37,7 °C
- Vapour pressure: (20 °C) ~ 500 hPa
- LD 50 (oral, rat): 350 mg/kg
- EC-Index-No.: 007-001-01-2
- ADR: 8 C5 III UN 2672
- IMDG: 8 III UN 2672

- IATA/ICAO: 8 III UN 2672
- GHS-signal word: Danger
- GHS-H sentences: H314 - H400 - H335
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2814 20 00 00
- Applications: analytical chemistry, laboratory reagent.

## AM0257 Ammonia, solution 25% w/w, synthesis grade



- assay (acidimetric, NH<sub>3</sub>) . . . . .min. 25 %
- density (20°/4°) . . . . .0,892 - 0,910
- residue on evaporation . . . . .max. 0,01 %

Art. No.	Volume	Container
AM02571000	1l	0
AM0257005P	5l	0

## AM0250 Ammonia, solution 25% w/w, extra pure, Pharmpur®, Ph Eur



- assay (acidimetric, NH<sub>3</sub>) . . . . .25 - 30 %
- identification . . . . .passes test
- density (20°/4°) . . . . .0,892 - 0,910
- appearance of solution . . . . .clear and colourless
- carbonates (as CO<sub>2</sub>) . . . . .max. 0,006 %
- chlorides (Cl) . . . . .max. 0,0001 %
- sulfates (SO<sub>4</sub>) . . . . .max. 0,0005 %
- heavy metals (as Pb) . . . . .max. 0,0001 %

- iron (Fe) . . . . .max. 0,000025 %
- substances reducing KMnO<sub>4</sub> . . . . .passes test
- pyridine and related substances . . . . .max. 0,0002 %
- residue on evaporation . . . . .max. 0,002 %
- Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AM02501000	1l	0
AM02502500	2,5l	0
AM0250005P	5l	0

# Ammoni

## AM0249 Ammonia, solution 25% w/w, reagent grade, Reag. Ph Eur



assay (acidimetric, NH <sub>3</sub> ) . . . . .	.25 - 30 %	copper (Cu) . . . . .	.max. 0,00001 %
density (20°/4°) . . . . .	0,892 - 0,910	gallium (Ga) . . . . .	.max. 0,000002 %
appearance of solution . . . . .	clear and colourless	gold (Au) . . . . .	.max. 0,00001 %
colour (Hazen) . . . . .	max. 10	heavy metals (as Pb) . . . . .	.max. 0,0001 %
carbonates (as CO <sub>2</sub> ) . . . . .	.max. 0,001 %	indium (In) . . . . .	.max. 0,000002 %
chlorides (Cl) . . . . .	.max. 0,00005 %	iron (Fe) . . . . .	.max. 0,00001 %
phosphates (as PO <sub>4</sub> ) . . . . .	.max. 0,00005 %	lead (Pb) . . . . .	.max. 0,000005 %
sulfates (SO <sub>4</sub> ) . . . . .	.max. 0,0002 %	lithium (Li) . . . . .	.max. 0,000002 %
sulfides (S) . . . . .	.max. 0,00002 %	magnesium (Mg) . . . . .	.max. 0,00001 %
aluminium (Al) . . . . .	.max. 0,00005 %	manganese (Mn) . . . . .	.max. 0,000005 %
barium (Ba) . . . . .	.max. 0,000005 %	molybdenum (Mo) . . . . .	.max. 0,000005 %
bismuth (Bi) . . . . .	.max. 0,00001 %	nickel (Ni) . . . . .	.max. 0,000005 %
cadmium (Cd) . . . . .	.max. 0,000005 %	platinum (Pt) . . . . .	.max. 0,00001 %
calcium (Ca) . . . . .	.max. 0,00005 %	potassium (K) . . . . .	.max. 0,00005 %
chromium (Cr) . . . . .	.max. 0,000005 %	silver (Ag) . . . . .	.max. 0,000002 %
cobalt (Co) . . . . .	.max. 0,000005 %	sodium (Na) . . . . .	.max. 0,00005 %

strontium (Sr) . . . . .	.max. 0,00001 %
thallium (Tl) . . . . .	.max. 0,000005 %
tin (Sn) . . . . .	.max. 0,00001 %
titanium (Ti) . . . . .	.max. 0,00001 %
zinc (Zn) . . . . .	.max. 0,00001 %
pyridine and related substances . . . . .	.max. 0,0002 %
substances reducing KMnO <sub>4</sub> . . . . .	.passes test
residue on evaporation . . . . .	.max. 0,001 %

Art. No.	Volume	Container
AM02491000	1 l	0
AM02492500	2,5 l	0

## AM0258 Ammonia, solution 25%, eluent additive for LC-MS



assay (acidimetric, NH <sub>3</sub> ) . . . . .	.min. 25 %	lead (Pb) . . . . .	.max. 0,000005 %
aluminium (Al) . . . . .	.max. 0,000005 %	lithium (Li) . . . . .	.max. 0,000005 %
barium (Ba) . . . . .	.max. 0,000005 %	magnesium (Mg) . . . . .	.max. 0,000005 %
cadmium (Cd) . . . . .	.max. 0,000005 %	manganese (Mn) . . . . .	.max. 0,000005 %
calcium (Ca) . . . . .	.max. 0,000005 %	molybdenum (Mo) . . . . .	.max. 0,000005 %
chromium (Cr) . . . . .	.max. 0,000005 %	nickel (Ni) . . . . .	.max. 0,000005 %
cobalt (Co) . . . . .	.max. 0,000005 %	potassium (K) . . . . .	.max. 0,000005 %
copper (Cu) . . . . .	.max. 0,000005 %	silver (Ag) . . . . .	.max. 0,000005 %
iron (Fe) . . . . .	.max. 0,000005 %	sodium (Na) . . . . .	.max. 0,000005 %

strontium (Sr) . . . . .	.max. 0,000005 %
thallium (Tl) . . . . .	.max. 0,000005 %
zinc (Zn) . . . . .	.max. 0,000005 %
suitability for use in LC-MS . . . . .	.passes test

Art. No.	Volume	Container
AM02580100	100 ml	0

## Ammonia, solution 20%

- Synonyms: Ammonia water
- NH<sub>3</sub>
- M = 17,03 g/mol
- CAS [1336-21-6]
- EINECS-No.: 215-647-6
- Density: ~ 0,93 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible

- EC-Index-No.: 007-001-01-2
- ADR: 8 C5 III UN 2672
- IMDG: 8 III UN 2672
- IATA/ICAO: 8 III UN 2672
- GHS-signal word: Danger
- GHS-H sentences: H314 - H335

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2814 20 00 00
- Applications: analytical chemistry, laboratory reagent, detergent, bleaching agent, reagent for saponification reactions.

## AM0247 Ammonia, solution 20% w/w, extra pure



assay (acidimetric, NH <sub>3</sub> ) . . . . .	.min. 20 %	iron (Fe) . . . . .	.max. 0,0001 %
density (20°/4°) . . . . .	0,917 - 0,923	lead (Pb) . . . . .	.max. 0,0001 %
carbonates (as CO <sub>2</sub> ) . . . . .	.max. 0,005 %	magnesium (Mg) . . . . .	.max. 0,001 %
chlorides (Cl) . . . . .	.max. 0,0005 %	nickel (Ni) . . . . .	.max. 0,0001 %
phosphates (as PO <sub>4</sub> ) . . . . .	.max. 0,0005 %	zinc (Zn) . . . . .	.max. 0,0001 %
calcium (Ca) . . . . .	.max. 0,001 %	sulphur compounds (as SO <sub>4</sub> ) . . . . .	.max. 0,001 %
copper (Cu) . . . . .	.max. 0,0001 %	residue on evaporation . . . . .	.max. 0,002 %

Art. No.	Volume	Container
AM02471000	1 l	0
AM02472500	2,5 l	0

## AM0248 Ammonia, solution 20% w/w, reagent grade



assay (acidimetric, NH <sub>3</sub> ) . . . . .	.min. 20 %	gallium (Ga) . . . . .	.max. 0,000002 %
colour (Hazen) . . . . .	max. 10	gold (Au) . . . . .	.max. 0,00001 %
carbonates (as CO <sub>2</sub> ) . . . . .	.max. 0,001 %	indium (In) . . . . .	.max. 0,000002 %
chlorides (Cl) . . . . .	.max. 0,00005 %	iron (Fe) . . . . .	.max. 0,00001 %
phosphates (as PO <sub>4</sub> ) . . . . .	.max. 0,00005 %	lead (Pb) . . . . .	.max. 0,000005 %
sulfates (SO <sub>4</sub> ) . . . . .	.max. 0,0002 %	lithium (Li) . . . . .	.max. 0,000002 %
sulfides (S) . . . . .	.max. 0,00002 %	magnesium (Mg) . . . . .	.max. 0,00001 %
aluminium (Al) . . . . .	.max. 0,00005 %	manganese (Mn) . . . . .	.max. 0,000005 %
barium (Ba) . . . . .	.max. 0,000005 %	molybdenum (Mo) . . . . .	.max. 0,000005 %
bismuth (Bi) . . . . .	.max. 0,00001 %	nickel (Ni) . . . . .	.max. 0,000005 %
cadmium (Cd) . . . . .	.max. 0,000005 %	platinum (Pt) . . . . .	.max. 0,00001 %
calcium (Ca) . . . . .	.max. 0,00005 %	potassium (K) . . . . .	.max. 0,00005 %
chromium (Cr) . . . . .	.max. 0,000005 %	silver (Ag) . . . . .	.max. 0,000002 %
cobalt (Co) . . . . .	.max. 0,000005 %	sodium (Na) . . . . .	.max. 0,00005 %
copper (Cu) . . . . .	.max. 0,00001 %	strontium (Sr) . . . . .	.max. 0,00001 %

thallium (Tl) . . . . .	.max. 0,000005 %
tin (Sn) . . . . .	.max. 0,00001 %
titanium (Ti) . . . . .	.max. 0,00001 %
zinc (Zn) . . . . .	.max. 0,00001 %
pyridine and related substances . . . . .	.max. 0,0002 %
substances reducing KMnO <sub>4</sub> . . . . .	.max. 0,0005 %
residue on evaporation . . . . .	.max. 0,001 %

Art. No.	Volume	Container
AM02481000	1 l	0
AM02482500	2,5 l	0
AM0248005P	5 l	0

## AM0269 Ammonia, solution 20 - 22%, ppb-trace analysis grade, Ultratrace®



assay (acidimetric, NH <sub>3</sub> )	20 - 22 %
colour (Hazen)	max. 10
chlorides (Cl)	max. 0,00005 %
phosphates (as PO <sub>4</sub> )	max. 0,00001 %
sulfates (SO <sub>4</sub> )	max. 0,0001 %
aluminium (Al)	max. 1 ppb
antimony (Sb)	max. 0,5 ppb
arsenic (As)	max. 1 ppb
barium (Ba)	max. 0,1 ppb
beryllium (Be)	max. 0,1 ppb
bismuth (Bi)	max. 0,1 ppb
cadmium (Cd)	max. 0,5 ppb
calcium (Ca)	max. 1 ppb
cerium (Ce)	max. 0,1 ppb
cesium (Cs)	max. 0,1 ppb
chromium (Cr)	max. 0,5 ppb
cobalt (Co)	max. 0,5 ppb
copper (Cu)	max. 0,5 ppb
dysprosium (Dy)	max. 0,1 ppb
erbium (Er)	max. 0,1 ppb
europium (Eu)	max. 0,1 ppb
gadolinium (Gd)	max. 0,1 ppb
gallium (Ga)	max. 0,1 ppb

germanium (Ge)	max. 0,1 ppb
gold (Au)	max. 0,5 ppb
holmium (Ho)	max. 0,1 ppb
indium (In)	max. 0,1 ppb
iron (Fe)	max. 1 ppb
lanthanum (La)	max. 0,1 ppb
lead (Pb)	max. 0,1 ppb
lithium (Li)	max. 0,1 ppb
lutetium (Lu)	max. 0,1 ppb
magnesium (Mg)	max. 1 ppb
manganese (Mn)	max. 0,5 ppb
mercury (Hg)	max. 0,2 ppb
molybdenum (Mo)	max. 0,5 ppb
neodymium (Nd)	max. 0,1 ppb
nickel (Ni)	max. 0,5 ppb
niobium (Nb)	max. 0,1 ppb
potassium (K)	max. 1 ppb
praseodymium (Pr)	max. 0,1 ppb
rhodium (Rh)	max. 0,5 ppb
rubidium (Rb)	max. 0,1 ppb
samarium (Sm)	max. 0,1 ppb
scandium (Sc)	max. 0,1 ppb
selenium (Se)	max. 1 ppb

silver (Ag)	max. 0,5 ppb
sodium (Na)	max. 1 ppb
strontium (Sr)	max. 0,1 ppb
tellurium (Te)	max. 0,1 ppb
terbium (Tb)	max. 0,1 ppb
thallium (Tl)	max. 0,1 ppb
thorium (Th)	max. 0,1 ppb
thulium (Tm)	max. 0,1 ppb
tin (Sn)	max. 0,5 ppb
titanium (Ti)	max. 0,5 ppb
tungsten (W)	max. 0,1 ppb
uranium (U)	max. 0,1 ppb
vanadium (V)	max. 0,5 ppb
ytterbium (Yb)	max. 0,1 ppb
yttrium (Y)	max. 0,1 ppb
zinc (Zn)	max. 0,5 ppb
zirconium (Zr)	max. 0,1 ppb

Art. No.	Volume	Container
AM02690500	500 ml	P

## AM0272 Ammonia, solution 20 - 22%, ppt-trace analysis grade, Ultratrace®



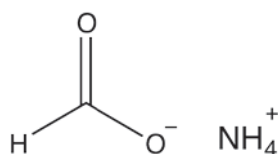
assay (acidimetric, NH <sub>3</sub> )	20 - 22 %
aluminium (Al)	max. 20 ppt
antimony (Sb)	max. 10 ppt
arsenic (As)	max. 10 ppt
barium (Ba)	max. 10 ppt
beryllium (Be)	max. 10 ppt
bismuth (Bi)	max. 10 ppt
cadmium (Cd)	max. 10 ppt
cerium (Ce)	max. 10 ppt
cesium (Cs)	max. 10 ppt
chromium (Cr)	max. 10 ppt
cobalt (Co)	max. 10 ppt
copper (Cu)	max. 10 ppt
dysprosium (Dy)	max. 10 ppt
erbium (Er)	max. 10 ppt
europium (Eu)	max. 10 ppt
gadolinium (Gd)	max. 10 ppt
gallium (Ga)	max. 10 ppt
germanium (Ge)	max. 10 ppt
gold (Au)	max. 10 ppt

holmium (Ho)	max. 10 ppt
indium (In)	max. 10 ppt
iron (Fe)	max. 10 ppt
lanthanum (La)	max. 10 ppt
lead (Pb)	max. 10 ppt
lithium (Li)	max. 10 ppt
lutetium (Lu)	max. 10 ppt
magnesium (Mg)	max. 10 ppt
manganese (Mn)	max. 10 ppt
mercury (Hg)	max. 200 ppb
molybdenum (Mo)	max. 10 ppt
neodymium (Nd)	max. 10 ppt
nickel (Ni)	max. 10 ppt
niobium (Nb)	max. 10 ppt
potassium (K)	max. 10 ppt
praseodymium (Pr)	max. 10 ppt
rhodium (Rh)	max. 10 ppt
rubidium (Rb)	max. 10 ppt
samarium (Sm)	max. 10 ppt
scandium (Sc)	max. 10 ppt

silver (Ag)	max. 10 ppt
sodium (Na)	max. 20 ppt
strontium (Sr)	max. 10 ppt
tellurium (Te)	max. 10 ppt
terbium (Tb)	max. 10 ppt
thallium (Tl)	max. 10 ppt
thorium (Th)	max. 10 ppt
thulium (Tm)	max. 10 ppt
tin (Sn)	max. 10 ppt
titanium (Ti)	max. 10 ppt
tungsten (W)	max. 10 ppt
uranium (U)	max. 10 ppt
vanadium (V)	max. 10 ppt
ytterbium (Yb)	max. 10 ppt
yttrium (Y)	max. 10 ppt
zinc (Zn)	max. 10 ppt
zirconium (Zr)	max. 10 ppt

Art. No.	Volume	Container
AM02720250	250 ml	P

## Ammonium acetate



- Synonyms: Acetic acid ammonium salt
- CH<sub>3</sub>COONH<sub>4</sub>
- M = 77,08 g/mol
- CAS [631-61-8]
- EINECS-No.: 211-162-9
- Solub. in water: (20 °C): soluble
- Melting point: 114 °C
- Flash pt. 136 °C
- Tariff number: 2915 29 00 90

- Applications: analytical chemistry, for the detection of: metals.

## AM0253 Ammonium acetate, extra pure

assay (acidimetric)	min. 96 %
insoluble in water	max. 0,01 %
pH (5 %, H <sub>2</sub> O)	6,0 - 7,5
chlorides (Cl)	max. 0,002 %
nitrates (NO <sub>3</sub> )	max. 0,003 %
phosphates (as PO <sub>4</sub> )	max. 0,001 %
sulfates (SO <sub>4</sub> )	max. 0,01 %

copper (Cu)	max. 0,002 %
heavy metals (as Pb)	max. 0,0005 %
iron (Fe)	max. 0,001 %
lead (Pb)	max. 0,002 %
nickel (Ni)	max. 0,002 %
residue on ignition (as SO <sub>3</sub> )	max. 0,02 %
water (K.F.)	max. 2,5 %

Art. No.	Volume	Container
AM02530500	500 g	P
AM02531000	1 kg	P
AM0253005P	5 kg	P

## AM0254 Ammonium acetate, reagent grade, ACS, Reag. Ph Eur

assay (acidimetric)	min. 98 %
insoluble in water	max. 0,005 %
pH (5 %, H <sub>2</sub> O)	6,7 - 7,3
chlorides (Cl)	max. 0,0005 %
nitrates (NO <sub>3</sub> )	max. 0,001 %
sulfates (SO <sub>4</sub> )	max. 0,001 %

calcium (Ca)	max. 0,001 %
heavy metals (as Pb)	max. 0,0002 %
iron (Fe)	max. 0,0002 %
substances reducing KMnO <sub>4</sub>	passes test
residue on ignition (as SO <sub>3</sub> )	max. 0,01 %
water (K.F.)	max. 2 %

Art. No.	Volume	Container
AM02540500	500 g	P
AM02541000	1 kg	P
AM0254005P	5 kg	P
AM0254025P	25 kg	P

# Ammoni

## AM0255 Ammonium acetate, HPLC grade

assay (acidimetric) .....min. 98 %  
 identity (IR-spectrum) .....passes test  
 insoluble matter .....passes test  
 pH (5 %, H<sub>2</sub>O) .....6,5 - 7,5  
 chlorides (Cl) .....max. 0,0005 %  
 iron (Fe) .....max. 0,0001 %

heavy metals (as Pb) .....max. 0,0001 %  
 max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength: .....absorbance:  
 250 nm. ....0,05 AU  
 260 nm. ....0,04 AU  
 270 nm. ....0,03 AU

280 nm. ....0,02 AU

Art. No.	Volume	Container
AM02550250	250 g	Ⓟ
AM02551000	1 kg	Ⓟ

## AM0259 Ammonium acetate, eluent additive for LC-MS

assay (acidimetric) .....min. 99 %  
 aluminium (Al) .....max. 0,0001 %  
 barium (Ba) .....max. 0,0001 %  
 cadmium (Cd) .....max. 0,0001 %  
 calcium (Ca) .....max. 0,001 %  
 chromium (Cr) .....max. 0,0001 %  
 cobalt (Co) .....max. 0,0001 %  
 copper (Cu) .....max. 0,0001 %

iron (Fe) .....max. 0,0001 %  
 lead (Pb) .....max. 0,0001 %  
 lithium (Li) .....max. 0,0001 %  
 magnesium (Mg) .....max. 0,0001 %  
 manganese (Mn) .....max. 0,0001 %  
 molybdenum (Mo) .....max. 0,0001 %  
 nickel (Ni) .....max. 0,0001 %  
 potassium (K) .....max. 0,005 %

sodium (Na) .....max. 0,005 %  
 strontium (Sr) .....max. 0,0001 %  
 zinc (Zn) .....max. 0,0001 %  
 suitability for use in LC-MS .....passes test

Art. No.	Volume	Container
AM02590050	50 g	Ⓟ

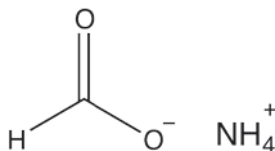
## AM0271 Ammonium acetate, molecular biology grade

assay (acidimetric) .....min. 98 %  
 pH (5 %, H<sub>2</sub>O) .....6,5 - 7,3  
 heavy metals (as Pb) .....max. 0,0002 %  
 DNases, RNases, Proteases .....non detected

Art. No.	Volume	Container
AM02710250	250 g	Ⓟ
AM02710500	500 g	Ⓟ

## Ammonium acetate, solutions

### AM0230 Ammonium acetate, solution 1 mol/l, buffered at pH = 7



- CH<sub>3</sub>COONH<sub>4</sub>
- M = 77,08 g/mol
- CAS [631-61-8]
- EINECS-No.: 211-162-9
- Tariff number: 2915 29 00 90
- Applications: analytical chemistry, laboratory reagent, in buffer solutions.

#### Specifications:

1 ml = 0,07708 g NH<sub>4</sub>CH<sub>3</sub>COO  
 potassium (K) .....max. 0,001 %

Art. No.	Volume	Container
AM02301000	1 l	Ⓟ
AM0230010C	10 l	Ⓟ

### AM0262 Ammonium acetate, solution 10 mmol/l in water, buffered at pH = 7, LC-MS

- Tariff number: 2915 29 00 90
- Applications: analytical chemistry, chromatography.

#### Specifications:

ammonium acetate content (mmol/l) .....9,5 - 10,5  
 pH (20 °C) .....6,95 - 7,05  
 aluminium (Al) .....max. 0,000005 %

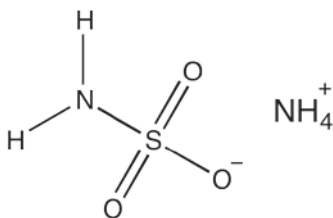
calcium (Ca) .....max. 0,000005 %  
 iron (Fe) .....max. 0,000005 %  
 magnesium (Mg) .....max. 0,000005 %  
 potassium (K) .....max. 0,000005 %  
 sodium (Na) .....max. 0,000005 %  
 suitability for use in LC-MS .....passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at

wavelength: T(%) A (AU)  
 254 nm. ....96 % 0,018 AU  
 280 nm. ....98 % 0,009 AU

Art. No.	Volume	Container
AM02621000	1 l	Ⓟ

## Ammonium amidosulfonate

### AM0395 Ammonium amidosulfonate, reagent grade, ACS, for determination of sulfonamides in blood



- Synonyms: Ammonium sulfamate, Amidosulfonic acid ammonium salt, Sulfanic acid ammonium salt
- NH<sub>2</sub>NH<sub>2</sub>SO<sub>3</sub>
- M = 114,12 g/mol
- CAS [7773-06-0]
- EINECS-No.: 231-871-7
- Solub. in water: (20 °C): soluble
- Melting point: ~ 133 °C
- LD 50 (oral, rat): 3900 mg/kg
- Tariff number: 2842 90 90 00
- Applications: analytical chemistry, for the determination of sulfamides in blood.

melting point .....132 - 134 °C  
 chlorides (Cl) .....max. 0,001 %  
 nitrates (NO<sub>3</sub>) .....max. 0,002 %  
 sulfates (SO<sub>4</sub>) .....max. 0,02 %  
 heavy metals (as Pb) .....max. 0,0005 %  
 iron (Fe) .....max. 0,0005 %  
 residue on ignition (as SO<sub>4</sub>) .....max. 0,05 %  
 loss on drying (105 °C) .....max. 0,5 %

Art. No.	Volume	Container
AM03950100	100 g	Ⓟ

#### Specifications:

assay (acidimetric) .....min. 99 %  
 insoluble in water .....max. 0,02 %

## Ammonium bromide

- NH<sub>4</sub>Br
- M = 97,94 g/mol
- CAS [12124-97-9]
- EINECS-No.: 235-183-8

- Solub. in water: (20 °C): 598 g/l
- Melting point: 542 °C
- LD 50 (oral, rat): 2714 mg/kg
- Tariff number: 2827 59 00 00

- Applications: analytical chemistry, photography, in pharma industry.

**AM0265 Ammonium bromide, extra pure, Pharmpur®, Ph Eur, BP**

assay (argentometric, on dried sample) . . . . . 98,5 - 101 %  
 identification . . . . . passes test  
 acidity or alkalinity . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 bromates (BrO<sub>3</sub>) . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,6 %  
 iodides (I) . . . . . passes test

sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,002 %  
 magnesium and alkaline-earth metals, (as Ca) . . . . . max. 0,02 %  
 residue on ignition . . . . . max. 0,1 %  
 loss on drying (105 °C) . . . . . max. 1 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AM02650500	500 g	P
AM02651000	1 kg	P
AM0265005P	5 kg	P

**AM0266 Ammonium bromide, reagent grade, ACS**

assay (argentometric) . . . . . min. 99 %  
 insoluble in water . . . . . max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 4,5 - 6,0  
 bromates (BrO<sub>3</sub>) . . . . . max. 0,002 %  
 chlorides (Cl) . . . . . max. 0,2 %  
 iodides (I) . . . . . passes test  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
 sulfides (S) . . . . . max. 0,0002 %

arsenic (As) . . . . . max. 0,0002 %  
 barium (Ba) . . . . . max. 0,002 %  
 calcium (Ca) . . . . . max. 0,01 %  
 copper (Cu) . . . . . max. 0,0003 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 magnesium (Mg) . . . . . max. 0,002 %  
 substances reducing KMnO<sub>4</sub> . . . . . passes test

residue on ignition . . . . . max. 0,01 %  
 loss on drying (105 °C) . . . . . max. 0,1 %

Art. No.	Volume	Container
AM02660500	500 g	P
AM02661000	1 kg	P

**Ammonium carbonate**

- Synonyms: Salt of hartshorn
- NH<sub>4</sub>HCO<sub>3</sub> + NH<sub>4</sub>NH<sub>2</sub>COO
- CAS [10361-29-2]
- EINECS-No.: 233-786-0
- Solub. in water: (20 °C): soluble

- Melting point: 58 °C (decomposes)
- LD 50 (oral, rat): 1975 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302

- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2836 10 00 00
- Applications: manufacture of dyes, in the rubber industry, analytical chemistry.

**AM0268 Ammonium carbonate, reagent grade, ACS**

assay (acidimetric, NH<sub>3</sub>) . . . . . min. 30 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . max. 0,005 %  
 chlorides (Cl) . . . . . max. 0,0005 %  
 arsenic (As) . . . . . max. 0,0003 %  
 calcium (Ca) . . . . . max. 0,01 %

copper (Cu) . . . . . max. 0,0025 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,001 %  
 zinc (Zn) . . . . . max. 0,0025 %  
 sulphur compounds (as SO<sub>4</sub>) . . . . . max. 0,002 %  
 residue on ignition . . . . . max. 0,05 %

Art. No.	Volume	Container
AM02680500	500 g	P
AM02681000	1 kg	P

**AM0267 Ammonium carbonate, HPLC grade**

assay (acidimetric, NH<sub>3</sub>) . . . . . min. 30 %  
 identity (IR-spectrum) . . . . . passes test  
 insoluble matter . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,0005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
 arsenic (As) . . . . . max. 0,0003 %  
 copper (Cu) . . . . . max. 0,0025 %

heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,001 %  
 max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength: . . . . . absorbance:  
 240 nm . . . . . 0,1 AU  
 250 nm . . . . . 0,04 AU

260 nm . . . . . 0,02 AU  
 280 nm . . . . . 0,01 AU

Art. No.	Volume	Container
AM02670250	250 g	O

**Ammonium cerium(IV) nitrate****CE0050 Ammonium cerium(IV) nitrate, synthesis grade**

- Synonyms: di-Ammonium hexanitratocerate (IV), Ceric ammonium nitrate
- (NH<sub>4</sub>)<sub>2</sub>[Ce(NO<sub>3</sub>)<sub>6</sub>]
- M = 548,23 g/mol
- CAS [16774-21-3]
- EINECS-No.: 240-827-6
- Solub. in water: (20 °C): soluble
- Melting point: ~ 108 °C
- ADR: 5.1 O2 II UN 1477
- IMDG: 5.1 II UN 1477

- IATA/ICAO: 5.1 II UN 1477
- GHS-signal word: Danger
- GHS-H sentences: H272 - H318
- GHS-P sentences: P221 - P210 - P220 - P305 + P351 + P338 - P310 - P501a
- Tariff number: 2846 10 00 90
- Applications: analytical chemistry, titrant in volumetric analysis.
- Appearance: Orange crystals

**Specifications:**

assay (oxidimetric) . . . . . min. 99 %

Art. No.	Volume	Container
CE00500100	100 g	P
CE00500500	500 g	P
CE00501000	1 kg	P

**Ammonium cerium(IV) sulfate dihydrate****CE0060 Ammonium cerium(IV) sulfate dihydrate, synthesis grade**

- Synonyms: Ceric ammonium sulfate, tetra-Ammonium-tetrasulfatocerate (IV)
- (NH<sub>4</sub>)<sub>4</sub>[Ce(SO<sub>4</sub>)<sub>4</sub>]·2H<sub>2</sub>O
- M = 632,56 g/mol
- CAS [10378-47-9]
- EINECS-No.: 231-567-4

- Solub. in water: (20 °C): hydrolysis reaction
- Tariff number: 2846 10 00 90
- Applications: for the synthesis of: inorganic salts, for determination of: cerium.

**Specifications:**

assay (oxidimetric) . . . . . min. 95 %

Art. No.	Volume	Container
CE00600100	100 g	P

**Ammonium chloride**

- Synonyms: Salt ammoniac
- NH<sub>4</sub>Cl
- M = 53,49 g/mol
- CAS [12125-02-9]
- EINECS-No.: 235-186-4
- Solub. in water: (20 °C): 372 g/l




- Melting point: 335 °C (decomposes)
- Ignition temp.: > 400 °C
- Vapour pressure: (30 °C) 1,3 hPa
- LD 50 (oral, rat): 1440 mg/kg
- EC-Index-No.: 017-014-00-8
- GHS-signal word: Warning

- GHS-H sentences: H302 - H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P301 + P312 - P337 + P313 - P501a
- Tariff number: 2827 10 00 00
- Applications: manufacture of dyes, in explosive compositions, analytical chemistry.

# Ammoni

## AM0270 Ammonium chloride, extra pure, Pharpur®, Ph Eur, BP, USP





assay (argentometric, on dried sample) . . . . .	99,5 - 100,5 %	limit of thiocyanate . . . . .	. . . . . passes test
identification . . . . .	. . . . . passes test	calcium (Ca) . . . . .	. . . . . max. 0,02 %
acidity or alkalinity . . . . .	. . . . . passes test	heavy metals (as Pb) . . . . .	. . . . . max. 0,001 %
appearance of solution . . . . .	clear and colourless	iron (Fe) . . . . .	. . . . . max. 0,002 %
pH (5 %, H <sub>2</sub> O) . . . . .	4,6 - 6,0	residue on ignition (as SO <sub>4</sub> ) . . . . .	. . . . . max. 0,1 %
bromides and iodides . . . . .	. . . . . passes test	loss on drying (105 °C) . . . . .	. . . . . max. 0,5 %
sulfates (SO <sub>4</sub> ) . . . . .	. . . . . max. 0,015 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
AM02700500	500 g	
AM02701000	1 kg	
AM0270005P	5 kg	

## AM0273 Ammonium chloride, reagent grade, ACS, ISO, Reag. Ph Eur

assay (argentometric) . . . . .	min. 99,5 %	copper (Cu) . . . . .	. . . . . max. 0,0002 %
appearance of solution . . . . .	. . . . . passes test	heavy metals (as Pb) . . . . .	. . . . . max. 0,0005 %
insoluble matter . . . . .	. . . . . max. 0,005 %	iron (Fe) . . . . .	. . . . . max. 0,0002 %
pH (5 %, H <sub>2</sub> O, 25 °C) . . . . .	4,5 - 5,5	lead (Pb) . . . . .	. . . . . max. 0,0001 %
acidity or alkalinity . . . . .	. . . . . passes test	magnesium (Mg) . . . . .	. . . . . max. 0,0005 %
bromides and iodides . . . . .	. . . . . passes test	nickel (Ni) . . . . .	. . . . . max. 0,0001 %
nitrites (NO <sub>2</sub> ) . . . . .	. . . . . max. 0,0005 %	potassium (K) . . . . .	. . . . . max. 0,005 %
phosphates (as PO <sub>4</sub> ) . . . . .	. . . . . max. 0,0002 %	sodium (Na) . . . . .	. . . . . max. 0,005 %
sulfates (SO <sub>4</sub> ) . . . . .	. . . . . max. 0,002 %	zinc (Zn) . . . . .	. . . . . max. 0,0002 %
calcium (Ca) . . . . .	. . . . . max. 0,0005 %	residue on ignition (as SO <sub>4</sub> ) . . . . .	. . . . . max. 0,01 %

loss on drying (105 °C) . . . . . max. 1 %

Art. No.	Volume	Container
AM02730250	250 g	
AM02730500	500 g	
AM02731000	1 kg	
AM0273005P	5 kg	

## AM0274 Ammonium chloride, molecular biology grade

assay (argentometric) . . . . .	min. 99,8 %
lead (Pb) . . . . .	. . . . . max. 0,0001 %
DNases, RNases, Proteases . . . . .	. . . . . non detected

Art. No.	Volume	Container
AM02740500	500 g	

## Ammonium dichromate

### AM0276 Ammonium dichromate, moistened with 0,5 - 3% H<sub>2</sub>O, extra pure




- Synonyms: Ammonium bichromate, Ammonium pyrochromate
- (NH<sub>4</sub>)<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>
- M = 252,07 g/mol
- CAS [7789-09-5]
- EINECS-No.: 232-143-1
- Solub. in water: (20 °C): 360 g/l
- Melting point: 180 °C (decomposes, explosion reaction)
- Ignition temp.: 218 °C
- LD 50 (oral, rat): 53,75 mg/kg
- EC-Index-No.: 024-003-00-1
- ADR: 5.1 O2 II UN 1439
- IMDG: 5.1 II UN 1439
- IATA/ICAO: 5.1 II UN 1439

- GHS-signal word: Danger
- GHS-H sentences: H272 - H301 - H330 - H334 - H340 - H350 - H360FD - H372 - H314 - H410 - H312 - H317 -
- GHS-P sentences: P221 - P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: photography, in explosive compositions, catalyst, in porcelain industry, analytical chemistry.
- Appearance: Orange crystals

#### Specifications:

assay (iodometric) . . . . .	. . . . . min. 97 %
chlorides (Cl) . . . . .	. . . . . max. 0,01 %

sulfates (SO <sub>4</sub> ) . . . . .	. . . . . max. 0,02 %
calcium (Ca) . . . . .	. . . . . max. 0,01 %
copper (Cu) . . . . .	. . . . . max. 0,005 %
iron (Fe) . . . . .	. . . . . max. 0,005 %
lead (Pb) . . . . .	. . . . . max. 0,01 %
sodium (Na) . . . . .	. . . . . max. 0,01 %
loss on drying (105 °C) . . . . .	. . . . . max. 3 %

Art. No.	Volume	Container
AM02760500	500 g	
AM02761000	1 kg	
AM0276005P	5 kg	

## Ammonium dihydrogen phosphate





- Synonyms: Ammonium biphosphate, Ammonium phosphate monobasic, Primary ammonium phosphate, Monoammonium orthophosphate
- (NH<sub>4</sub>)H<sub>2</sub>PO<sub>4</sub>
- M = 115,03 g/mol

- CAS [7722-76-1]
- EINECS-No.: 231-764-5
- Solub. in water: (20 °C): 370 g/l
- Melting point: 190 °C
- LD 50 (oral, rat): 2500 mg/kg

- Tariff number: 3105 40 00 10
- Applications: in fertilizer compositions, analytical chemistry, in buffer solutions.





## AM0334 Ammonium dihydrogen phosphate, extra pure

assay (acidimetric) . . . . .	. . . . . min. 99 %	arsenic (As) . . . . .	. . . . . max. 0,0001 %
pH (5 %, H <sub>2</sub> O) . . . . .	4,0 - 4,5	copper (Cu) . . . . .	. . . . . max. 0,001 %
insoluble in water . . . . .	. . . . . max. 0,02 %	heavy metals (as Pb) . . . . .	. . . . . max. 0,005 %
chlorides (Cl) . . . . .	. . . . . max. 0,001 %	iron (Fe) . . . . .	. . . . . max. 0,001 %
nitrites (NO <sub>2</sub> ) . . . . .	. . . . . max. 0,005 %	nickel (Ni) . . . . .	. . . . . max. 0,001 %
sulfates (SO <sub>4</sub> ) . . . . .	. . . . . max. 0,01 %	lead (Pb) . . . . .	. . . . . max. 0,001 %

Art. No.	Volume	Container
AM03340500	500 g	
AM03341000	1 kg	
AM0334005P	5 kg	
AM0334025P	25 kg	

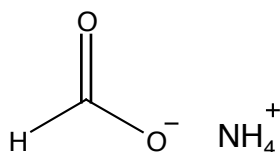
## AM0335 Ammonium dihydrogen phosphate, reagent grade, ACS, Reag. Ph Eur

assay (acidimetric) . . . . .	. . . . . min. 98 %	calcium (Ca) . . . . .	. . . . . max. 0,001 %
insoluble in water . . . . .	. . . . . max. 0,005 %	heavy metals (as Pb) . . . . .	. . . . . max. 0,0005 %
pH (2,3 %, H <sub>2</sub> O) . . . . .	about 4,2	iron (Fe) . . . . .	. . . . . max. 0,001 %
pH (5 %, H <sub>2</sub> O) . . . . .	3,8 - 4,4	magnesium (Mg) . . . . .	. . . . . max. 0,0005 %
chlorides (Cl) . . . . .	. . . . . max. 0,0005 %	potassium (K) . . . . .	. . . . . max. 0,005 %
nitrites (NO <sub>2</sub> ) . . . . .	. . . . . max. 0,001 %	sodium (Na) . . . . .	. . . . . max. 0,005 %
sulfates (SO <sub>4</sub> ) . . . . .	. . . . . max. 0,005 %	substances precipitated with ammonia . . . . .	. . . . . max. 0,005 %
arsenic (As) . . . . .	. . . . . max. 0,00005 %		

Art. No.	Volume	Container
AM03350500	500 g	
AM03351000	1 kg	
AM0335005P	5 kg	
AM0335025P	25 kg	

## Ammonium formate

## AM0320 Ammonium formate, eluent additive for LC-MS



- Synonyms: Formic acid ammonium salt
- $\text{HCOONH}_4$
- M = 63,06 g/mol
- CAS [540-69-2]
- EINECS-No.: 208-753-9
- Solub. in water: (20 °C): miscible
- Melting point: 116 °C
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2915 12 00 00

**Specifications:**

assay (iodometric) . . . . .	min. 97 %
aluminium (Al) . . . . .	max. 0,001 %
barium (Ba) . . . . .	max. 0,0001 %
cadmium (Cd) . . . . .	max. 0,0001 %
calcium (Ca) . . . . .	max. 0,0005 %

chromium (Cr) . . . . .	max. 0,0001 %
cobalt (Co) . . . . .	max. 0,0001 %
copper (Cu) . . . . .	max. 0,0001 %
iron (Fe) . . . . .	max. 0,0001 %
lead (Pb) . . . . .	max. 0,0001 %
lithium (Li) . . . . .	max. 0,0001 %
magnesium (Mg) . . . . .	max. 0,0005 %
manganese (Mn) . . . . .	max. 0,0001 %
molybdenum (Mo) . . . . .	max. 0,0001 %
nickel (Ni) . . . . .	max. 0,0001 %
potassium (K) . . . . .	max. 0,0005 %
sodium (Na) . . . . .	max. 0,0005 %
strontium (Sr) . . . . .	max. 0,0001 %
zinc (Zn) . . . . .	max. 0,0001 %
suitability for use in LC-MS . . . . .	passes test

Art. No.	Volume	Container
AM03200050	50 g	

## Ammonium heptamolybdate tetrahydrate

- Synonyms: Ammonium molybdate, Hexammonium heptamolybdate 4-hydrate
- $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}\cdot 4\text{H}_2\text{O}$
- M = 1235,86 g/mol

- CAS [12054-85-2]
- EINECS-No.: 234-722-4
- Solub. in water: (20 °C): 400 g/l
- Melting point: 90 °C (release of crystalline water)

- LD 50 (oral, rat): 3883 mg/kg
- Tariff number: 2841 70 00 90
- Applications: photography, in porcelain industry, analytical chemistry.

## AM0349 Ammonium heptamolybdate tetrahydrate, extra pure, Pharmpur®, USP

assay $[(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}\cdot 4\text{H}_2\text{O}]$ . . . . .	99,3 - 101,8 %
insoluble in water . . . . .	max. 0,005 %
chlorides (Cl) . . . . .	max. 0,002 %
nitrates ( $\text{NO}_3$ ) . . . . .	passes test
phosphates, arseniates, silicates (as $\text{PO}_4$ ) . . . . .	passes test

phosphates (as $\text{PO}_4$ ) . . . . .	max. 0,0005 %
sulfates ( $\text{SO}_4$ ) . . . . .	max. 0,02 %
heavy metals (as Pb) . . . . .	max. 0,001 %
magnesium and alkaline salts . . . . .	max. 0,02 %
Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
AM03490100	100 g	
AM03490250	250 g	
AM03491000	1 kg	

## AM0350 Ammonium heptamolybdate tetrahydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay $[(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}\cdot 4\text{H}_2\text{O}]$ . . . . .	min. 99 %
assay (as $\text{MoO}_3$ ) . . . . .	81,0 - 83,0 %
insoluble in water . . . . .	max. 0,005 %
arsenates, phosphates, and silicates (as $\text{SiO}_2$ ) . . . . .	max. 0,0005 %
chlorides (Cl) . . . . .	max. 0,0005 %
nitrates ( $\text{NO}_3$ ) . . . . .	passes test
phosphates (as $\text{PO}_4$ ) . . . . .	max. 0,0005 %

sulfates ( $\text{SO}_4$ ) . . . . .	max. 0,005 %
copper (Cu) . . . . .	max. 0,001 %
heavy metals (as Pb) . . . . .	max. 0,001 %
iron (Fe) . . . . .	max. 0,0005 %
lead (Pb) . . . . .	max. 0,001 %
magnesium (Mg) . . . . .	max. 0,005 %
potassium (K) . . . . .	max. 0,002 %
sodium (Na) . . . . .	max. 0,01 %

Art. No.	Volume	Container
AM03500100	100 g	
AM03500250	250 g	
AM03500500	500 g	
AM03501000	1 kg	

## Ammonium hydrogen carbonate

## AM0330 Ammonium hydrogen carbonate, reagent grade, Reag. Ph Eur



- Synonyms: Ammonium bicarbonate
- $\text{NH}_4\text{HCO}_3$
- M = 79,06 g/mol
- CAS [1066-33-7]
- EINECS-No.: 213-911-5

- Solub. in water: (20 °C): 220 g/l
- Melting point: 106 °C
- Vapour pressure: (20 °C) 67 hPa
- LD 50 (oral, rat): 1576 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2836 10 00 00

- Applications: analytical chemistry, manufacture of dyes, in porcelain industry, pigment, in the textile industry.

**Specifications:**

assay (acidimetric) . . . . .	min. 99 %
chlorides (Cl) . . . . .	max. 0,0005 %
nitrates ( $\text{NO}_3$ ) . . . . .	max. 0,001 %
phosphates (as $\text{PO}_4$ ) . . . . .	max. 0,0005 %
sulfates ( $\text{SO}_4$ ) . . . . .	max. 0,005 %
sulfides (S) . . . . .	max. 0,001 %
arsenic (As) . . . . .	max. 0,0001 %
calcium (Ca) . . . . .	max. 0,001 %
cadmium (Cd) . . . . .	max. 0,0005 %
cobalt (Co) . . . . .	max. 0,0005 %
copper (Cu) . . . . .	max. 0,0001 %

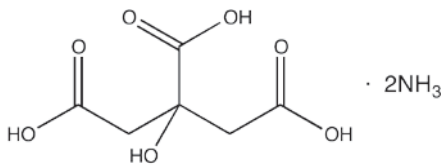
heavy metals (as Pb) . . . . .	max. 0,0005 %
iron (Fe) . . . . .	max. 0,0001 %
lead (Pb) . . . . .	max. 0,0005 %
magnesium (Mg) . . . . .	max. 0,001 %
nickel (Ni) . . . . .	max. 0,0005 %
potassium (K) . . . . .	max. 0,001 %
sodium (Na) . . . . .	max. 0,002 %
zinc (Zn) . . . . .	max. 0,0005 %
residue on ignition . . . . .	max. 0,05 %

Art. No.	Volume	Container
AM03300500	500 g	
AM03301000	1 kg	
AM0330005P	5 kg	

# Ammoni

## di-Ammonium hydrogen citrate

### AM0332 di-Ammonium hydrogen citrate, reagent grade, ACS



- Synonyms: Ammonium citrate dibasic
- $C_6H_8O_7 \cdot 2NH_3$
- $M = 226,19 \text{ g/mol}$
- CAS [3012-65-5]
- EINECS-No.: 221-146-3
- Solub. in water: (20 °C): freely soluble
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2918 15 00 90
- Applications: analytical chemistry, in fertilizer compositions, for determination of: phosphates.

#### Specifications:

assay ..... 98 - 103 %  
insoluble matter ..... max. 0,005 %

pH (5 %,  $H_2O$ ) ..... 4,7 - 5,3  
chlorides (Cl) ..... max. 0,0005 %  
oxalates ( $C_2O_4$ ) ..... passes test  
phosphates (as  $PO_4$ ) ..... max. 0,0005 %  
heavy metals (as Pb) ..... max. 0,0005 %  
iron (Fe) ..... max. 0,0005 %  
sulphur compounds (as  $SO_4$ ) ..... max. 0,005 %  
residue on ignition ..... max. 0,01 %

Art. No.	Volume	Container
AM03320500	500 g	
AM03321000	1 kg	
AM0332005P	5 kg	
AM0332025P	25 kg	

## di-Ammonium hydrogen phosphate

- Synonyms: Ammonium biphosphate, Ammonium phosphate dibasic, Fyrex
- $(NH_4)_2HPO_4$
- $M = 132,06 \text{ g/mol}$
- CAS [7783-28-0]

- EINECS-No.: 231-987-8
- Solub. in water: (20 °C): 690 g/l
- Melting point: 155 °C (decomposes)
- GHS-signal word: Warning
- GHS-H sentences: H312 - H332

- GHS-P sentences: P261 - P280 - P322 - P304 + P340 - P312 - P501a
- Tariff number: 3105 30 00 00
- Applications: Fire-resistant protective clothing, dentifrices, corrosion inhibitor, analytical chemistry.

### AM0310 di-Ammonium hydrogen phosphate, extra pure, Pharmpur®, NF

assay (acidimetric) ..... min. 99 %  
insoluble in water ..... max. 0,1 %  
pH (1 %,  $H_2O$ ) ..... 7,6 - 8,2  
chlorides (Cl) ..... max. 0,002 %  
sulfates ( $SO_4$ ) ..... max. 0,02 %

arsenic (As) ..... max. 0,0001 %  
heavy metals (as Pb) ..... max. 0,001 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AM03100500	500 g	
AM03101000	1 kg	
AM0310005P	5 kg	

### AM0312 di-Ammonium hydrogen phosphate, reagent grade, ACS

assay (acidimetric) ..... min. 98 %  
insoluble in water ..... max. 0,005 %  
pH (5 %,  $H_2O$ , 25 °C) ..... 7,7 - 8,1  
chlorides (Cl) ..... max. 0,0005 %  
nitrates ( $NO_3$ ) ..... max. 0,001 %  
sulfates ( $SO_4$ ) ..... max. 0,004 %  
arsenic (As) ..... max. 0,00005 %

calcium (Ca) ..... max. 0,001 %  
heavy metals (as Pb) ..... max. 0,0005 %  
iron (Fe) ..... max. 0,001 %  
magnesium (Mg) ..... max. 0,0005 %  
potassium (K) ..... max. 0,001 %  
sodium (Na) ..... max. 0,001 %  
total sulphur (as  $SO_4$ ) ..... max. 0,004 %

Art. No.	Volume	Container
AM03120500	500 g	
AM03121000	1 kg	
AM0312025P	25 kg	

## Ammonium iodide

### AM0480 Ammonium iodide, extra pure

- $NH_4I$
- $M = 144,94 \text{ g/mol}$
- CAS [12027-06-4]
- EINECS-No.: 234-717-7
- Solub. in water: (20 °C): soluble
- Melting point: 405 °C
- Tariff number: 2827 60 00 90
- Applications: analytical chemistry, laboratory reagent, photography.

#### Specifications:

assay (argentometric) ..... min. 99 %  
insoluble in water ..... max. 0,005 %  
pH (5 %,  $H_2O$ ) ..... 4,5 - 6,5  
chlorides and bromides (as Cl) ..... max. 0,02 %  
iodates ( $IO_3$ ) ..... max. 0,01 %  
sulfates ( $SO_4$ ) ..... max. 0,01 %  
thiosulfates ( $S_2O_3$ ) ..... max. 0,01 %  
arsenic (As) ..... max. 0,0005 %

heavy metals (as Pb) ..... max. 0,001 %  
iron (Fe) ..... max. 0,001 %  
residue on ignition ..... max. 0,1 %  
loss on drying (105 °C) ..... max. 1 %

Art. No.	Volume	Container
AM04800250	250 g	
AM04801000	1 kg	

## Ammonium iron(II) sulfate hexahydrate

- Synonyms: Iron(II) ammonium sulfate, Ferrous ammonium sulfate, Mohr's salt
- $(NH_4)_2Fe(SO_4)_2 \cdot 6H_2O$
- $M = 392,14 \text{ g/mol}$

- CAS [7783-85-9]
- EINECS-No.: 233-151-8
- Solub. in water: (20 °C): 269 g/l
- Melting point: 100 °C

- Tariff number: 2833 30 00 00
- Applications: analytical chemistry, synthesis of polymers, photography.

### HI0314 Ammonium iron(II) sulfate hexahydrate, extra pure

assay (permanganometric) ..... 98 - 101 %  
insoluble in  $H_2SO_4$  ..... max. 0,01 %  
chlorides (Cl) ..... max. 0,005 %  
phosphates (as  $PO_4$ ) ..... max. 0,005 %  
calcium (Ca) ..... max. 0,02 %  
copper (Cu) ..... max. 0,002 %

iron (III) (Fe (III)) ..... max. 0,05 %  
magnesium (Mg) ..... max. 0,02 %  
potassium (K) ..... max. 0,01 %  
sodium (Na) ..... max. 0,01 %  
zinc (Zn) ..... max. 0,01 %

Art. No.	Volume	Container
HI03140500	500 g	
HI03141000	1 kg	
HI0314005P	5 kg	



**HI0316 Ammonium iron(II) sulfate hexahydrate, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (permanganometric) . . . . . 99,0 - 101,5 %  
 insoluble in diluted H<sub>2</sub>SO<sub>4</sub> . . . . . max. 0,01 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 3,0 - 5,0  
 chlorides (Cl) . . . . . max. 0,001 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,002 %  
 calcium (Ca) . . . . . max. 0,002 %  
 copper (Cu) . . . . . max. 0,002 %  
 iron (III) (Fe (III)) . . . . . max. 0,01 %

lead (Pb) . . . . . max. 0,001 %  
 magnesium (Mg) . . . . . max. 0,01 %  
 manganese (Mn) . . . . . max. 0,02 %  
 potassium (K) . . . . . max. 0,002 %  
 sodium (Na) . . . . . max. 0,01 %  
 zinc (Zn) . . . . . max. 0,003 %  
 non precipitable by NH<sub>4</sub>OH (as SO<sub>4</sub>) . . . . . max. 0,05 %

Art. No.	Volume	Container
HI03160500	500 g	
HI03161000	1 kg	
HI0316005P	5 kg	

**Ammonium iron(II) sulfate, volumetric solutions****HI0318 Ammonium iron(II) sulfate, solution ~ 0,12 mol/l (0,12 N), for COD determination, according to ISO 6060**

- (NH<sub>4</sub>)<sub>2</sub>Fe(SO<sub>4</sub>)<sub>2</sub>·6H<sub>2</sub>O
- M = 392,13 g/mol
- CAS [7783-85-9]
- EINECS-No.: 233-151-8
- Density: 1,025 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 2833 29 90 00
- Applications: determining COD.

uncertainty . . . . . ± 0,001  
 1 ml = 0,047056 g (NH<sub>4</sub>)<sub>2</sub>Fe(SO<sub>4</sub>)<sub>2</sub>·6H<sub>2</sub>O This volumetric solution was checked by means of volumetric methods using a potassium dichromate standard solution, that was also checked against Scharlau's sodium thiosulfate standard solution. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
HI03181000	1 l	

**Specifications:**

titer . . . . . 0,119 - 0,129 mol/l

**Ammonium iron(III) sulfate dodecahydrate**

- Synonyms: Iron(III) ammonium sulfate, Alum iron, Ferric ammonium alum, Iron alum
- NH<sub>4</sub>Fe(SO<sub>4</sub>)<sub>2</sub>·12H<sub>2</sub>O
- M = 482,19 g/mol

- CAS [7783-83-7]
- EINECS-No.: 233-382-4
- Solub. in water: (25 °C): 1240 g/l
- Melting point: 39 - 41 °C

- Tariff number: 2833 30 00 00
- Applications: analytical chemistry, laboratory reagent.

**HI0312 Ammonium iron(III) sulfate dodecahydrate, extra pure**

assay (iodometric) . . . . . 97 - 102 %  
 insoluble in water . . . . . max. 0,01 %  
 chlorides (Cl) . . . . . max. 0,005 %  
 calcium (Ca) . . . . . max. 0,03 %  
 copper (Cu) . . . . . max. 0,005 %  
 iron (II) (Fe (II)) . . . . . max. 0,002 %

lead (Pb) . . . . . max. 0,002 %  
 magnesium (Mg) . . . . . max. 0,03 %  
 zinc (Zn) . . . . . max. 0,005 %

Art. No.	Volume	Container
HI03120500	500 g	
HI03121000	1 kg	
HI0312005P	5 kg	
HI0312025P	25 kg	

**HI0315 Ammonium iron(III) sulfate dodecahydrate, reagent grade, ACS, ISO**

assay (iodometric) . . . . . 99,0 - 102,0 %  
 insoluble in water . . . . . max. 0,005 %  
 insoluble in HCl . . . . . max. 0,01 %  
 chlorides (Cl) . . . . . max. 0,0005 %  
 nitrates (NO<sub>3</sub>) . . . . . max. 0,01 %  
 calcium (Ca) . . . . . max. 0,002 %  
 copper (Cu) . . . . . max. 0,001 %  
 iron (II) (Fe (II)) . . . . . max. 0,001 %

lead (Pb) . . . . . max. 0,0005 %  
 magnesium (Mg) . . . . . max. 0,001 %  
 manganese (Mn) . . . . . max. 0,005 %  
 potassium (K) . . . . . max. 0,01 %  
 sodium (Na) . . . . . max. 0,01 %  
 zinc (Zn) . . . . . max. 0,001 %  
 non precipitable by NH<sub>4</sub>OH (as SO<sub>4</sub>) . . . . . max. 0,05 %

Art. No.	Volume	Container
HI03150500	500 g	
HI03151000	1 kg	
HI0315005P	5 kg	
HI0315025P	25 kg	

**Ammonium iron(III) sulfate, saturated solution****HI0319 Ammonium iron(III) sulfate, saturated solution**

- NH<sub>4</sub>Fe(SO<sub>4</sub>)<sub>2</sub>·12H<sub>2</sub>O
- M = 482,19 g/mol
- CAS [7783-83-7]
- EINECS-No.: 233-382-4
- Density: ~ 1,18 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible

- Tariff number: 2833 30 00 00

water to make 1 liter

**Specifications:**

composition: ammonium iron (III) sulfate  
 12-hydrate . . . . . 500 g  
 sulfuric acid 96 % . . . . . 1 ml

Art. No.	Volume	Container
HI03191000	1 l	

**Ammonium iron(III) sulfate, volumetric solutions****HI0317 Ammonium iron(III) sulfate, solution 0,1 mol/l (0,1 N)**

- NH<sub>4</sub>Fe(SO<sub>4</sub>)<sub>2</sub>·12H<sub>2</sub>O
- M = 482,19 g/mol
- CAS [7783-83-7]
- EINECS-No.: 233-382-4
- Density: 1,025 g/cm<sup>3</sup>
- Tariff number: 2833 30 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

uncertainty ± 0,003  
 1 ml = 0,04822 g (NH<sub>4</sub>)Fe(SO<sub>4</sub>)<sub>2</sub>·12H<sub>2</sub>O This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
HI03171000	1 l	

**Specifications:**

factor . . . . . 0,995 - 1,005

scharlab@scharlab.com

# Ammoni

## Ammonium monovanadate

- Synonyms: Ammonium metavanadate, Ammonium vanadate
- $\text{NH}_4\text{VO}_3$
- M = 116,98 g/mol
- CAS [7803-55-6]
- EINECS-No.: 232-261-3
- Solub. in water: (15 °C): 5,2 g/l
- Melting point: ~ 200 °C (decomposes)
- LD 50 (oral, rat): 169 mg/kg
- ADR: 6.1 T5 II UN 2859
- IMDG: 6.1 II UN 2859
- IATA/ICAO: 6.1 II UN 2859
- GHS-signal word: Danger
- GHS-H sentences: H301 - H332 - H315 - H319 - H335
- GHS-P sentences: P261 - P301 + P310 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2841 90 30 00
- Applications: for the identification of: phosphates, analytical chemistry.

### AM0465 Ammonium monovanadate, synthesis grade

assay (titr. with Fe(II)) . . . . .min. 99 %

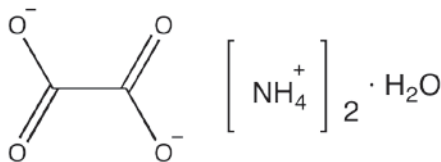
Art. No.	Volume	Container
AM04650250	250 g	Ⓟ

### AM0467 Ammonium monovanadate, reagent grade, ACS

assay (permanganometric) . . . . .min. 99,5 %  
 solubility in ammonium hydroxide . . . . .passes test  
 carbonates ( $\text{CO}_3$ ) . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,2 %  
 phosphates (as  $\text{PO}_4$ ) . . . . .max. 0,005 %  
 sulfates ( $\text{SO}_4$ ) . . . . .max. 0,05 %  
 cadmium (Cd) . . . . .max. 0,001 %  
 cobalt (Co) . . . . .max. 0,002 %  
 copper (Cu) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %  
 lead (Pb) . . . . .max. 0,002 %  
 nickel (Ni) . . . . .max. 0,002 %  
 zinc (Zn) . . . . .max. 0,001 %

Art. No.	Volume	Container
AM04670100	100 g	Ⓟ
AM04670250	250 g	Ⓟ
AM04670500	500 g	Ⓟ
AM04671000	1 kg	Ⓟ

## di-Ammonium oxalate monohydrate



- Synonyms: Oxalic acid ammonium salt
- $(\text{NH}_4)_2\text{C}_2\text{O}_4 \cdot \text{H}_2\text{O}$
- M = 142,11 g/mol
- CAS [6009-70-7]
- EINECS-No.: 214-202-3
- Solub. in water: (20 °C): ~ 45 g/l
- Melting point: 70 °C
- EC-Index-No.: 607-007-00-3
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312
- GHS-P sentences: P280 - P322 - P301 + P312 - P312 - P363 - P501a
- Tariff number: 2917 11 00 99
- Applications: analytical chemistry, for determination of: calcium, lead, rare earth metals.

### AM0364 di-Ammonium oxalate monohydrate, extra pure

assay (permanganometric) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,02 %  
 pH (2,5 %,  $\text{H}_2\text{O}$ ) . . . . .6 - 7  
 chlorides (Cl) . . . . .max. 0,005 %  
 phosphates (as  $\text{PO}_4$ ) . . . . .max. 0,01 %  
 sulfates ( $\text{SO}_4$ ) . . . . .max. 0,01 %  
 nitrates ( $\text{NO}_3$ ) . . . . .max. 0,005 %  
 arsenic (As) . . . . .max. 0,00005 %  
 calcium (Ca) . . . . .max. 0,002 %  
 copper (Cu) . . . . .max. 0,002 %  
 heavy metals (as Pb) . . . . .max. 0,002 %  
 iron (Fe) . . . . .max. 0,002 %  
 lead (Pb) . . . . .max. 0,002 %  
 nickel (Ni) . . . . .max. 0,002 %  
 residue on ignition (as  $\text{SO}_4$ ) . . . . .max. 0,1 %

Art. No.	Volume	Container
AM03640500	500 g	Ⓟ
AM03641000	1 kg	Ⓟ
AM0364005P	5 kg	Ⓟ
AM0364025P	25 kg	Ⓟ

### AM0365 di-Ammonium oxalate monohydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (permanganometric) . . . . .99 - 101 %  
 insoluble in water . . . . .max. 0,005 %  
 pH (2,5 %,  $\text{H}_2\text{O}$ ) . . . . .6 - 7  
 chlorides (Cl) . . . . .max. 0,0005 %  
 nitrates ( $\text{NO}_3$ ) . . . . .max. 0,0005 %  
 sulfates ( $\text{SO}_4$ ) . . . . .max. 0,002 %  
 cadmium (Cd) . . . . .max. 0,0005 %  
 calcium (Ca) . . . . .max. 0,001 %  
 copper (Cu) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0002 %  
 lead (Pb) . . . . .max. 0,0005 %  
 magnesium (Mg) . . . . .max. 0,001 %  
 potassium (K) . . . . .max. 0,001 %  
 sodium (Na) . . . . .max. 0,001 %  
 zinc (Zn) . . . . .max. 0,0005 %  
 residue on ignition (as  $\text{SO}_4$ ) . . . . .max. 0,02 %

Art. No.	Volume	Container
AM03650250	250 g	Ⓟ
AM03650500	500 g	Ⓟ
AM03651000	1 kg	Ⓟ
AM0365005P	5 kg	Ⓟ

## Ammonium peroxodisulfate

- Synonyms: Ammonium persulfate, Peroxodisulfuric acid diammonium salt
- $(\text{NH}_4)_2\text{S}_2\text{O}_8$
- M = 228,20 g/mol
- CAS [7727-54-0]
- EINECS-No.: 231-786-5
- Solub. in water: (20 °C): 620 g/l
- Melting point: 120 °C (decomposes)
- LD 50 (oral, rat): 495 mg/kg
- EC-Index-No.: 016-060-00-6
- ADR: 5.1 O2 III UN 1444
- IMDG: 5.1 III UN 1444
- IATA/ICAO: 5.1 III UN 1444
- GHS-signal word: Danger
- GHS-H sentences: H334 - H272 - H302 - H335 - H315 - H319 - H317
- GHS-P sentences: P221 - P210 - P285 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2833 40 00 00
- Applications: analytical chemistry, synthesis of polymers.
- Appearance: White to light yellow powder

### AM0370 Ammonium peroxodisulfate, extra pure, Reag. Ph Eur

assay (iodometric) . . . . .min. 98 %  
 insoluble in water . . . . .max. 0,02 %  
 chlorides and chlorates (as Cl) . . . . .max. 0,005 %  
 copper (Cu) . . . . .max. 0,005 %  
 heavy metals (as Pb) . . . . .max. 0,003 %  
 iron (Fe) . . . . .max. 0,001 %  
 lead (Pb) . . . . .max. 0,001 %  
 manganese (Mn) . . . . .max. 0,0002 %  
 nickel (Ni) . . . . .max. 0,005 %  
 residue on ignition (as  $\text{SO}_4$ ) . . . . .max. 0,1 %

Art. No.	Volume	Container
AM03701000	1kg	Ⓟ
AM0370005P	5 kg	Ⓟ

**AM0371 Ammonium peroxodisulfate, molecular biology grade**

assay (iodometric) . . . . .min. 98 %	DNases, RNases, Proteases . . . . . non detected
chlorides (Cl) . . . . .max. 0,001 %	
heavy metals (as Pb) . . . . .max. 0,005 %	
iron (Fe) . . . . .max. 0,001 %	

Art. No.	Volume	Container
AM03710025	25 g	P
AM03710100	100 g	P

**Ammonium sulfate**

- Synonyms: Sulfuric acid diammonium salt
- $(\text{NH}_4)_2\text{SO}_4$
- M = 132,14 g/mol
- CAS [7783-20-2]
- EINECS-No.: 231-984-1
- Solub. in water: (20 °C): 754 g/l
- Melting point: 280 °C (decomposes)
- LD 50 (oral, rat): 4250 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3102 21 00 00
- Applications: analytical chemistry, manufacture of alums.

**AM0398 Ammonium sulfate, extra pure**

assay (acidimetric) . . . . .min. 99 %	heavy metals (as Pb) . . . . .max. 0,001 %
pH (5 %, H <sub>2</sub> O) . . . . .4,5 - 6	iron (Fe) . . . . .max. 0,001 %
chlorides (Cl) . . . . .max. 0,002 %	lead (Pb) . . . . .max. 0,002 %
nitrates (NO <sub>3</sub> ) . . . . .max. 0,002 %	nickel (Ni) . . . . .max. 0,002 %
arsenic (As) . . . . .max. 0,0003 %	residue on ignition . . . . .max. 0,05 %
copper (Cu) . . . . .max. 0,002 %	loss on drying (105 °C) . . . . .max. 1 %

Art. No.	Volume	Container
AM03981000	1 kg	P
AM0398005P	5 kg	P

**AM0400 Ammonium sulfate, reagent grade, ACS, ISO, Reag. Ph Eur**

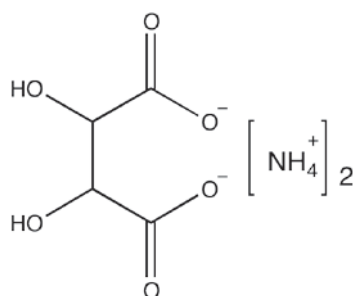
assay (acidimetric) . . . . .min. 99 %	calcium (Ca) . . . . .max. 0,001 %	loss on drying (105 °C) . . . . .max. 0,1 %
insoluble matter . . . . .max. 0,005 %	copper (Cu) . . . . .max. 0,0002 %	
pH (5 %, H <sub>2</sub> O) . . . . .4,5 - 6	heavy metals (as Pb) . . . . .max. 0,0005 %	
chlorides (Cl) . . . . .max. 0,0003 %	iron (Fe) . . . . .max. 0,0002 %	
nitrates (NO <sub>3</sub> ) . . . . .max. 0,001 %	lead (Pb) . . . . .max. 0,0002 %	
phosphates (as PO <sub>4</sub> ) . . . . .max. 0,0005 %	magnesium (Mg) . . . . .max. 0,0005 %	
arsenic (As) . . . . .max. 0,00002 %	zinc (Zn) . . . . .max. 0,0001 %	
cadmium (Cd) . . . . .max. 0,0001 %	residue on ignition (as SO <sub>3</sub> ) . . . . .max. 0,005 %	

Art. No.	Volume	Container
AM04000500	500 g	P
AM04001000	1 kg	P
AM0400005P	5 kg	P
AM0400025P	25 kg	P

**AM0401 Ammonium sulfate, molecular biology grade**

assay (acidimetric) . . . . .min. 99,5 %	copper (Cu) . . . . .max. 0,0001 %	DNases, RNases, Proteases . . . . . non detected
insoluble in water . . . . .max. 0,005 %	iron (Fe) . . . . .max. 0,0002 %	
pH (5 %, H <sub>2</sub> O) . . . . .4,5 - 5,5	lead (Pb) . . . . .max. 0,0001 %	
chlorides (Cl) . . . . .max. 0,0005 %	zinc (Zn) . . . . .max. 0,0001 %	
nitrates (NO <sub>3</sub> ) . . . . .max. 0,001 %	absorbance of an aqueous solution	
phosphates (as PO <sub>4</sub> ) . . . . .max. 0,0005 %	0,1 M in a 1 cm cell at 260 nm . . . . .max. 0,010 AU	
arsenic (As) . . . . .max. 0,0001 %	absorbance of an aqueous solution	
cadmium (Cd) . . . . .max. 0,0001 %	0,1 M in a 1 cm cell at 280 nm . . . . .max. 0,010 AU	
calcium (Ca) . . . . .max. 0,001 %	residue on ignition (as SO <sub>3</sub> ) . . . . .max. 0,01 %	

Art. No.	Volume	Container
AM04010100	100 g	P
AM04011000	1 kg	P
AM0401005P	5 kg	P

**di-Ammonium tartrate****AM0410 di-Ammonium tartrate, reagent grade**

- Synonyms: Tartaric acid diammonium salt
- $\text{C}_4\text{H}_{12}\text{N}_2\text{O}_8$
- M = 184,15 g/mol
- CAS [3164-29-2]
- EINECS-No.: 221-618-9
- Solub. in water: (15 °C): 63 g/l
- Tariff number: 2918 13 00 90
- Applications: analytical chemistry, laboratory reagent.

**Specifications:**

assay (acidimetric) . . . . .min. 99 %
insoluble in water . . . . .max. 0,005 %
pH (5 %, H <sub>2</sub> O) . . . . .5,5 - 7,0
chlorides (Cl) . . . . .max. 0,001 %
phosphates (as PO <sub>4</sub> ) . . . . .max. 0,001 %

sulfates (SO <sub>4</sub> ) . . . . .max. 0,005 %
arsenic (As) . . . . .max. 0,00005 %
copper (Cu) . . . . .max. 0,0005 %
heavy metals (as Pb) . . . . .max. 0,0005 %
iron (Fe) . . . . .max. 0,0005 %
lead (Pb) . . . . .max. 0,0005 %
nickel (Ni) . . . . .max. 0,0005 %
residue on ignition (as SO <sub>4</sub> ) . . . . .max. 0,05 %

Art. No.	Volume	Container
AM04100500	500 g	P
AM04101000	1 kg	P
AM0410005P	5 kg	P

**Ammonium thiocyanate****AM0419 Ammonium thiocyanate, reagent grade, ACS, ISO**

• Synonyms: Ammonium sulfocyanide, Ammonium sulfocyanate, Ammonium rhodanide, Thiocyanic acid ammonium salt	• GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a	heavy metals (as Pb) . . . . .max. 0,0005 %
• NH <sub>4</sub> SCN	• Tariff number: 2842 90 80 80	iron (Fe) . . . . .max. 0,0001 %
• M = 76,12 g/mol	• Applications: analytical chemistry, synthesis of organic products, photography.	lead (Pb) . . . . .max. 0,0004 %
• CAS [1762-95-4]		I <sub>2</sub> consuming substances . . . . .max. 0,004 meq/g
• EINECS-No.: 217-175-6		residue on ignition (as SO <sub>4</sub> ) . . . . .max. 0,025 %
• Solub. in water: (20 °C): soluble		
• Melting point: 150 °C		
• Boiling point: 170 °C (decomposes)		
• LD 50 (oral, rat): 500 mg/kg		
• EC-Index-No.: 615-004-00-3		
• GHS-signal word: Warning		
• GHS-H sentences: H302 - EUH032 - H312 - H332		
	<b>Specifications:</b>	
	assay (argentometric) . . . . .min. 99 %	
	insoluble in water . . . . .max. 0,005 %	
	pH (5 %, H <sub>2</sub> O) . . . . .4,8 - 5,8	
	chlorides (Cl) . . . . .max. 0,005 %	
	sulfides (S) . . . . .max. 0,001 %	
	sulfates (SO <sub>4</sub> ) . . . . .max. 0,0025 %	
	copper (Cu) . . . . .max. 0,0004 %	

Art. No.	Volume	Container
AM04190500	500 g	P
AM04191000	1 kg	P
AM0419005P	5 kg	P
AM0419025P	25 kg	P

# Ammoni

## Ammonium thiocyanate, volumetric solutions

### AM0421 Ammonium thiocyanate, solution 1 mol/l (1 N)

- NH<sub>4</sub>SCN
- M = 76,12 g/mol
- CAS [1762-95-4]
- EINECS-No.: 217-175-6
- Density: 1,01 g/cm<sup>3</sup>
- LD 50 (oral, rat): 500 mg/kg (pure substance)
- EC-Index-No.: 615-004-00-3
- GHS-H sentences: EUH031 - EUH210
- Tariff number: 2842 90 80 80
- Applications: analytical chemistry, titrant in volumetric analysis, for metals titration (silver).

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,07612 g NH<sub>4</sub>SCN This volumetric solution was checked by means of potentiometric methods using a silver nitrate standard solution, that was also checked against Scharlau's potassium chloride volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AM04211000	1 l	Ⓢ

### AM0420 Ammonium thiocyanate, solution 0,1 mol/l (0,1 N)

- NH<sub>4</sub>SCN
- M = 76,12 g/mol
- CAS [1762-95-4]
- EINECS-No.: 217-175-6
- Density: 1,00 g/cm<sup>3</sup>
- LD 50 (oral, rat): 500 mg/kg (pure substance)
- EC-Index-No.: 615-004-00-3
- Tariff number: 2842 90 80 80
- Applications: analytical chemistry, laboratory reagent.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,007612 g NH<sub>4</sub>SCN This volumetric solution was checked by means of potentiometric methods using a silver nitrate standard solution, that was also checked against Scharlau's potassium chloride volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AM04201000	1 l	Ⓢ

### AM0418 Ammonium thiocyanate, concentrated solution to prepare 1 l of solution 0,1 mol/l (0,1 N)

- NH<sub>4</sub>SCN
- M = 76,12 g/mol
- CAS [1762-95-4]
- EINECS-No.: 217-175-6
- Density: 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 500 mg/kg (pure substance)

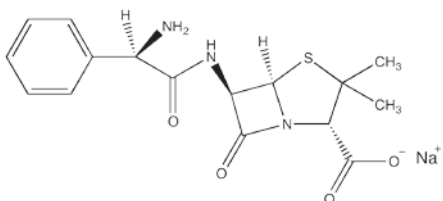
- EC-Index-No.: 615-004-00-3
- GHS-H sentences: EUH031 - EUH210
- Tariff number: 2842 90 80 80
- Applications: analytical chemistry, for determination of: metals.

**Specifications:**  
 amount of substance: . . . . . 7,6120 g NH<sub>4</sub>SCN  
 concentrated solution: . . . . . 1 mol/l ± 0,1 %

Art. No.	Volume	Container
AM041800PA	u.	Ⓢ

## Ampicilline, sodium salt

### AM0468 Ampicilline, sodium salt, for biochemical purposes



- Synonyms: D(-)-α-Aminobenzylpenicillin sodium salt
- C<sub>16</sub>H<sub>18</sub>N<sub>2</sub>NaO<sub>4</sub>S
- M = 371,39 g/mol
- CAS [69-52-3]
- EINECS-No.: 200-708-1
- Melting point: 238 °C
- LD 50 (oral, rat): > 5314 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H334 - H335 - H315 - H319 - H317
- GHS-P sentences: P285 - P261 - P305 + P351 + P338 - P321 - P405 - P501a

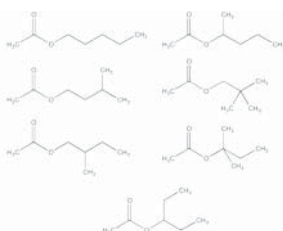
- Tariff number: 2941 10 20 90
- Applications: in biochemistry, antibacterian, for pharmaceuticals synthesizing.

**Specifications:**  
 assay (titration with HClO<sub>2</sub>) . . . . .min. 98 %  
 specific rotation ([α]<sub>D</sub><sup>20</sup>; c = 0,2, H<sub>2</sub>O) . . . + 258 ° - + 287 °

Art. No.	Volume	Container
AM04680005	5 g	Ⓢ
AM04680025	25 g	Ⓢ

## Amyl acetate, mixture of isomers

### AC0075 Amyl acetate, mixture of isomers, synthesis grade



- C<sub>7</sub>H<sub>14</sub>O<sub>2</sub>
- M = 130,19 g/mol
- CAS [628-63-7]
- EINECS-No.: 211-047-3
- Density: 0,87 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 2 - 10 g/l
- Melting point: ~ -70 °C
- Boiling point: ~ 149 °C
- Flash pt. 25 °C
- Ignition temp.: 375 °C
- Vapour pressure: 6 hPa (20 °C)
- Refraction index: (n<sub>D</sub><sup>20</sup> °C/D) 1,402
- LD 50 (oral, rat): > 5000 mg/kg
- EC-Index-No.: 607-130-00-2 [1]
- ADR: 3 F1 III UN 1104
- IMDG: 3 III UN 1104
- IATA/ICAO: 3 III UN 1104

- GHS-signal word: Warning
- GHS-H sentences: H226 - EUH066
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2915 39 30 00
- Applications: solvents, perfumery, photography, painting.

**Specifications:**  
 total content of isomers (G.C.) . . . . .min. 98 %  
 residue on evaporation . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AC00751000	1 l	Ⓢ
AC00752500	2,5 l	Ⓢ

## n-Amyl alcohol



- Synonyms: 1-Pentanol, 1-Pentyl alcohol, n-Butyl carbinol
- $C_5H_{12}O$
- $M = 88,15 \text{ g/mol}$
- CAS [71-41-0]
- EINECS-No.: 200-752-1
- Density:  $0,81 \text{ g/cm}^3$
- Solub. in water: (20 °C):  $27 \text{ g/l}$
- Melting point:  $-79 \text{ °C}$
- Boiling point:  $138 \text{ °C}$
- Flash pt.  $33 \text{ °C}$
- Ignition temp.:  $300 \text{ °C}$
- Vapour pressure: (20 °C)  $3 \text{ hPa}$
- Refraction index: (n 20 °C/D)  $1,4100$

- Dielectric const.: (25 °C)  $13,9$
- LD 50 (oral, rat):  $3670 \text{ mg/kg}$
- EC-Index-No.: 603-006-00-7
- ADR: 3 F1 III UN 1105
- IMDG: 3 III UN 1105
- IATA/ICAO: 3 III UN 1105
- GHS-signal word: Warning
- GHS-H sentences: H226 - H332 - H315 - H335
- GHS-P sentences: P210 - P241 - P303 + P361 + P533 - P321 - P405 - P501a
- Tariff number: 2905 19 00 98
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products, solvents.

## AL0127 n-Amyl alcohol, synthesis grade

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,814 - 0,816  
 residue on evaporation . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,3 %

Art. No.	Volume	Container
AL01271000	1 l	Ø
AL01272500	2,5 l	Ø
AL0127005P	5 l	☞
AL0127025A	25 l	☞

## AL0128 n-Amyl alcohol, reagent grade

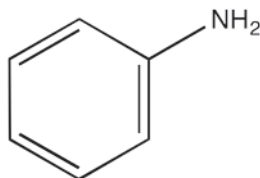
assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,814 - 0,816  
 free acid (as  $CH_3COOH$ ) . . . . .max. 0,005 %  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %

cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 valeric aldehyde (G.C.) . . . . .max. 0,05 %

substances darkened by  $H_2SO_4$  . . . . .passes test  
 residue on evaporation . . . . .max. 0,002 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AL01281000	1 l	Ø
AL01282500	2,5 l	Ø

## Aniline



- Synonyms: Phenylamine, Aminobenzene
- $C_6H_7N$
- $M = 93,13 \text{ g/mol}$
- CAS [62-53-3]
- EINECS-No.: 200-539-3
- Density:  $1,03 \text{ g/cm}^3$
- Solub. in water: (20 °C):  $36 \text{ g/l}$
- Melting point:  $-6,2 \text{ °C}$
- Boiling point: (20 hPa)  $77 \text{ °C}$
- Flash pt.  $76 \text{ °C}$
- Ignition temp.:  $540 \text{ °C}$
- Vapour pressure: (20 °C)  $0,5 \text{ hPa}$
- Refraction index: (n 20 °C/D)  $1,5863$
- Dielectric const.: (20 °C)  $6,8$

- LD 50 (oral, rat):  $572 \text{ mg/kg}$
- EC-Index-No.: 612-008-00-7
- ADR: 6.1 T1 II UN 1547
- IMDG: 6.1 II UN 1547
- IATA/ICAO: 6.1 II UN 1547
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H331 - H372 - H341 - H351 - H318 - H400 - H317
- GHS-P sentences: P301 + P310 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2921 41 00 00
- Applications: manufacture of dyes, for pharmaceuticals synthesizing, in the rubber industry, manufacturing of synthetic resins, analytical chemistry, solvents.

## AN0345 Aniline, synthesis grade

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,021 - 1,023  
 residue on ignition . . . . .max. 0,01 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AN03451000	1 l	Ø
AN03452500	2,5 l	Ø
AN0345025A	25 l	☞

## AN0347 Aniline, reagent grade, ACS

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,020 - 1,022  
 colour (Hazen) . . . . .max. 250  
 chlorobenzene (G.C.) . . . . .max. 0,01 %

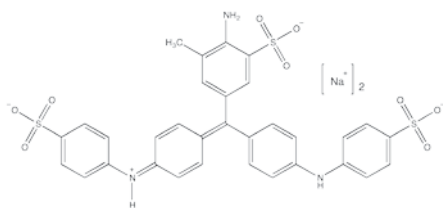
nitrobenzene (G.C.) . . . . .max. 0,003 %  
 hydrocarbons . . . . .passes test  
 residue on ignition . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AN03470100	100 ml	Ø
AN03470250	250 ml	Ø
AN03471000	1 l	Ø

# Anilin

## Aniline blue, C.I. 42755

### AZ0100 Aniline blue, C.I. 42755, for microscopy



- Synonyms: Acid blue 22
- $C_{22}H_{16}N_2Na_2O_6S_3$
- $M = 737,72$  g/mol
- CAS [28631-66-5]
- EINECS-No.: 249-113-9
- Solub. in water: (20 °C): soluble
- Tariff number: 3204 12 00 00
- Applications: stain for electron microscopy.

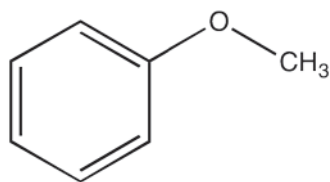
#### Specifications:

Absorption maximum  $\lambda$  (in  $H_2O$ ) . . . . . 595 - 605 nm  
Absorptivity (A1%/1 cm;  $\lambda$  max.) . . . . . 250 - 500  
related substances (TLC) . . . . . passes test  
loss on drying (110 °C) . . . . . max. 7 %

Art. No.	Volume	Container
AZ0100025	25 g	0

## Anisole

### AN0400 Anisole, synthesis grade



- Synonyms: Methoxybenzene, Methyl phenyl ether
- $C_7H_8O$
- $M = 108,14$  g/mol
- CAS [100-66-3]
- EINECS-No.: 202-876-1
- Density: 0,99 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 1,5 - 1,7 g/l
- Melting point: -37 °C
- Boiling point: 156 °C
- Flash pt. 44 °C
- Ignition temp.: 475 °C
- Vapour pressure: (20 °C) 3,5 hPa
- Refraction index: (n 20 °C/D) 1,5168
- Dielectric const.: (25 °C) 4,3
- LD 50 (oral, rat): 3700 mg/kg
- ADR: 3 F1 III UN 2222
- IMDG: 3 III UN 2222
- IATA/ICAO: 3 III UN 2222

- GHS-signal word: Warning
- GHS-H sentences: H226
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2909 30 90 90
- Applications: perfumery, synthesis of organic products.

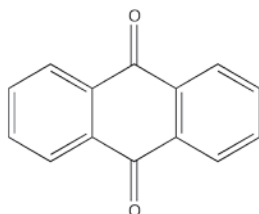
#### Specifications:

assay (G.C.) . . . . . min. 99,5 %  
identity (IR-spectrum) . . . . . passes test  
density (20°/4°) . . . . . 0,993 - 0,994  
residue on ignition . . . . . max. 0,02 %

Art. No.	Volume	Container
AN04000250	250 ml	0
AN04001000	1 l	0

## Anthraquinone

### AN0530 Anthraquinone, synthesis grade



- Synonyms: 9,10-Dioxoanthracene, 9,10-Dihydro-9,10-anthracenedione
- $C_{14}H_8O_2$
- $M = 208,22$  g/mol
- CAS [84-65-1]
- EINECS-No.: 201-549-0
- Solub. in water: (20 °C): insoluble
- Melting point: 282 - 285 °C
- Boiling point: 379 - 381 °C
- Flash pt. 185 °C
- Ignition temp.: 650 °C
- Vapour pressure: (286 °C) 100 hPa
- LD 50 (oral, rat): > 5000 mg/kg

- Tariff number: 2914 61 00 00
- Applications: manufacture of dyes, synthesis of organic products.

#### Specifications:

assay (HPLC) . . . . . min. 98 %  
identity (IR-spectrum) . . . . . passes test  
residue on ignition . . . . . max. 1 %

Art. No.	Volume	Container
AN05300250	250 g	0

## Antimony

### AN0420 Antimony, granulated, extra pure



- Sb
- $M = 121,75$  g/mol
- CAS [7440-36-0]
- EINECS-No.: 231-146-5
- Solub. in water: (20 °C): insoluble
- Melting point: 630 °C
- Boiling point: 1637 °C
- LD 50 (oral, rat): 7000 mg/kg
- GHS-signal word: Warning

- GHS-H sentences: H335
- GHS-P sentences: P261 - P304 + P340 - P312 - P405 - P403 + P233 - P501a
- Tariff number: 8110 10 00 90
- Applications: for the synthesis of: alloys; electrolyte for batteries, analytical chemistry.

copper (Cu) . . . . . max. 0,05 %  
iron (Fe) . . . . . max . 0,05 %  
lead (Pb) . . . . . max . 0,2 %

#### Specifications:

assay . . . . . min. 99 %

Art. No.	Volume	Container
AN04200100	100 g	0

## Antimony(III) oxide

### AN0450 Antimony(III) oxide, synthesis grade



- Synonyms: di-Antimony trioxide
- $Sb_2O_3$
- $M = 291,50$  g/mol
- CAS [1309-64-4]
- EINECS-No.: 215-175-0
- Solub. in water: (20 °C): 2,70 mg/l
- Melting point: 656 °C (sublimes)
- Vapour pressure: (574 °C) 1,3 hPa
- LD 50 (oral, rat): > 20000 mg/kg

- EC-Index-No.: 051-005-00-X
- GHS-signal word: Warning
- GHS-H sentences: H351
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2825 80 00 00
- Applications: manufacture of dyes, analytical chemistry.

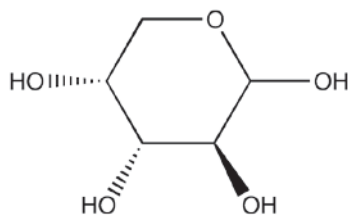
#### Specifications:

assay (iodometric) . . . . . min. 99 %

Art. No.	Volume	Container
AN04500250	250 g	0
AN04500500	500 g	0
AN0450005P	5 kg	0

## D(-)-Arabinose

## AR0050 D(-)-Arabinose, for biochemistry



- $C_5H_{10}O_5$
- $M = 150,13$  g/mol
- CAS [28697-53-2]
- EINECS-No.: 233-708-5
- Solub. in water: (20 °C): soluble
- Melting point: 158 - 160 °C
- Tariff number: 2940 00 00 80
- Applications: for microbiology.

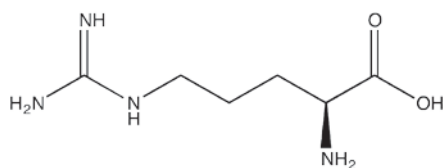
**Specifications:**

specific rotation ( $[\alpha]_{20}^{20}/D$ ,  $c = 10$ ,  $H_2O$ ) . . . - 103 ° - - 105 °  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 related substances (TLC) . . . . .passes test  
 water (K.F.) . . . . .max. 0,5 %

Art. No.	Volume	Container
AR00500005	5 g	0
AR00500025	25 g	0

## L-Arginine

## AR0120 L-Arginine, extra pure, Pharmapur®, Ph Eur, BP, USP



- Synonyms: 2-Amino-5-guanidinovaleic acid
- $C_6H_{14}N_4O_2$
- $M = 174,20$  g/mol
- CAS [74-79-3]
- EINECS-No.: 200-811-1
- Solub. in water: (20 °C): 148,7 g/l
- Melting point: 216 - 218 °C (decomposes)
- LD 50 (oral, rat): > 5110 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2925 29 00 90
- Applications: for pharmaceuticals synthesizing, in food industry, in pharma industry.

**Specifications:**

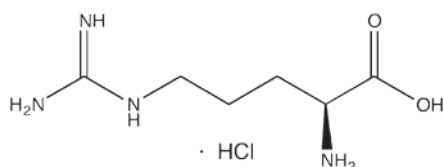
assay (titr. with  $HClO_4$ , referred to dried sample) . . . . . 98,5 - 101 %  
 identification . . . . .passes test

specific rotation ( $[\alpha]_{20}^{20}/D$ ,  $c = 8$ ,  $HCl$  6N) . . . + 26,3 ° - + 27,7 °  
 appearance of solution . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,02 %  
 sulfates ( $SO_4$ ) . . . . .max. 0,03 %  
 ammonium ( $NH_4$ ) . . . . .max. 0,02 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %  
 ninhydrin-positive substances. . . . .passes test  
 residue on ignition . . . . .max. 0,1 %  
 loss on drying (105 °C) . . . . .max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AR01200100	100 g	0
AR01200500	500 g	0
AR0120005P	5 kg	0
AR0120025P	25 kg	0

## L-Arginine monohydrochloride

## AR0125 L-Arginine monohydrochloride, extra pure, Pharmapur®, Ph Eur, BP, USP



- Synonyms:  $\alpha$ -Amino- $\delta$ -guanidino valerianic acid hydrochloride
- $C_6H_{14}N_4O_2 \cdot HCl$
- $M = 210,86$  g/mol
- CAS [1119-34-2]
- EINECS-No.: 214-275-1
- Solub. in water: (20 °C): 730 g/l
- Melting point: 218 - 220 °C (decomposes)
- LD 50 (oral, rat): 12000 mg/kg
- Tariff number: 2925 29 00 90
- Applications: synthesis of organic products, for pharmaceuticals synthesizing, in biochemistry, in food industry, in pharma industry.

**Specifications:**

assay (titration with  $HClO_4$ , on dried sample) . . . . . 98,5 - 101 %  
 chlorides (argentometric, on dried sample) (Cl) . . . . . 16,5 - 17,1 %

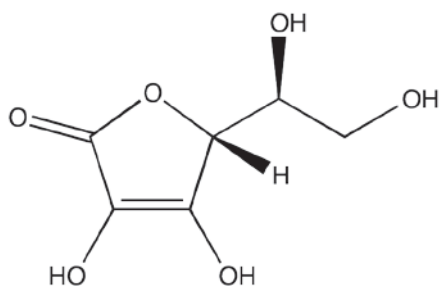
appearance of solution . . . . .passes test  
 identity (IR-spectrum) . . . . .passes test  
 specific rotation ( $[\alpha]_{20}^{20}/D$ ,  $c = 8$ ,  $HCl$  6 mol/l, on dried sample) . . . . . + 21,0 ° - + 23,6 °  
 sulfates ( $SO_4$ ) . . . . .max. 0,03 %  
 ammonium ( $NH_4$ ) . . . . .max. 0,02 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %  
 ninhydrin-positive substances. . . . .max. 0,5 %  
 residue on ignition . . . . .max. 0,1 %  
 loss on drying (105 °C) . . . . .max. 0,2 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AR01250050	50 g	0
AR01250250	250 g	0
AR0125005P	5 kg	0

# Ascorb

## L(+)-Ascorbic acid

AC0515 L (+)-Ascorbic acid, reagent grade, ACS, ISO



- Synonyms: Vitamin C, 3-Oxo-L-gulonic acid-γ-lactone
- $C_6H_8O_6$
- $M = 176,13 \text{ g/mol}$
- CAS [50-81-7]
- EINECS-No.: 200-066-2
- Solub. in water: (24 °C): 330 g/l
- Melting point: 190 - 192 °C (decomposes)
- Ignition temp.: 380 °C
- LD 50 (oral, rat): 11900 mg/kg
- Tariff number: 2936 27 00 00
- Applications: synthesis of organic products, for pharmaceuticals synthesizing, antioxidant (in food industry), in biochemistry.

### Specifications:

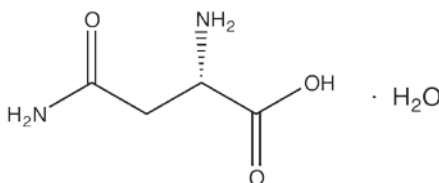
assay (iodometric) . . . . . min. 99,7 %  
 identity (IR-spectrum) . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ , c = 10,  $H_2O$ ) . . . . . + 20,5 ° - + 21,5 °  
 insoluble in water . . . . . max. 0,01 %

pH (5 %,  $H_2O$ ) . . . . . 2,2 - 2,5  
 chlorides (Cl) . . . . . max. 0,005 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,002 %  
 copper (Cu) . . . . . max. 0,00003 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,0002 %  
 lead (Pb) . . . . . max. 0,001 %  
 nickel (Ni) . . . . . max. 0,001 %  
 residue on ignition . . . . . max. 0,05 %  
 loss on drying (105 °C) . . . . . max. 0,1 %

Art. No.	Volume	Container
AC05150100	100 g	Ⓟ
AC05150250	250 g	Ⓟ
AC05151000	1 kg	Ⓟ
AC0515005P	5 kg	Ⓟ
AC0515025P	25 kg	Ⓟ

## L-Asparagine monohydrate

AS0015 L-Asparagine monohydrate, extra pure, Pharmpur®, Ph Eur, BP



- Synonyms: Asparaginic acid semiamide
- $C_4H_8N_2O_3 \cdot H_2O$
- $M = 150,14 \text{ g/mol}$
- CAS [5794-13-8]
- EINECS-No.: 200-735-9
- Solub. in water: (20 °C): 22 g/l
- Melting point: 215 - 217 °C (decomposes)
- Tariff number: 2924 19 00 90
- Applications: in biochemistry, for pharmaceuticals synthesizing, in food industry, synthesis of organic products, in pharma industry.

### Specifications:

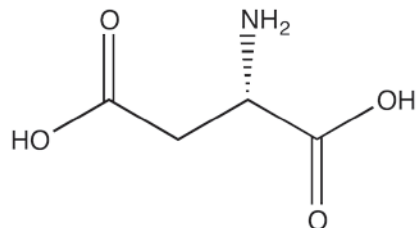
assay (titration with  $HClO_4$ , on dried sample) . . . . . 99 - 101 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution (2 %,  $H_2O$ ) . . . . . clear and colourless  
 specific rotation ( $[\alpha]_{20}^D$ , c = 10, HCl 10 % on dried sample) . . . . . + 33,7 ° - + 36,0 °

pH (2 %,  $H_2O$ ) . . . . . 4,0 - 6,0  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,02 %  
 ammonium ( $NH_4$ ) . . . . . max. 0,1 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %  
 ninhydrin-positive substances . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 loss on drying (60 °C, 24 h) . . . . . 10,5 - 12,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AS00150025	25 g	Ⓟ
AS00150100	100 g	Ⓟ
AS00151000	1 kg	Ⓟ
AS0015025P	25 kg	Ⓟ

## L-Aspartic acid

AC0529 L-Aspartic acid, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms: L-α-Aminosuccinic acid
- $C_4H_7NO_4$
- $M = 133,10 \text{ g/mol}$
- CAS [56-84-8]
- EINECS-No.: 200-291-6
- Solub. in water: (20 °C): 4 g/l
- Melting point: 269 - 271 °C
- LD 50 (oral, rat): > 5110 mg/kg
- Tariff number: 2922 49 95 90
- Applications: for pharmaceuticals synthesizing, synthesis of organic products, in food industry, in pharma industry.

### Specifications:

assay (acidimetric, on dried sample) . . . . . 98,5 - 101,5 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ , c = 8, HCl

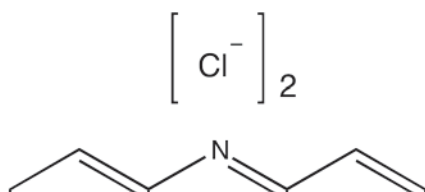
25 %, on dried sample) . . . . . + 24 ° - + 26 °  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,03 %  
 ammonium ( $NH_4$ ) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %  
 ninhydrin-positive substances . . . . . max. 0,5 %  
 residue on ignition . . . . . max. 0,1 %  
 loss on drying (105 °C) . . . . . max. 0,5 %  
 chromatographic purity . . . . . max. 2,0 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC05290100	100 g	Ⓟ
AC05290500	500 g	Ⓟ
AC0529005P	5 kg	Ⓟ



## Azure II, C.I. 52010/52015

### AZ0365 Azure II, C.I. 52010/52015, for microscopy



- Synonyms: Mixture of Azure B and Methylene blue in equal amounts
- CAS [37247-10-2]
- Solub. in water: (20 °C): ~ 100 g/l
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 3204 13 00 90
- Applications: microscopy.

#### Specifications:

Absorption maximum  $\lambda_{\text{max}}$  (in methanol) 645 - 650 nm  
 Absorptivity (A1%/1 cm;  $\lambda_{\text{max}}$ ; 0,0005 % methanol, on dried sample) ..... 1850 - 2100  
 related substances (TLC) ..... passes test  
 loss on drying (110 °C) ..... max. 15 %  
 suitability for microscopy ..... passes test

Art. No.	Volume	Container
AZ03650010	10 g	0

## Azur eosin methylene blue dye, according to Giemsa

### AZ0390 Azur eosin methylene blue dye, according to Giemsa

- CAS [51811-82-6]
- EINECS-No.: 257-438-2
- Solub. in water: (20 °C): slightly soluble
- Tariff number: 3204 19 00 90
- Applications: microscopy.

#### Specifications:

Absorption maximum  $\lambda_1$  (in

methanol) ..... 640 - 650 nm  
 Absorption maximum  $\lambda_2$  (in methanol) ..... 520 - 525 nm  
 Absorptivity (A1%/1 cm;  $\lambda_1$ , methanol, referred to dried sample) ..... min. 950  
 Absorptivity (A1%/1 cm;  $\lambda_2$ ; methanol, referred to dried sample) ..... min 600  
 loss on drying (110 °C) ..... max. 10 %

TLC test ..... passes test  
 suitability for microscopy ..... passes test

Art. No.	Volume	Container
AZ03900025	25 g	0
AZ03900050	50 g	0
AZ03900100	100 g	0

## Azur eosin methylene blue solution (in methanol), according to Giemsa, modified

### AZ0391 Azur eosin methylene blue solution (in methanol), according to Giemsa, modified, for microscopy



- Density: 0,99 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: > 65 °C
- Flash pt. ~ 18 °C
- Ignition temp.: ~ 455 °C
- LD 50 (oral, rat): 5628 mg/kg (methanol)
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger

- GHS-H sentences: H225 - H301 - H311 - H330 - H370
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 3204 19 00 90
- Applications: microscopy.

#### Specifications:

Absorption maximum  $\lambda_1$  ..... 650 - 665 nm  
 Absorption maximum  $\lambda_2$  ..... 520 - 525 nm

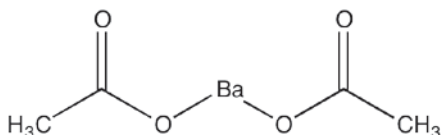
Absorbance (0,1 %  $\lambda_1$ , 1cm) ..... 0,71 - 0,76  
 Absorbance (0,1 %  $\lambda_2$ , 1cm) ..... 0,33 - 0,36  
 suitability for microscopy ..... passes test

Art. No.	Volume	Container
AZ03910500	500 ml	0
AZ03911000	1 l	0
AZ03912500	2,5 l	0

# Barium

## Barium acetate

BA0040 Barium acetate, reagent grade, ACS



- Synonyms: Acetic acid barium salt
- $Ba(CH_3COO)_2$
- M = 255,43 g/mol
- CAS [543-80-6]
- EINECS-No.: 208-849-0
- Solub. in water: (20 °C): ~ 720 g/l
- Melting point: ~ 450 °C
- LD 50 (oral, rat): 921 mg/kg
- EC-Index-No.: 056-002-00-7
- ADR: 6.1 T5 III UN 1564
- IMDG: 6.1 III UN 1564
- IATA/ICAO: 6.1 III UN 1564
- GHS-signal word: Warning
- GHS-H sentences: H302 - H332
- GHS-P sentences: P261 - P264 - P301 + P312 - P304 + P340 - P312 - P501a
- Tariff number: 2915 29 00 90
- Applications: analytical chemistry, synthesis of organic products, in lubricant compositions.
- Appearance: White solid

### Specifications:

assay (complexometric) . . . . . 99 - 102 %  
 insoluble in water . . . . . max. 0,01 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 7,0 - 8,5  
 chlorides (Cl) . . . . . max. 0,0005 %  
 calcium (Ca) . . . . . max. 0,005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 potassium (K) . . . . . max. 0,003 %  
 sodium (Na) . . . . . max. 0,005 %  
 strontium (Sr) . . . . . max. 0,15 %  
 oxidizing substances (as NO<sub>2</sub>) . . . . . max. 0,005 %  
 non precipitable with H<sub>2</sub>SO<sub>4</sub> (as SO<sub>4</sub>) . . . . . max. 0,1 %

Art. No.	Volume	Container
BA00400500	500 g	Ⓟ
BA00401000	1 kg	Ⓟ
BA0040005P	5 kg	Ⓟ
BA0040025P	25 kg	Ⓟ

## Barium chloride dihydrate

- BaCl<sub>2</sub>·2H<sub>2</sub>O
- M = 244,28 g/mol
- CAS [10326-27-9]
- EINECS-No.: 233-788-1
- Solub. in water: (20 °C): 357 g/l
- Melting point: 962 °C (release of crystalline water)

- LD 50 (oral, rat): 118 mg/kg (anhydrous substance)
- EC-Index-No.: 056-002-00-7
- ADR: 6.1 T5 III UN 1564
- IMDG: 6.1 III UN 1564
- IATA/ICAO: 6.1 III UN 1564
- GHS-signal word: Warning

- GHS-H sentences: H302 - H332
- GHS-P sentences: P261 - P264 - P301 + P312 - P304 + P340 - P312 - P501a
- Tariff number: 2827 39 80 90
- Applications: analytical chemistry, for determination of: sulfates.

## BA0053 Barium chloride dihydrate, extra pure



assay (complexometric) . . . . . 99 - 102 %  
 insoluble in water . . . . . max. 0,02 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 5,2 - 8,0  
 nitrogen compounds (as N) . . . . . max. 0,003 %  
 calcium (Ca) . . . . . max. 0,2 %  
 copper (Cu) . . . . . max. 0,002 %  
 heavy metals (as Pb) . . . . . max. 0,001 %

iron (Fe) . . . . . max. 0,001 %  
 lead (Pb) . . . . . max. 0,002 %  
 nickel (Ni) . . . . . max. 0,002 %  
 strontium (Sr) . . . . . max. 0,2 %  
 non precipitable with diluted H<sub>2</sub>SO<sub>4</sub> . . . . . max. 0,1 %

Art. No.	Volume	Container
BA00530500	500 g	Ⓟ
BA00531000	1 kg	Ⓟ
BA0053005P	5 kg	Ⓟ
BA0053025P	25 kg	Ⓟ

## BA0055 Barium chloride dihydrate, reagent grade, ACS, ISO, Reag. Ph Eur



assay (complexometric) . . . . . min. 99 %  
 insoluble in water . . . . . max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 5,0 - 8,2  
 total nitrogen (as N) . . . . . max. 0,002 %  
 oxidizing substances (as NO<sub>2</sub>) . . . . . max. 0,005 %  
 calcium (Ca) . . . . . max. 0,005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %

iron (Fe) . . . . . max. 0,0001 %  
 lead (Pb) . . . . . max. 0,001 %  
 magnesium (Mg) . . . . . max. 0,001 %  
 potassium (K) . . . . . max. 0,0025 %  
 sodium (Na) . . . . . max. 0,005 %  
 strontium (Sr) . . . . . max. 0,05 %  
 loss on drying (150 °C) . . . . . 14 - 16 %

Art. No.	Volume	Container
BA00550500	500 g	Ⓟ
BA00551000	1 kg	Ⓟ
BA0055005P	5 kg	Ⓟ
BA0055025P	25 kg	Ⓟ

## Barium chloride, solution 10%

### BA0056 Barium chloride, solution 10% w/v



- BaCl<sub>2</sub>
- M = 208,25 g/mol
- CAS [10361-37-2]
- EINECS-No.: 233-788-1
- Density: 1,08 g/cm<sup>3</sup>
- EC-Index-No.: 056-004-00-8
- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287

- IATA/ICAO: 6.1 III UN 3287
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2827 39 80 90
- Applications: analytical chemistry, laboratory reagent.
- Appearance: Colourless liquid

### Specifications:

assay (argentometric) . . . . . approx. 10 %

Art. No.	Volume	Container
BA00560500	500 ml	Ⓟ

## Barium hydroxide octahydrate

- Synonyms: Caustic baryta, Barium oxide hydrate octahydrate
- Ba(OH)<sub>2</sub>·8H<sub>2</sub>O
- M = 315,48 g/mol
- CAS [12230-71-6]
- EINECS-No.: 241-234-5
- Solub. in water: (15 °C): 56 g/l

- Melting point: 78 °C
- LD 50 (oral, rat): 550 mg/kg
- ADR: 8 CT2 II UN 2923
- IMDG: 8 II UN 2923
- IATA/ICAO: 8 II UN 2923
- GHS-signal word: Warning
- GHS-H sentences: H302 - H332

- GHS-P sentences: P261 - P264 - P301 + P312 - P304 + P340 - P312 - P501a
- Tariff number: 2816 40 00 00
- Applications: analytical chemistry, for the detection of: carbon dioxide; in pesticide compositions, in lubricant compositions, in the rubber industry.

**BA0063 Barium hydroxide octahydrate, extra pure**

assay (complexometric) . . . . .min. 97 %	heavy metals (as Pb) . . . . .max. 0,001 %
insoluble in HCl . . . . .max. 0,01 %	iron (Fe) . . . . .max. 0,001 %
carbonates (as BaCO <sub>3</sub> ) . . . . .max. 2 %	lead (Pb) . . . . .max. 0,002 %
chlorides (Cl) . . . . .max. 0,005 %	nickel (Ni) . . . . .max. 0,002 %
sulfides (S) . . . . .max. 0,001 %	strontium (Sr) . . . . .max. 1 %
calcium (Ca) . . . . .max. 0,005 %	non precipitable with H <sub>2</sub> SO <sub>4</sub> (as SO <sub>4</sub> ) . . . . .max. 0,2 %
copper (Cu) . . . . .max. 0,002 %	

Art. No.	Volume	Container
BA00630500	500 g	P
BA00631000	1 kg	P
BA0063005P	5 kg	P
BA0063025P	25 kg	P

**BA0065 Barium hydroxide octahydrate, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (acidimetric) . . . . .min. 98 %	heavy metals (as Pb) . . . . .max. 0,0005 %	non precipitable with H <sub>2</sub> SO <sub>4</sub> (as SO <sub>4</sub> ) . . . . .max. 0,2 %
insoluble in HCl . . . . .max. 0,005 %	iron (Fe) . . . . .max. 0,0005 %	
carbonates (as BaCO <sub>3</sub> ) . . . . .max. 2,0 %	lead (Pb) . . . . .max. 0,0005 %	
chlorides (Cl) . . . . .max. 0,001 %	magnesium (Mg) . . . . .max. 0,002 %	
sulfides (S) . . . . .max. 0,0005 %	potassium (K) . . . . .max. 0,01 %	
cadmium (Cd) . . . . .max. 0,0005 %	sodium (Na) . . . . .max. 0,01 %	
calcium (Ca) . . . . .max. 0,002 %	strontium (Sr) . . . . .max. 0,5 %	
copper (Cu) . . . . .max. 0,0005 %	zinc (Zn) . . . . .max. 0,0005 %	

Art. No.	Volume	Container
BA00650500	500 g	P
BA00651000	1 kg	P

**Barium nitrate**

- Synonyms: Nitric acid barium salt
- Ba(NO<sub>3</sub>)<sub>2</sub>
- M = 261,35 g/mol
- CAS [10022-31-8]
- EINECS-No.: 233-020-5
- Solub. in water: (20 °C): 90 g/l
- Melting point: 592 - 595 °C

- LD 50 (oral, rat): 355 mg/kg
- EC-Index-No.: 056-002-00-7
- ADR: 5.1 OT2 II UN 1446
- IMDG: 5.1 II UN 1446
- IATA/ICAO: 5.1 II UN 1446
- GHS-signal word: Warning
- GHS-H sentences: H302 - H332

- GHS-P sentences: P261 - P264 - P301 + P312 - P304 + P340 - P312 - P501a
- Tariff number: 2834 29 20 00
- Applications: analytical chemistry, in explosive compositions.
- Appearance: White crystals

**BA0073 Barium nitrate, extra pure**

assay (complexometric) . . . . .min. 99 %	copper (Cu) . . . . .max. 0,002 %
insoluble in water . . . . .max. 0,02 %	heavy metals (as Pb) . . . . .max. 0,001 %
acidity (as HNO <sub>3</sub> ) . . . . .max. 0,01 %	iron (Fe) . . . . .max. 0,0005 %
pH (5 %, H <sub>2</sub> O) . . . . .5 - 8	lead (Pb) . . . . .max. 0,002 %
chlorides (Cl) . . . . .max. 0,002 %	nickel (Ni) . . . . .max. 0,002 %
calcium (Ca) . . . . .max. 0,1 %	strontium (Sr) . . . . .max. 0,1 %

Art. No.	Volume	Container
BA00730500	500 g	P
BA0073005P	5 kg	P
BA0073025P	25 kg	P

**BA0075 Barium nitrate, reagent grade, ACS, Reag. Ph Eur**

assay (complexometric) . . . . .min. 99 %	magnesium (Mg) . . . . .max. 0,002 %
insoluble in water . . . . .max. 0,01 %	potassium (K) . . . . .max. 0,005 %
pH (5 %, H <sub>2</sub> O) . . . . .5 - 8	sodium (Na) . . . . .max. 0,005 %
chlorides (Cl) . . . . .max. 0,0005 %	strontium (Sr) . . . . .max. 0,05 %
ammonium (NH <sub>4</sub> ) . . . . .max. 0,001 %	
calcium (Ca) . . . . .max. 0,002 %	
heavy metals (as Pb) . . . . .max. 0,0005 %	
iron (Fe) . . . . .max. 0,0002 %	

Art. No.	Volume	Container
BA00750250	250 g	P
BA00750500	500 g	P
BA00751000	1 kg	P
BA0075005P	5 kg	P
BA0075025P	25 kg	P

**Barium sulfate****BA0080 Barium sulfate, extra pure, Pharmapur®, Ph Eur, BP**

- Synonyms: Sulfuric acid barium salt, Blanc fixe
- BaSO<sub>4</sub>
- M = 233,40 g/mol
- CAS [7727-43-7]
- EINECS-No.: 231-784-4
- Solub. in water: (20 °C): 15000 mg/kg
- Tariff number: 2833 27 00 00
- Applications: photography, in the rubber industry, synthesis of polymers, in radiology applications, in pharma industry, cosmetic auxiliary

**Specifications:**

identification . . . . .passes test  
soluble in acid . . . . .max. 0,3 %  
acidity or alkalinity . . . . .passes test  
heavy metals (as Pb) . . . . .max. 0,001 %  
oxidisable sulphur compounds . . . . .passes test  
barium soluble salts . . . . .max. 0,001 %  
residue on ignition (600 °C) . . . . .max. 2 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
BA00800500	500 g	P
BA00801000	1 kg	P
BA0080005P	5 kg	P
BA0080025P	25 kg	P

**Barritt's reagent****RE0100 Barritt's reagent, for microbiology**

- Density: 0,82 g/cm<sup>3</sup>
- Flash pt. 14 °C
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993
- GHS-signal word: Danger

- GHS-H sentences: H225 - H318
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P501a
- Tariff number: 3822 00 00 00
- Applications: laboratory reagent, antibiotic.

**Specifications:**

suitability for microbiology . . . . .passes test

Art. No.	Volume	Container
RE0100G100	100 ml	B

# Benedi

## Benedict's reagent, qualitative

### RE0001 Benedict's reagent, for qualitative determination of sugar

- CAS [63126-89-6]
- Density: 1,19 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-signal word: Warning
- GHS-H sentences: H319 - H412
- GHS-P sentences: P280 - P273 - P264 - P305 + P351 + P338 - P337 + P313 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent, for determination of: sugars.

**Specifications:**  
Suitable for qualitative determination of sugar.

Art. No.	Volume	Container
RE00010500	500 ml	☉
RE00011000	1 l	☉

## Benedict's reagent, quantitative

### RE0002 Benedict's reagent, for quantitative determination of sugar

- CAS [63126-89-6]
- Density: 1,23 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-H sentences: H412 - EUH032
- GHS-P sentences: P273 - P501a
- Tariff number: 3822 00 00 00

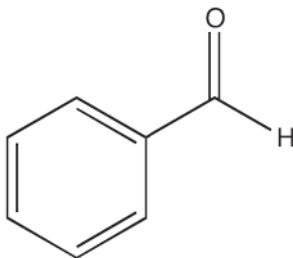
- Applications: analytical chemistry, laboratory reagent, for determination of: sugars.

**Specifications:**  
Suitable for quantitative determination of sugar.

Art. No.	Volume	Container
RE00020500	500 ml	☉
RE00021000	1 l	☉

## Benzaldehyde

### BE0160 Benzaldehyde, synthesis grade



- Synonyms: Benzoic aldehyde, Bitter almond oil
- C<sub>7</sub>H<sub>6</sub>O
- M = 106,13 g/mol
- CAS [100-52-7]
- EINECS-No.: 202-860-4
- Density: 1,05 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 3,3 g/l
- Melting point: -56 °C
- Boiling point: 179 °C
- Flash pt. 64 °C
- Ignition temp.: 190 °C
- Vapour pressure: (20 °C) 1,3 hPa
- Refraction index: (n 20 °C/D) 1,5450
- LD 50 (oral, rat): 1300 mg/kg
- EC-Index-No.: 605-012-00-5
- ADR: 9 M11 III UN 1990
- IMDG: 9 III UN 1990
- IATA/ICAO: 9 III UN 1990
- GHS-signal word: Warning
- GHS-H sentences: H302

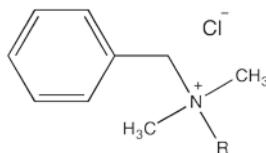
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2912 21 00 00
- Applications: solvents, perfumery, synthesis of organic products, manufacture of dyes.

**Specifications:**  
assay (G.C.) .....min. 98 %  
identity (IR-spectrum) .....passes test  
density (20°/4°) .....1,044 - 1,046  
water (K.F.) .....max. 0,1 %

Art. No.	Volume	Container
BE01601000	1 l	☉
BE01602500	2,5 l	☉
BE0160005P	5 l	☉
BE0160025P	25 l	☉

## Benzalkonium chloride

### BE0155 Benzalkonium chloride, synthesis grade



R: C<sub>12</sub>H<sub>25</sub> 60%  
C<sub>14</sub>H<sub>29</sub> 40%

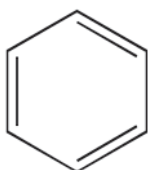
- Synonyms: Alkylbenzyltrimethylammonium chloride, Benzyltrimethylalkylammonium chloride
- C<sub>9</sub>H<sub>13</sub>ClN
- M = 284 g/mol
- CAS [63449-41-2]
- EINECS-No.: 264-151-6
- Solub. in water: (20 °C): soluble
- Melting point: 29 - 34 °C
- EC-Index-No.: 612-140-00-5
- ADR: 8 C4 II UN 3261
- IMDG: 8 II UN 3261
- IATA/ICAO: 8 II UN 3261
- GHS-signal word: Danger
- GHS-H sentences: H314 - H400 - H302 - H312

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3402 12 00 00
- Applications: analytical chemistry, disinfectant.

**Specifications:**  
assay (argentometric, on dried sample) .....min. 97 %  
identity (IR-spectrum) .....passes test  
water .....1 - 6 %

Art. No.	Volume	Container
BE01550250	250 g	☉
BE01551000	1 kg	☉

## Benzene



- Synonyms: Cyclohexatriene
- C<sub>6</sub>H<sub>6</sub>
- M = 78,11 g/mol
- CAS [71-43-2]
- EINECS-No.: 200-753-7
- Density: 0,88 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 1,77 g/l
- Melting point: 5,5 °C
- Boiling point: 80,1 °C
- Flash pt. -11 °C
- Ignition temp.: 555 °C
- Vapour pressure: (20 °C) 101 hPa
- Refraction index: (n 20 °C/D) 1,5011
- Dielectric const.: (20 °C) 2,3
- LD 50 (oral, rat): 930 mg/kg

- EC-Index-No.: 601-020-00-8
- ADR: 3 F1 II UN 1114
- IMDG: 3 II UN 1114
- IATA/ICAO: 3 II UN 1114
- GHS-signal word: Danger
- GHS-H sentences: H225 - H340 - H350 - H372 - H304 - H315 - H319
- GHS-P sentences: P210 - P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2902 20 00 00
- Applications: synthesis of organic products, for pharmaceuticals synthesizing, manufacture of dyes, manufacturing of lacquers, analytical chemistry, solvent for fat and oil extractions.

## BE0030 Benzene, synthesis grade



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,877 - 0,879  
 residue on evaporation . . . . . max. 0,005 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
BE00301000	1 l	0
BE0030005P	5 l	0
BE0030025P	25 l	0

## BE0031 Benzene, extra pure



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,877 - 0,879  
 acidity . . . . . max. 0,0003 meq/g  
 alkalinity . . . . . max. 0,00025 meq/g  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00005 %

lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 toluene (G.C.) . . . . . max. 0,1 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
BE00311000	1 l	0
BE00312500	2,5 l	0
BE0031005P	5 l	0
BE0031025A	25 l	0

## BE0033 Benzene, reagent grade, ACS, ISO, Reag. Ph Eur



assay (G.C.) . . . . . min. 99,7 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,877 - 0,879  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 melting point . . . . . min. 5,2 °C  
 boiling point . . . . . 79 - 81 °C  
 acidity . . . . . max. 0,00005 meq/g  
 alkalinity . . . . . max. 0,00005 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %

cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %

sulfur compounds (as S) . . . . . max. 0,003 %  
 thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . . max. 0,0001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,03 %

Art. No.	Volume	Container
BE00331000	1 l	0
BE00332500	2,5 l	0
BE0033005L	5 l	0
BE0033025A	25 l	0

## BE0034 Benzene, dried (max. 0,01% H<sub>2</sub>O), reagent grade



assay (G.C.) . . . . . min. 99,7 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,877 - 0,879  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 melting point . . . . . min. 5,2 °C  
 acidity . . . . . max. 0,00005 meq/g  
 alkalinity . . . . . max. 0,00005 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %

cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %

zinc (Zn) . . . . . max. 0,00001 %  
 sulfur compounds (as S) . . . . . max. 0,003 %  
 thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . . max. 0,0001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,01 %

Art. No.	Volume	Container
BE00341000	1 l	0

## BE0041 Benzene, Multisolvant® HPLC grade ACS ISO UV-VIS



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,877 - 0,879  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 melting point . . . . . min. 5,2 °C  
 acidity . . . . . max. 0,00005 meq/g  
 alkalinity . . . . . max. 0,00005 meq/g  
 aluminium (Al) . . . . . max. 0,00001 %  
 barium (Ba) . . . . . max. 0,000001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000001 %  
 calcium (Ca) . . . . . max. 0,00003 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %

copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,000002 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,00001 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 sulfur compounds (as S) . . . . . max. 0,0005 %  
 thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . . max. 0,0001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0002 %  
 water (K.F.) . . . . . max. 0,02 %  
 liquid chromatography suitability  
 absorbance . . . . . passes test

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 T(%) A (AU)  
 280 nm . . . . . 25 % 0,602 AU  
 290 nm . . . . . 80 % 0,097 AU  
 300 nm . . . . . 90 % 0,046 AU  
 320 nm . . . . . 95 % 0,022 AU  
 340 nm . . . . . 98 % 0,009 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
BE00411000	1 l	0
BE00412500	2,5 l	0
BE00414000	4 l	0

## BE0032 Benzene, 99,7%, anhydrous (max. 0,005% H<sub>2</sub>O)



assay (G.C.) . . . . . min. 99,7 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,877 - 0,879  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 melting point . . . . . min. 5,2 °C  
 acidity . . . . . max. 0,00005 meq/g  
 alkalinity . . . . . max. 0,00005 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 sulfur compounds (as S) . . . . . max. 0,003 %

thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . . max. 0,0001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
BE00320100	100 ml	0
BE00320500	500 ml	0
BE00321000	1 l	0

## BE0037 Benzene, for liquid scintillation, Normascint®



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,877 - 0,879  
 free acid (as HCl) . . . . . max. 0,001 %

substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,02 %  
 suitability as solvent

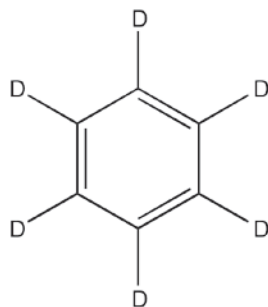
for liquid scintillation . . . . . passes test

Art. No.	Volume	Container
BE00371000	1 l	0

# Benzen

## Benzene-d6

BE0040 Benzene-d6, deuteration degree min. 99,5%, NMR spectroscopy grade, Spectrosol®



- Synonyms: Hexadeuterobenzene
- $C_6D_6$
- $M = 84,15$  g/mol
- CAS [1076-43-3]
- EINECS-No.: 214-061-8
- Density: 0,95 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: 6,7 °C
- Boiling point: 79 °C
- Flash pt. -11 °C
- Ignition temp.: 555 °C
- LD 50 (oral, rat): 930 mg/kg
- ADR: 3 F1 II UN 1114
- IMDG: 3 II UN 1114
- IATA/ICAO: 3 II UN 1114
- GHS-signal word: Danger
- GHS-H sentences: H225 - H340 - H350 - H372 - H304 - H315 - H319

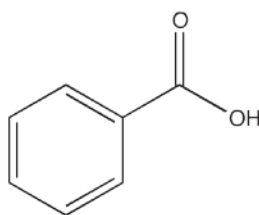
- GHS-P sentences: P210 - P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2845 90 10 00
- Applications: for nuclear magnetic resonance spectroscopy.

### Specifications:

deuteration degree ..... min. 99,5 %  
 water (K.F., H<sub>2</sub>O + D<sub>2</sub>O) ..... max. 0,02 %  
 performance test  
 (NMR-spectrum) ..... passes test

Art. No.	Volume	Container
BE00400010	10 ml	Ⓜ

## Benzoic acid



- Synonyms: Benzenecarboxylic acid, Phenylformic acid
- $C_7H_6O_2$
- $M = 122,12$  g/mol
- CAS [65-85-0]
- EINECS-No.: 200-618-2
- Solub. in water: (20 °C): 3,4 g/l
- Melting point: 121,5 - 123,0 °C
- Boiling point: ~ 249 °C
- Flash pt. 121,1 °C

- Ignition temp.: 532 °C
- Vapour pressure: (20 °C) 1,3 hPa
- LD 50 (oral, rat): 1700 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302 - H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P301 + P312 - P337 + P313 - P501a
- Tariff number: 2916 31 00 90
- Applications: analytical chemistry, preservative agent, manufacture of dyes.

### AC0563 Benzoic acid, synthesis grade



assay (acidimetric) ..... min. 99,5 %  
 identity (IR-spectrum) ..... passes test  
 residue on ignition ..... max. 0,02 %  
 water (K.F.) ..... max. 0,2 %

Art. No.	Volume	Container
AC05630500	500 g	Ⓜ
AC05631000	1 kg	Ⓜ
AC0563005P	5 kg	Ⓜ
AC0563025P	25 kg	Ⓜ

### AC0565 Benzoic acid, reagent grade, ACS



assay (acidimetric) ..... min. 99,9 %  
 identity (IR-spectrum) ..... passes test  
 melting point ..... 122 - 123 °C  
 appearance of solution ..... passes test  
 insoluble in CH<sub>3</sub>OH ..... max. 0,005 %  
 halogen compounds (as Cl) ..... max. 0,01 %  
 chlorine compounds (as Cl) ..... max. 0,005 %  
 sulfates (SO<sub>4</sub>) ..... max. 0,002 %

copper (Cu) ..... max. 0,0005 %  
 heavy metals (as Pb) ..... max. 0,0005 %  
 iron (Fe) ..... max. 0,0002 %  
 lead (Pb) ..... max. 0,0002 %  
 zinc (Zn) ..... max. 0,0005 %  
 sulfur compounds (as S) ..... max. 0,002 %  
 substances reducing KMnO<sub>4</sub> ..... passes test  
 residue on ignition ..... max. 0,005 %

Art. No.	Volume	Container
AC05650500	500 g	Ⓜ
AC05651000	1 kg	Ⓜ
AC0565005P	5 kg	Ⓜ
AC0565025P	25 kg	Ⓜ

### AC0566 Benzoic acid, secondary standard for volumetric titrations, Titrasure®



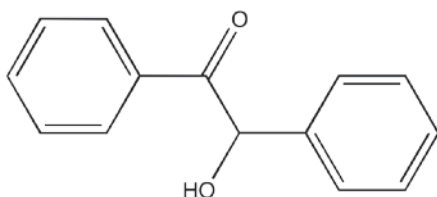
assay (on dried sample) ..... min. 99,5 %  
 melting point ..... 122 - 123 °C  
 insoluble in CH<sub>3</sub>OH ..... max. 0,005 %  
 chlorine compounds (as Cl) ..... max. 0,005 %

sulfur compounds (as S) ..... max. 0,002 %  
 heavy metals (as Pb) ..... max. 0,0005 %  
 substances reducing KMnO<sub>4</sub> ..... passes test  
 residue on ignition ..... max. 0,005 %

Art. No.	Volume	Container
AC05660080	80 g	Ⓜ

## Benzoin

BE0270 Benzoin, synthesis grade



- Synonyms:  $\alpha$ -Hydroxy- $\alpha$ -phenylacetophenone
- $C_{14}H_{12}O_2$
- $M = 212,25$  g/mol
- CAS [119-53-9]
- EINECS-No.: 204-331-3
- Solub. in water: (20 °C): insoluble
- Melting point: 132 - 134 °C
- Boiling point: 344 °C
- Flash pt. 182 °C
- Ignition temp.: 182 °C
- Vapour pressure: (136 °C) 1,3 hPa
- LD 50 (oral, rat): 6400 mg/kg
- Tariff number: 2914 40 90 00

- Applications: synthesis of organic products, laboratory reagent.

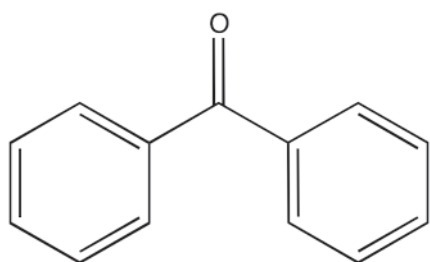
### Specifications:

assay (G.C.) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 residue on ignition ..... max. 0,05 %  
 water (K.F.) ..... max. 0,2 %

Art. No.	Volume	Container
BE02700250	250 g	Ⓜ
BE02701000	1 kg	Ⓜ

## Benzophenone

## BE0245 Benzophenone, synthesis grade



- Synonyms: Diphenyl ketone
- $C_{15}H_{10}O$
- $M = 182,22$  g/mol
- CAS [119-61-9]
- EINECS-No.: 204-337-6
- Solub. in water: (20 °C): insoluble
- Melting point: 47 - 49 °C
- Boiling point: 304 - 306 °C
- Flash pt. 150 °C
- Vapour pressure: (108 °C) 1,3 hPa
- LD 50 (oral, rat): > 10000 mg/kg
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning

- GHS-H sentences: H410
- GHS-P sentences: P273 - P391 - P501a
- Tariff number: 2914 39 00 90
- Applications: analytical chemistry, for pharmaceuticals synthesizing.

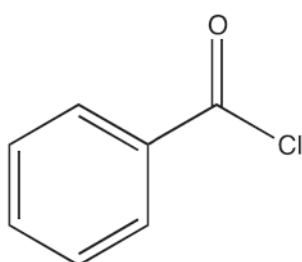
**Specifications:**

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,03 %

Art. No.	Volume	Container
BE02450250	250 g	
BE02451000	1 kg	

## Benzoyl chloride

## CL0270 Benzoyl chloride, synthesis grade



- Synonyms: Benzenecarbonyl chloride, Benzoic acid chloride
- $C_7H_5ClO$
- $M = 140,57$  g/mol
- CAS [98-88-4]
- EINECS-No.: 202-710-8
- Density: 1,21 g/cm<sup>3</sup>
- Solub. in water: (20 °C): hydrolysis reaction
- Melting point: -0,6 °C
- Boiling point: (4 hPa) 49 °C
- Flash pt. 72 °C
- Ignition temp.: 600 °C
- Vapour pressure: (20 °C) 0,5 hPa
- LD 50 (oral, rat): 2460 mg/kg
- EC-Index-No.: 607-012-00-0
- ADR: 8 C3 II UN 1736
- IMDG: 8 II UN 1736
- IATA/ICAO: 8 II UN 1736
- GHS-signal word: Danger

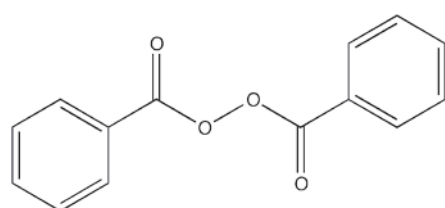
- GHS-H sentences: H314 - H302 - H312 - H332 - H317
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2916 32 90 00
- Applications: analytical chemistry, synthesis of organic products.

**Specifications:**

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,210 - 1,214  
 residue on ignition . . . . .max. 0,01 %

Art. No.	Volume	Container
CL02701000	1 l	
CL0270025A	25 l	

## Benzoyl peroxide



- Synonyms: Dibenzoyl peroxide
- $C_{14}H_{10}O_4$
- $M = 242,23$  g/mol
- CAS [94-36-0]
- EINECS-No.: 202-327-6
- Solub. in water: (20 °C): almost insoluble
- Melting point: 100 - 105 °C (decomposes)
- LD 50 (oral, rat): > 5000 mg/kg
- EC-Index-No.: 617-008-00-0
- ADR: 5.2 P1 UN 3104

- IMDG: 5.2 UN 3104
- IATA/ICAO: 5.2 UN 3104
- GHS-signal word: Danger
- GHS-H sentences: H241 - H319 - H317
- GHS-P sentences: P210 - P305 + P351 + P338 - P321 - P410 - P411a + P235 - P501a
- Tariff number: 2916 32 10 00
- Applications: oxidizing agent, catalyst, synthesis of polymers, in pharma industry.
- Appearance: White powder

PE0165 Benzoyl peroxide, moistened with 25% H<sub>2</sub>O, synthesis grade

assay (iodometric, on dried sample) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,1 %  
 water . . . . .approx. 25 %

Art. No.	Volume	Container
PE01650100	100 g	
PE01650250	250 g	
PE01651000	1 kg	

PE0160 Benzoyl peroxide, moistened with 25% H<sub>2</sub>O, extra pure, Pharmpur®, Ph Eur, BP

assay (iodometric) . . . . .70 - 77 %  
 identity (IR-spectrum) . . . . .passes test  
 acidity . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,4 %  
 dibenzoyl peroxide . . . . .passes test

related substances . . . . .passes test  
 water . . . . .min. 20 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
PE01600100	100 g	
PE01600250	250 g	

# Benzyl

## Benzyl acetate

### AC0080 Benzyl acetate, synthesis grade

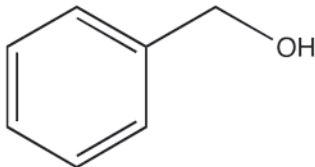
- Synonyms: Acetic acid benzyl ester
- $C_9H_{10}O_2$
- M = 150,18 g/mol
- CAS [140-11-4]
- EINECS-No.: 205-399-7
- Density: 1,06 g/cm<sup>3</sup>
- Solub. in water: (20 °C): slightly miscible
- Melting point: -51 °C
- Boiling point: 205 - 207 °C
- Flash pt. 95 °C
- Ignition temp.: 460 °C
- Vapour pressure: (25 °C) 1,9 hPa
- Refraction index: (n 20 °C/D) 1,5006
- LD 50 (oral, rat): 2490 mg/kg
- Tariff number: 2915 39 50 00
- Applications: synthesis of organic products, analytical chemistry, perfumery.

#### Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,055 - 1,056  
 residue on ignition . . . . .max. 0,01 %

Art. No.	Volume	Container
AC00801000	1 l	Ø

## Benzyl alcohol



- Synonyms: Phenylmethanol, Phenylcarbinol
- $C_7H_8O$
- M = 108,14 g/mol
- CAS [100-51-6]
- EINECS-No.: 202-859-9
- Density: 1,05 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 40 g/l
- Melting point: -15,3 °C
- Boiling point: 205 °C
- Flash pt. 101 °C
- Ignition temp.: 435 °C
- Vapour pressure: (20 °C) 0,13 hPa

- Refraction index: (n 20 °C/D) 1,5396
- Dielectric const.: (25 °C) 13,1
- LD 50 (oral, rat): 1230 mg/kg
- EC-Index-No.: 603-057-00-5
- GHS-signal word: Warning
- GHS-H sentences: H302 - H332
- GHS-P sentences: P261 - P264 - P301 + P312 - P304 + P340 - P312 - P501a
- Tariff number: 2906 21 00 00
- Applications: analytical chemistry, perfumery, microscopy.

### AL0160 Benzyl alcohol, synthesis grade

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/20°) . . . . .1,043 - 1,049  
 residue on ignition . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AL01601000	1 l	Ø
AL01602500	2,5 l	Ø
AL0160005P	5 l	Ⓟ
AL0160025P	25 l	Ⓟ

### AL0162 Benzyl alcohol, extra pure, Pharmpur®, Ph Eur, BP, NF

assay (G.C.) . . . . .98 - 100,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/20°) . . . . .1,043 - 1,049  
 appearance of solution . . . . .clear and colourless  
 refractive index n<sub>20</sub>/D . . . . .1,538 - 1,541  
 acidity . . . . .passes test  
 benzaldehyde (G.C.) . . . . .max. 0,15 %  
 cyclohexylmethanol (G.C.) . . . . .max. 0,1 %  
 fats and fixed oils . . . . .max. 5 %  
 toluene (G.C.) . . . . .max. 0,01 %

sum of peaks with a retention less than that of benzyl alcohol (G.C.) . . . . .max. 0,04 %  
 sum of peaks with a retention greater than that of benzyl alcohol (G.C.) . . . . .max. 0,3 %  
 disregard limit . . . . .max. 0,0001 %  
 peroxide index . . . . .max. 5  
 residue on evaporation . . . . .max. 0,05 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AL01621000	1 l	Ø
AL01622500	2,5 l	Ø
AL0162005P	5 l	Ⓟ
AL0162025A	25 l	Ⓟ
AL0162200L	200 l	Ⓟ

### AL0161 Benzyl alcohol, reagent grade, Reag. Ph Eur

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,001 meq/g  
 alkalinity . . . . .max. 0,002 meq/g  
 benzaldehyde (G.C.) . . . . .max. 0,1 %  
 halogen compounds (as Cl) . . . . .max. 0,001 %  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %

calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,00002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 heavy metals (as Pb) . . . . .max. 0,0001 %  
 iron (Fe) . . . . .max. 0,0001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %

zinc (Zn) . . . . .max. 0,00001 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . .max. 0,001 %  
 residue on ignition . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AL01611000	1 l	Ø
AL01612500	2,5 l	Ø
AL0161025P	25 l	Ⓟ

### AL0163 Benzyl alcohol, 99,5%, anhydrous (max. 0,01% H<sub>2</sub>O)

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,001 meq/g  
 alkalinity . . . . .max. 0,002 meq/g  
 halogen compounds (as Cl) . . . . .max. 0,001 %  
 benzaldehyde (G.C.) . . . . .max. 0,1 %  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %

calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,00002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 heavy metals (as Pb) . . . . .max. 0,0001 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %

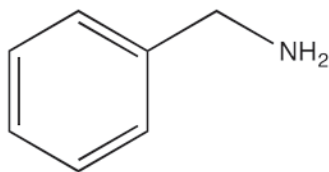
zinc (Zn) . . . . .max. 0,00001 %  
 peroxide index . . . . .max. 5  
 residue on ignition . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,01 %

Art. No.	Volume	Container
AL01630100	100 ml	Ø
AL01630500	500 ml	Ø
AL01631000	1 l	Ø



## Benzylamine

## BE0075 Benzylamine, synthesis grade



- Synonyms: Phenylmethylamine
- $C_7H_9N$
- $M = 107,16 \text{ g/mol}$
- CAS [100-46-9]
- EINECS-No.: 202-854-1
- Density:  $0,98 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point: 10 °C
- Boiling point: 185 °C
- Flash pt. 65 °C
- Ignition temp.: ~ 390 °C
- Vapour pressure: (20 °C) 0,6 hPa
- Refraction index: (n 20 °C/D) 1,5438
- LD 50 (oral, rat): ~ 1130 mg/kg
- EC-Index-No.: 612-047-00-X
- ADR: 8 C7 III UN 2735
- IMDG: 8 III UN 2735
- IATA/ICAO: 8 III UN 2735
- GHS-signal word: Danger

- GHS-H sentences: H314 - H226 - H302 - H312
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2921 49 00 90
- Applications: synthesis of organic products, analytical chemistry, perfumery.

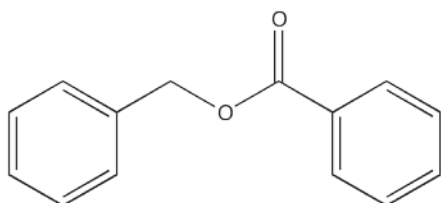
## Specifications:

assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....0,982 - 0,983  
 residue on ignition .....max. 0,01 %  
 water (K.F.) .....max. 0,2 %

Art. No.	Volume	Container
BE00750250	250 ml	Ø
BE00751000	1 l	Ø

## Benzyl benzoate

## BE0185 Benzyl benzoate, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms: Benzoic acid benzyl ester
- $C_{14}H_{12}O_2$
- $M = 212,25 \text{ g/mol}$
- CAS [120-51-4]
- EINECS-No.: 204-402-9
- Density:  $1,12 \text{ g/cm}^3$
- Solub. in water: (20 °C): non-miscible
- Melting point: 21 °C
- Boiling point: 324 °C
- Flash pt. 158 °C
- Ignition temp.: 480 °C
- Vapour pressure: (20 °C) < 0,1 hPa
- Refraction index: (n 21 °C/D) 1,5681
- LD 50 (oral, rat): 1900 mg/kg
- EC-Index-No.: 607-085-00-9
- ADR: 9 M6 III UN 3082
- IMDG: 9 III UN 3082
- IATA/ICAO: 9 III UN 3082
- GHS-signal word: Warning
- GHS-H sentences: H302 - H411
- GHS-P sentences: P273 - P264 - P270 - P301 + P312 - P330 - P501a

- Tariff number: 2916 31 00 00
- Applications: analytical chemistry, in food industry, perfumery, in pharma industry.
- Appearance: Oily liquid

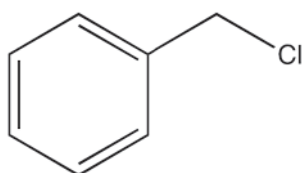
## Specifications:

assay (acidimetric, after saponification) ..... 99 - 100,5 %  
 identity (IR-spectrum) .....passes test  
 density (20°/20°) .....1,116 - 1,122  
 refractive index n20/D .....1,568 - 1,570  
 freezing point .....min. 17 °C  
 acidity .....passes test  
 benzaldehyde (G.C.) .....max. 0,05 %  
 residue on ignition .....max. 0,1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
BE01851000	1 l	Ø
BE0185025P	25 l	P

## Benzyl chloride

## CL0250 Benzyl chloride, synthesis grade



- Synonyms:  $\alpha$ -Chlorotoluene, Chloromethylbenzene
- $C_7H_7Cl$
- $M = 126,59 \text{ g/mol}$
- CAS [100-44-7]
- EINECS-No.: 202-853-6
- Density:  $1,10 \text{ g/cm}^3$
- Solub. in water: (30 °C): 460 mg/l
- Melting point: -41,2 °C
- Boiling point: (79 hPa) 100 °C
- Flash pt. 60 °C
- Ignition temp.: 585 °C
- Vapour pressure: (20 °C) 1,2 hPa
- Refraction index: (n 20 °C/D) 1,5380
- LD 50 (oral, rat): 440 mg/kg
- EC-Index-No.: 602-037-00-3
- ADR: 6.1 TC1 II UN 1738
- IMDG: 6.1 II UN 1738
- IATA/ICAO: 6.1 II UN 1738
- GHS-signal word: Danger

- GHS-H sentences: H331 - H350 - H373 - H318 - H226 - H302 - H315 - H335
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2903 99 90 90
- Applications: perfumery, for pharmaceuticals synthesizing, manufacture of dyes, manufacturing of synthetic resins.

## Specifications:

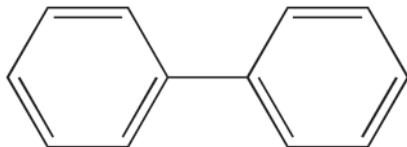
assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....1,099 - 1,100  
 residue on ignition (as  $SO_2$ ) .....max. 0,005 %

Art. No.	Volume	Container
CL02501000	1 l	Ø

# Biphen

## Biphenyl

### BI0033 Biphenyl, synthesis grade



- Synonyms: Diphenyl, Phenylbenzene
- $C_{12}H_{10}$
- M = 154,21 g/mol
- CAS [92-52-4]
- EINECS-No.: 202-163-5
- Solub. in water: (20 °C): insoluble
- Melting point: 68 - 70 °C
- Boiling point: 255 °C
- Flash pt. 113 °C
- Ignition temp.: 570 °C
- Vapour pressure: (20 °C) 0,07 hPa
- LD 50 (oral, rat): 2140 mg/kg
- EC-Index-No.: 601-042-00-8
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077

- GHS-signal word: Warning
- GHS-H sentences: H410 - H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2902 90 30 00
- Applications: synthesis of organic products, analytical chemistry.

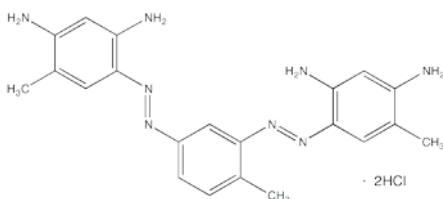
#### Specifications:

assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 residue on ignition .....max. 0,01 %

Art. No.	Volume	Container
BI00330500	500 g	

## Bismarck brown R, C.I. 21010

### PA0150 Bismarck brown R, C.I. 21010, for microscopy



- Synonyms: Basic brown 4, Vesuvin, 4,4'-(1,3-Phenylenebis(azo))bis(1,3-benzenediamine)
- $C_{21}H_{24}N_8 \cdot 2HCl$
- M = 461,40 g/mol
- CAS [5421-66-9]
- EINECS-No.: 226-541-4
- Melting point: 222 °C
- Tariff number: 2927 00 00 90
- Applications: dye (for biology, cosmetics).

#### Specifications:

Absorption maximum  $\lambda$  (in  $H_2O$ ) .....463 - 467 nm  
 Absorptivity (A1%/1 cm;  $\lambda_1$  max) .....min. 250  
 related substances (TLC) .....passes test  
 loss on drying (110 °C) .....max. 10 %

Art. No.	Volume	Container
PA01500050	50 g	

## Bismuth(III) hydroxide nitrate

### BI0225 Bismuth(III) hydroxide nitrate, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms: Bismuth subnitrate, Bismuth nitrate basic
- $Bi_5O(OH)_9(NO_3)_4$
- M = 1461,99 g/mol
- CAS [1304-85-4]
- EINECS-No.: 215-136-8
- Solub. in water: (20 °C): almost insoluble
- Melting point: 260 °C
- ADR: 5.1 O2 II UN 1477
- IMDG: 5.1 II UN 1477
- IATA/ICAO: 5.1 II UN 1477
- GHS-signal word: Danger
- GHS-H sentences: H272
- GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a
- Tariff number: 2834 29 80 00

- Applications: analytical chemistry, cosmetics, in pharma industry.
- Appearance: Colourless solid

#### Specifications:

assay (complexometric, as Bi, on dried sample) .....71 - 74 %  
 assay (complexometric, as  $Bi_2O_3$ , on dried sample) .....min. 79 %  
 identification .....passes test  
 acidity .....passes test  
 chlorides (Cl) .....max. 0,035 %  
 carbonates .....passes test  
 sulfates ( $SO_4$ ) .....passes test  
 arsenic (As) .....max. 0,0008 %

ammonium salts .....passes test  
 copper (Cu) .....max. 0,005 %  
 lead (Pb) .....max. 0,002 %  
 silver (Ag) .....max. 0,0025 %  
 alkali and alkaline earth metals .....max. 0,5 %  
 substances not precipitated by ammonia .....max. 1 %  
 loss on drying (105 °C) .....max. 3 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
BI02250250	250 g	

## Bismuth oxide

### BI0200 Bismuth oxide, synthesis grade

- $Bi_2O_3$
- M = 465,96 g/mol
- CAS [1304-76-3]
- EINECS-No.: 215-134-7
- Solub. in water: (20 °C): almost insoluble
- Melting point: 817 °C
- Boiling point: 1890 °C
- LD 50 (oral, rat): 5000 mg/kg

- Tariff number: 2825 90 80 00
- Applications: analytical chemistry, catalyst, in the rubber industry, synthesis of organic products.

#### Specifications:

assay (complexometric) .....min. 99,5 %  
 nitrates ( $NO_3$ ) .....max. 0,05 %  
 arsenic (As) .....max. 0,0005 %

copper (Cu) .....max. 0,005 %  
 residue on ignition (1000 °C) .....max. 0,5 %

Art. No.	Volume	Container
BI02000100	100 g	

## Biuret's reagent

### RE0003 Biuret's reagent, for determination of proteins

- Density: 1,06 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-H sentences: H412
- GHS-P sentences: P273 - P501a
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, for determination of proteins.
- Appearance: Blue liquid

#### Specifications:

Suitable for determination of proteins.

Art. No.	Volume	Container
RE00030100	100 ml	

## Bleaching agent, solution according to Gram

## DE0010 Bleaching agent, solution according to Gram



- CAS [37348-17-7]
- Density: 0,79 g/cm<sup>3</sup>
- Solub. in water: (20 °C): soluble
- Flash pt. -10 °C
- Ignition temp.: > 425 °C
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993
- GHS-signal word: Danger

- GHS-H sentences: H225 - H319 - H336
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: microscopy.

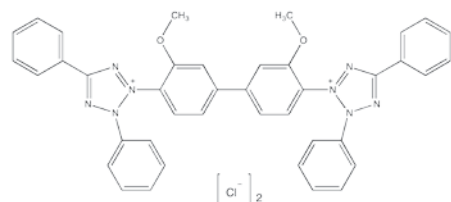
**Specifications:**

suitability for microscopy . . . . . passes test  
contains acetone and ethanol

Art. No.	Volume	Container
DE0010G100	100 ml	
DE0010O500	500 ml	
DE0010I000	1 l	
DE0010Z500	2,5 l	

## Blue tetrazolium

## AZ0220 Blue tetrazolium, for microscopy



- Synonyms: 3,3'-(3,3'-Dimethoxy[1,1'-bi-phenyl]-4,4'-diyl)bis[2,5-diphenyl-2H-tetrazolium] dichloride
- C<sub>40</sub>H<sub>32</sub>Cl<sub>2</sub>N<sub>8</sub>O<sub>2</sub>
- M = 727,66 g/mol
- CAS [1871-22-3]
- EINECS-No.: 217-488-8
- Solub. in water: (20 °C): ~ 3 g/l
- Melting point: 245 - 247 °C
- EC-Index-No.: 611-024-00-1
- GHS-signal word: Danger
- GHS-H sentences: H350
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2933 99 90 90

- Applications: microscopy (dye), for histology.

**Specifications:**

Absorption maximum λ (in methanol) . . . . . 250 - 255 nm  
Absorptivity (A1%/1 cm; λ, 0,001%; methanol, referred to dried sample) . . . . . 700  
suitability for microscopy . . . . . passes test  
loss on drying (110 °C) . . . . . max. 3 %

Art. No.	Volume	Container
AZ0220O001	1 g	
AZ0220O005	5 g	

## Boric acid

- Synonyms: Orthoboric acid
- H<sub>3</sub>BO<sub>3</sub>
- M = 61,84 g/mol
- CAS [10043-35-3]
- EINECS-No.: 233-139-2
- Solub. in water: (20 °C): 46,5 g/l

- Melting point: 185 °C (decomposes)
- Vapour pressure: (20 °C) 2,7 hPa
- LD 50 (oral, rat): 2660 mg/kg
- EC-Index-No.: 005-007-00-2
- GHS-signal word: Danger
- GHS-H sentences: H360FD

- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2810 00 90 00
- Applications: in building materials, in porcelain industry, cosmetics, manufacture of dyes, photography, analytical chemistry.

## AC0577 Boric acid, extra pure, Pharmpur®, Ph Eur, BP, NF



assay (acidimetric) . . . . . 99,0 - 100,5 %  
identification . . . . . passes test  
appearance of solution . . . . . clear and colourless  
pH (3,3 %, H<sub>2</sub>O) . . . . . 3,8 - 4,8  
solubility in ethanol 96 % . . . . . passes test  
sulfates (SO<sub>4</sub>) . . . . . max. 0,045 %

heavy metals (as Pb) . . . . . max. 0,0015 %  
organic matter . . . . . passes test  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC0577O500	500 g	
AC0577I000	1 kg	
AC0577O05P	5 kg	
AC0577O25P	25 kg	

## AC0582 Boric acid, powder, Pharmpur®, Ph Eur, GMP, suitable for use as excipient



assay (acidimetric) . . . . . 99,0 - 100,5 %  
identification . . . . . passes test  
appearance of solution . . . . . clear and colourless  
pH (3,3 %, H<sub>2</sub>O) . . . . . 3,8 - 4,8  
solubility in ethanol 96 % . . . . . passes test  
sulfates (SO<sub>4</sub>) . . . . . max. 0,045 %

heavy metals (as Pb) . . . . . max. 0,0015 %  
organic matter . . . . . passes test  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
AC0582I000	1 kg	
AC0582O25P	25 kg	

## AC0578 Boric acid, reagent grade, ACS, ISO, Reag. Ph Eur



assay (acidimetric) . . . . . 99,5 - 100,5 %  
identity . . . . . passes test  
appearance of solution . . . . . clear and colourless  
insoluble in CH<sub>3</sub>OH . . . . . max. 0,005 %  
solubility in ethanol 96 % . . . . . passes test  
pH (3,3 %, H<sub>2</sub>O) . . . . . 3,8 - 4,8  
chlorides (Cl) . . . . . max. 0,001 %  
phosphates (as PO<sub>4</sub>) . . . . . max. 0,001 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,002 %  
calcium (Ca) . . . . . max. 0,005 %  
heavy metals (as Pb) . . . . . max. 0,001 %  
iron (Fe) . . . . . max. 0,0005 %  
lead (Pb) . . . . . max. 0,001 %  
organic matter . . . . . passes test  
non-volatile matter with methanol-HCl . . . . . max. 0,05 %

Art. No.	Volume	Container
AC0578O500	500 g	
AC0578I000	1 kg	
AC0578O05P	5 kg	
AC0578O25P	25 kg	

## AC0580 Boric acid, molecular biology grade



assay (acidimetric) . . . . . min. 99,5 %  
absorbance of an aqueous solution 0,05 M in a 1 cm cell at 260 nm . . . . . max. 0,01 AU

absorbance of an aqueous solution 0,05 M in a 1 cm cell at 280 nm . . . . . max. 0,01 AU  
heavy metals (as Pb) . . . . . max. 0,001 %  
DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
AC0580O500	500 g	
AC0580I000	1 kg	
AC0580O05P	5 kg	

# Borica

## Boric acid, solution 4%

### AC0579 Boric acid, solution 4% w/v

- Synonyms: Orthoboric acid solution
- $H_3BO_3$
- M = 61,83 g/mol
- CAS [10043-35-3]
- EINECS-No.: 233-139-2
- Density: 1,015 g/cm<sup>3</sup>
- GHS-H sentences: EUH210
- Tariff number: 2810 00 90 00

- Applications: analytical chemistry, in the pharmaceuticals industry, in pesticide compositions, titrant in volumetric analysis.

#### Specifications:

assay (acidimetric) . . . . . approx. 4 %  
chlorides (Cl) . . . . . max. 0,0003 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,0005 %  
phosphates (as PO<sub>4</sub>) . . . . . max. 0,0005 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,0005 %

arsenic (As) . . . . . max. 0,00005 %  
heavy metals (as Pb) . . . . . max. 0,0005 %  
iron (Fe) . . . . . max. 0,0001 %

Art. No.	Volume	Container
AC05791000	1 l	☒
AC0579005P	5 l	☒

## Boric acid, solution 4% w/v, with indicator

### AC0581 Boric acid, solution 4% w/v, with indicator, for Kjeldahl

- GHS-H sentences: EUH210 -
- Tariff number: 3822 00 00 00

#### Specifications:

assay (acidimetric) . . . . . approx. 4 %

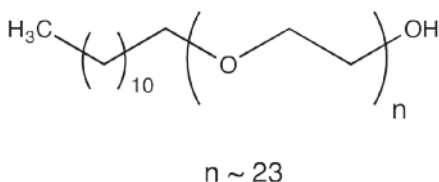
chlorides (Cl) . . . . . max. 0,0003 %  
phosphates (as PO<sub>4</sub>) . . . . . max. 0,0005 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,0005 %  
arsenic (As) . . . . . max. 0,00005 %  
heavy metals (as Pb) . . . . . max. 0,0005 %

iron (Fe) . . . . . max. 0,0001 %

Art. No.	Volume	Container
AC05811000	1 l	☒

## Brij® 35

### BR0017 Brij® 35 (Brij is a trademark of ICI America Inc.)



- Synonyms: Polyoxyethylene lauryl ether, Polyethyleneglycol lauryl ether
- $(C_{12}H_{25}O)_n C_{12}H_{25}O$
- CAS [9002-92-0]
- EINECS-No.: 500-002-6
- Solub. in water: (25 °C): soluble
- Melting point: 36 - 42 °C
- Boiling point: > 100 °C
- Flash pt. 149 °C
- Vapour pressure: (20 °C) 1,3 hPa
- LD 50 (oral, rat): 1000 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302 - H319

- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P301 + P312 - P337 + P313 - P501a
- Tariff number: 3402 13 00 90
- Applications: solvents, emulsifier, for pharmaceuticals synthesizing.

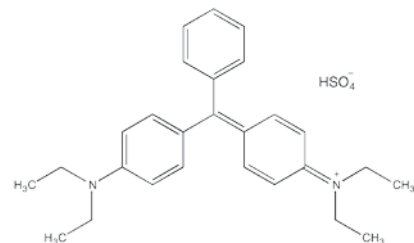
#### Specifications:

hydroxyl index . . . . . 45 - 50  
water (K.F.) . . . . . max. 3 %

Art. No.	Volume	Container
BR00170250	250 g	☒
BR00171000	1 kg	☒

## Brilliant green, C.I. 42040

### VE0060 Brilliant green, C.I. 42040, for microscopy



- Synonyms: Diamond green G, Ethyl green, Solid green
- $C_{27}H_{34}N_2O_4S$
- M = 482,64 g/mol
- CAS [633-03-4]
- EINECS-No.: 211-190-1
- Solub. in water: (20 °C): ~ 100 g/l
- Melting point: ~ 180 °C
- LD 50 (oral, rat): ~ 300 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 3204 13 00 90

- Applications: analytical chemistry, for microbiology, manufacture of dyes, indicator.

#### Specifications:

Absorption maximum  $\lambda$   
(in ethanol 50 %) . . . . . 628 - 632 nm  
Absorptivity (A1%/1 cm;  $\lambda$   
max.) . . . . . 1750 - 2250  
loss on drying (135 °C) . . . . . max. 5 %

Art. No.	Volume	Container
VE00600025	25 g	☒
VE00600100	100 g	☒

## Bromide-bromate, volumetric solutions

### BR0070 Bromide-bromate, solution 0,05 mol/l (0,1 N), according to ASTM D5776-99

- Br / BrO<sub>3</sub>
- Density: ~ 1,018 g/cm<sup>3</sup>
- LD 50 (oral, rat): 321 mg/kg (toxic component)
- GHS-signal word: Danger
- GHS-H sentences: H350
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

#### Specifications:

factor . . . . . 0,999 - 1,001  
1 ml = 0,0078 g Br<sub>2</sub> This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
BR00701000	1 l	☒

## Bromine index solution

## ME0736 Bromine index solution, according to ASTM D5776-99



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 CT1 II UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- GHS-signal word: Danger
- GHS-H sentences: H360D - H371 - H335 - H314 - H226 - H312
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for determination of bromine index.

sulfuric acid 98 % (1: 5 in H<sub>2</sub>O) . . . . . 18 ml**Specifications:**

mixture according to:  
acetic acid (CH<sub>3</sub>COOH) . . . . . 714 ml  
methanol (CH<sub>3</sub>OH) . . . . . 134 ml  
n-methyl-2-pyrrolidone . . . . . 134 ml

Art. No.	Volume	Container
ME07361000	1 l	0
ME07362500	2,5 l	0

## Bromine water

## AG0005 Bromine water, saturated solution



- Br<sub>2</sub>
- M = 159,92 g/mol
- CAS [7726-95-6]
- EINECS-No.: 231-778-1
- Density: ~ 1,008 g/cm<sup>3</sup>
- EC-Index-No.: 035-001-00-5
- ADR: 6.1 TC3 II UN 3289
- IMDG: 6.1 II UN 3289
- IATA/ICAO: 6.1 II UN 3289

- GHS-signal word: Danger
- GHS-H sentences: H318 - H315
- GHS-P sentences: P280 - P305 + P351 + P338 - P310 - P321 - P362 - P332 + P313
- Tariff number: 2801 30 90 00
- Applications: analytical chemistry, laboratory reagent, manufacture of dyes, fumigant, inorganic salts, in the pharmaceuticals industry.

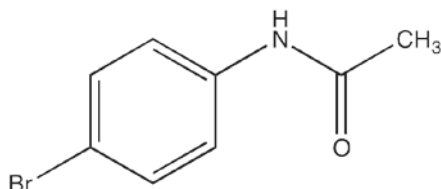
**Specifications:**

assay (bromometric) . . . . . approx. 3 %

Art. No.	Volume	Container
AG00050500	500 ml	0

## p-Bromoacetanilide

## BR0030 p-Bromoacetanilide, extra pure



- Synonyms: N-Acetyl-p-bromoaniline, 4'-Bromoacetanilide
- C<sub>9</sub>H<sub>9</sub>BrNO
- M = 214,07 g/mol
- CAS [103-88-8]
- EINECS-No.: 203-154-9
- Solub. in water: (20 °C): insoluble
- Melting point: 164 - 167 °C
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a

- Tariff number: 2924 29 95 99
- Applications: synthesis of organic products, for pharmaceuticals synthesizing.

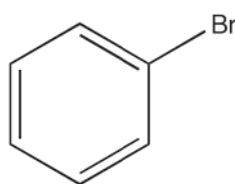
**Specifications:**

assay (HPLC) . . . . . min. 98 %  
identity (IR-spectrum) . . . . . passes test

Art. No.	Volume	Container
BR00300100	100 g	0

## Bromobenzene

## BR0060 Bromobenzene, synthesis grade



- Synonyms: Phenyl bromide
- C<sub>6</sub>H<sub>5</sub>Br
- M = 157,02 g/mol
- CAS [108-86-1]
- EINECS-No.: 203-623-8
- Density: 1,49 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 4 g/l
- Melting point: -31 °C
- Boiling point: 156 °C
- Flash pt. 51 °C
- Ignition temp.: 565 °C
- Vapour pressure: (20 °C) 4 hPa
- Refraction index: (n 20 °C/D) 1,5602
- Dielectric const.: (20 °C) 5,4
- LD 50 (oral, rat): 2699 mg/kg
- EC-Index-No.: 602-060-00-9
- ADR: 3 F1 III UN 2514
- IMDG: 3 III UN 2514
- IATA/ICAO: 3 III UN 2514
- GHS-signal word: Warning

- GHS-H sentences: H226 - H315 - H411
- GHS-P sentences: P210 - P241 - P280 - P303 + P361 + P353 - P321 - P501a
- Tariff number: 2903 99 90 90
- Applications: analytical chemistry, for organometallic compounds synthesizing.
- Appearance: Colourless to slightly yellow clear liquid

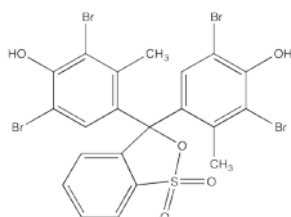
**Specifications:**

assay (G.C.) . . . . . min. 99 %  
identity (IR-spectrum) . . . . . passes test  
density (20°/4°) . . . . . 1,494 - 1,496  
residue on evaporation . . . . . max. 0,005 %  
water (K.F.) . . . . . max. 0,02 %

Art. No.	Volume	Container
BR00600250	250 ml	0
BR00601000	1 l	0

## Bromocresol green

## VE0070 Bromocresol green, indicator



- Synonyms: 3,3',5,5'-Tetrabromo-m-cresolsulfonphthalein, BCG
- C<sub>21</sub>H<sub>14</sub>Br<sub>4</sub>O<sub>5</sub>S
- M = 698,04 g/mol
- CAS [76-60-8]
- EINECS-No.: 200-972-8
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, indicator.

**Specifications:**

pH range (yellow to blue) . . . . . 3,8 - 5,4  
Absorption maximum λ<sub>1</sub> (pH 3,5) . . . . . 444 - 445 nm

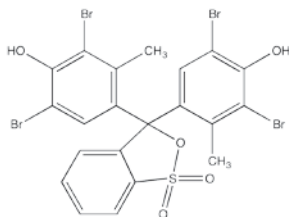
Absorption maximum λ<sub>2</sub> (pH 5,4) . . . . . 615 - 618 nm  
Absorptivity (A1%/1 cm; λ<sub>1</sub>, pH 3,5; on dried sample) . . . . . 265 - 275  
Absorptivity (A1%/1 cm; λ<sub>2</sub>, pH 5,4; on dried sample) . . . . . 530 - 570  
loss on drying (110 °C) . . . . . max. 5 %

Art. No.	Volume	Container
VE00700001	1 g	0
VE00700005	5 g	0
VE00700025	25 g	0

# Bromoc

## Bromocresol green, solution 0,04%

### VE0075 Bromocresol green, solution 0,04%, indicator



- Synonyms: 3,3',5,5'-Tetrabromo-m-cresolsulfonphthalein, BCG
- $C_{21}H_{16}Br_4O_5S$
- $M = 698,04$  g/mol
- CAS [76-60-8]
- EINECS-No.: 200-972-8
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, indicator.

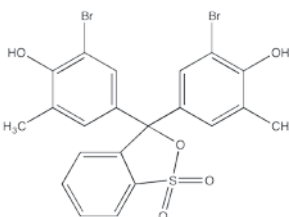
#### Specifications:

pH range (yellow to blue) . . . . . 3, 6 - 5,4

Art. No.	Volume	Container
VE00750100	100 ml	

## Bromocresol purple

### PU0020 Bromocresol purple, indicator



- Synonyms: 5',5''-Dibromo-o-cresolsulfonphthalein
- $C_{21}H_{16}Br_2O_5S$
- $M = 540,24$  g/mol
- CAS [115-40-2]
- EINECS-No.: 204-087-8
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, indicator.

Absorption maximum  $\lambda_{21}$  (pH 6,8) . . . . . 588 - 590 nm  
Absorptivity (A1%/1 cm;  $\lambda_{21}$ , pH 5,2; on dried sample) . . . . . 400 - 450  
Absorptivity (A1%/1 cm;  $\lambda_{21}$ , pH 6,8; on dried sample) . . . . . 1000 - 1100  
loss on drying (110 °C) . . . . . max. 1 %

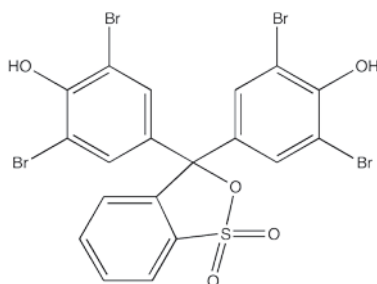
#### Specifications:

pH range (greenish-yellow to blue-violet) . . . . . 5,2 - 6,8  
Absorption maximum  $\lambda_1$  (pH 5,2) . . . . . 427 - 431 nm

Art. No.	Volume	Container
PU00200005	5 g	
PU00200025	25 g	

## Bromophenol blue

### AZ0125 Bromophenol blue, indicator, ACS



- Synonyms: BPB, 3,3',5,5'-Tetrabromophenolsulfonphthalein
- $C_{19}H_{10}Br_4O_5S$
- $M = 669,96$  g/mol
- CAS [115-39-9]
- EINECS-No.: 204-086-2
- Solub. in water: (20 °C): almost insoluble
- Melting point: 273 °C (decomposes)
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, indicator.

Absorption maximum  $\lambda_1$  (pH 3,0) . . . . . 434 - 439 nm  
Absorption maximum  $\lambda_2$  (pH 4,6) . . . . . 590 - 593 nm  
Absorptivity (A1%/1 cm;  $\lambda_1$ ; pH 3,0 on dried sample) . . . . . 350 - 385  
Absorptivity (A1%/1 cm;  $\lambda_2$ ; pH 4,6 on dried sample) . . . . . 940 - 1000  
transition range acc. ACS . . . . . passes test  
loss on drying (110 °C) . . . . . max. 1 %

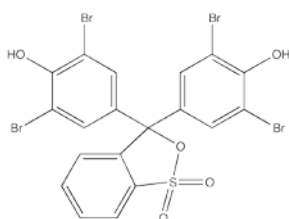
#### Specifications:

pH range (greenish-yellow to blue-violet) . . . . . 3,1 - 4,4

Art. No.	Volume	Container
AZ01250005	5 g	
AZ01250025	25 g	

## Bromophenol blue, solution 0,04%

### AZ0126 Bromophenol blue, solution 0,04%, indicator



- Synonyms: BPB
- $C_{19}H_{10}Br_4O_5S$
- $M = 669,96$  g/mol
- CAS [115-39-9]
- EINECS-No.: 204-086-2
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, titrant in volumetric analysis, indicator.

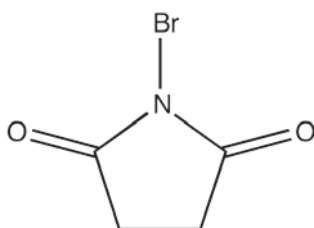
#### Specifications:

pH range (yellow to blue) . . . . . 3,0 - 4,6

Art. No.	Volume	Container
AZ0126G100	100 ml	

## N-Bromosuccinimide

### BR0120 N-Bromosuccinimide, extra pure



- Synonyms: NBS
- $C_4H_4BrNO_2$
- $M = 177,99$  g/mol
- CAS [128-08-5]
- EINECS-No.: 204-877-2
- Solub. in water: (25 °C): 14 g/l
- Melting point: 174 - 179 °C
- Vapour pressure: (20 °C) 14,8 hPa
- ADR: 8 C10 III UN 1759
- IMDG: 8 III UN 1759
- IATA/ICAO: 8 III UN 1759
- GHS-signal word: Warning
- GHS-H sentences: H302 - H315 - H319 - H335

- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2925 19 95 99
- Applications: for bromination, oxidizing agent.

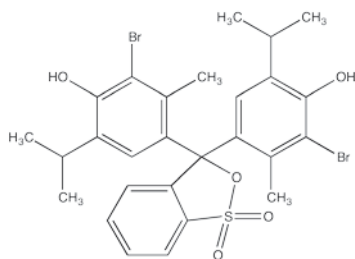
#### Specifications:

assay (iodometric) . . . . . min. 99 %  
identity (IR-spectrum) . . . . . passes test

Art. No.	Volume	Container
BR01200250	250 g	

## Bromothymol blue

## AZ0130 Bromothymol blue, indicator, ACS



- Synonyms: 3',3''-Dibromothymol-sulfonphthalein, BTB
- $C_{27}H_{26}Br_2O_5S$
- M = 624,40 g/mol
- CAS [76-59-5]
- EINECS-No.: 200-971-2
- Solub. in water: (20 °C): insoluble
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, indicator.

**Specifications:**

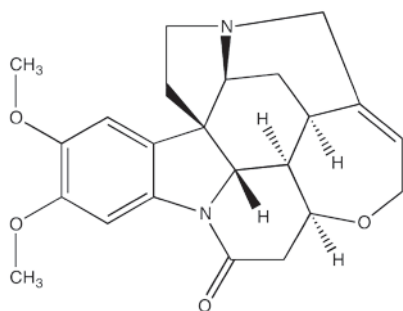
pH range (yellow to blue) . . . . . 5,8 - 7,6  
Absorption maximum  $\lambda_1$  (pH 5,8) . . . . . 430 - 435 nm

Absorption maximum  $\lambda_2$  (pH 7,6) . . . . . 615 - 618 nm  
Absorptivity (A1%/1 cm;  $\lambda_1$ ; pH 5,8 on dried sample) . . . . . 260 - 300  
Absorptivity (A1%/1 cm;  $\lambda_2$ ; pH 7,6 on dried sample) . . . . . 470 - 520  
transition range acc. ACS . . . . . passes test  
loss on drying (110 °C) . . . . . max. 3 %

Art. No.	Volume	Container
AZ01300005	5 g	0
AZ01300025	25 g	0

## Brucine

## BR0269 Brucine, synthesis grade



- Synonyms: 2,3-Dimethoxystrychnine
- $C_{23}H_{26}N_2O_4$
- M = 394,45 g/mol
- CAS [357-57-3]
- EINECS-No.: 206-614-7
- Solub. in water: (20 °C): slightly soluble
- Melting point: 176 - 180 °C
- LD 50 (oral, rat): 150 mg/kg
- EC-Index-No.: 614-006-00-1
- ADR: 6.1 T2 I UN 1570
- IMDG: 6.1 I UN 1570
- IATA/ICAO: 6.1 I UN 1570
- GHS-signal word: Danger
- GHS-H sentences: H300 - H330 - H412
- GHS-P sentences: P260 - P301 + P310 - P310 - P320 - P405 - P501a

- Tariff number: 2939 99 00 00
- Applications: synthesis of organic products, analytical chemistry, denaturing alcohols and oils.
- Appearance: White solid

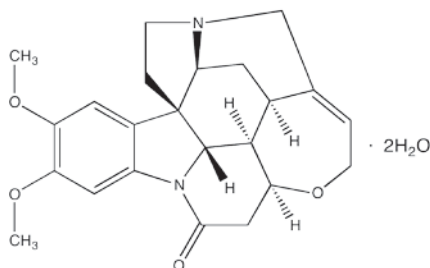
**Specifications:**

assay (DSC, on dried sample) . . . . . min. 98,5 %  
identity (IR-spectrum) . . . . . passes test  
specific rotation ( $[\alpha]_{20}^D$ ; c = 2,5, chloroform) . . . . . - 118 ° - - 128 °  
residue on ignition . . . . . max. 0,1 %  
loss on drying (105 °C, 3 h) . . . . . max. 1 %

Art. No.	Volume	Container
BR02690010	10 g	0

## Brucine dihydrate

## BR0270 Brucine dihydrate, reagent grade



- Synonyms: 2,3-Dimethoxystrychnine dihydrate
- $C_{23}H_{26}N_2O_4 \cdot 2H_2O$
- M = 430,50 g/mol
- CAS [145428-94-0]
- EINECS-No.: 206-614-7
- Solub. in water: (20 °C): slightly soluble
- EC-Index-No.: 614-006-00-1
- ADR: 6.1 T2 I UN 1570
- IMDG: 6.1 I UN 1570
- IATA/ICAO: 6.1 I UN 1570
- GHS-signal word: Danger
- GHS-H sentences: H300 - H330 - H412
- GHS-P sentences: P260 - P301 + P310 - P310 - P320 - P405 - P501a

- Tariff number: 2939 99 00 00
- Applications: synthesis of organic products, analytical chemistry, denaturing alcohols and oils.

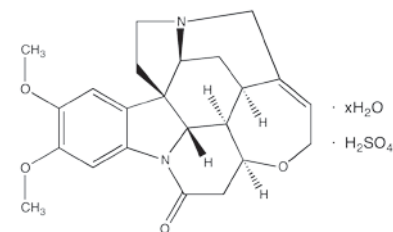
**Specifications:**

assay (titration with HClO<sub>4</sub>) . . . . . min. 99 %  
specific rotation ( $[\alpha]_{20}^D$ ; c=1, ethanol) . . . . . -75° - -80°  
nitrates (NO<sub>3</sub>) . . . . . passes test  
water (K.F.) . . . . . max. 8 %  
residue on ignition . . . . . max. 0,1 %

Art. No.	Volume	Container
BR02700005	5 g	0

## Brucine sulfate hydrate

## BR0275 Brucine sulfate hydrate, reagent grade



- Synonyms: 2,3-Dimethoxystrychnine sulfate salt
- $C_{26}H_{52}N_2O_8 \cdot H_2SO_4 \cdot xH_2O$
- M = 887,03 g/mol
- CAS [652154-10-4]
- EINECS-No.: 225-432-9
- Melting point: 180 °C
- EC-Index-No.: 614-007-00-7 [1]
- ADR: 6.1 T2 I UN 2811
- IMDG: 6.1 I UN 2811
- IATA/ICAO: 6.1 I UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H300 - H330 - H412
- GHS-P sentences: P260 - P301 + P310 - P310 - P320 - P405 - P501a

- Tariff number: 2939 99 00 00
- Applications: analytical chemistry, for pharmaceuticals synthesizing, for denaturing ethanol.

**Specifications:**

assay (titration with HClO<sub>4</sub>) . . . . . min. 98 %  
insoluble in water . . . . . passes test  
residue on ignition . . . . . max. 0,1 %

Art. No.	Volume	Container
BR02750025	25 g	0

# Buffer

## Buffer solutions, other applications

### S01013 Buffer solution for complexometry, pH = 10 (ammonium chloride/ammonia)

- Density: 0,96 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: 80 - 100 °C
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a

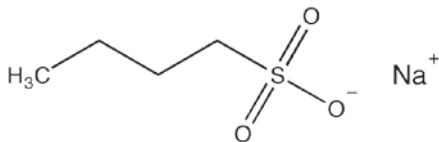
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

**Specifications:**  
pH at 20 °C ..... 10,50 - 11,00

Art. No.	Volume	Container
S01013G100	100 ml	
S010130250	250 ml	
S010131000	1 l	

## 1-Butane sulfonic acid, sodium salt

### AC0601 1-Butane sulfonic acid, sodium salt, HPLC grade



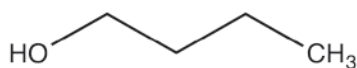
- Synonyms: Sodium 1-butylsulfonate
- C<sub>4</sub>H<sub>9</sub>NaO<sub>3</sub>S
- M = 160,17 g/mol
- CAS [2386-54-1]
- EINECS-No.: 219-201-1
- Solub. in water: (20 °C): soluble
- Melting point: > 310 °C
- Tariff number: 2904 10 00 90
- Applications: chromatography, synthesis of organic products.

**Specifications:**  
assay (acidimetric) ..... min. 99 %

identity (IR-spectrum) ..... passes test  
insoluble matter ..... passes test  
max. absorbance of an aqueous sol. 0,5 M in a 1 cm cell at wavelength: ..... absorbance:  
210 nm. .... 0,1 AU  
220 nm. .... 0,06 AU  
230 nm. .... 0,04 AU  
260 nm. .... 0,02 AU

Art. No.	Volume	Container
AC06010025	25 g	
AC06010100	100 g	

## 1-Butanol



- Synonyms: n-Butyl alcohol, Propylcarbinol
- C<sub>4</sub>H<sub>10</sub>O
- M = 74,12 g/mol
- CAS [71-36-3]
- EINECS-No.: 200-751-6
- Density: 0,81 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 79 g/l
- Melting point: -89,5 °C
- Boiling point: 118 °C
- Flash pt. 34 °C
- Ignition temp.: 340 °C
- Vapour pressure: (20 °C) 6,7 hPa
- Refraction index: (n 20 °C/D) 1,3993
- Dielectric const.: (20 °C) 17,8

- LD 50 (oral, rat): 790 mg/kg
- EC-Index-No.: 603-004-00-6 [1]
- ADR: 3 F1 III UN 1120
- IMDG: 3 III UN 1120
- IATA/ICAO: 3 III UN 1120
- GHS-signal word: Danger
- GHS-H sentences: H318 - H226 - H302 - H335 - H336 - H315
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2905 13 00 00
- Applications: solvents, synthesis of organic products, microscopy.

### AL0170 1-Butanol, extra pure, Pharmpur®, NF

assay (G.C.) ..... min. 99,5 %  
identity (IR-spectrum) ..... passes test  
acidity ..... passes test  
n-butyraldehyde (G.C.) ..... max. 0,1 %  
2-butanol (G.C.) ..... max. 0,1 %  
isobutyl alcohol ..... max. 0,1 %  
butyl ether ..... max. 0,2 %  
residue on evaporation ..... max. 0,004 %

water (K.F.) ..... max. 0,1 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AL01701000	1 l	
AL01702500	2,5 l	
AL0170005P	5 l	
AL0170025A	25 l	
AL0170025P	25 l	

### AL0173 1-Butanol, reagent grade, ACS, ISO, Reag. Ph Eur

assay (G.C.) ..... min. 99,5 %  
identity (IR-spectrum) ..... passes test  
density (20°/4°) ..... 0,809 - 0,810  
density (20°/20°) ..... 0,810 - 0,812  
appearance ..... clear  
colour (Hazen) ..... max. 10  
boiling point ..... 116 - 119 °C  
acidity ..... max. 0,0008 meq/g  
aluminium (Al) ..... max. 0,00005 %  
barium (Ba) ..... max. 0,00001 %  
boron (B) ..... max. 0,000002 %  
cadmium (Cd) ..... max. 0,000005 %  
calcium (Ca) ..... max. 0,00005 %  
chromium (Cr) ..... max. 0,000002 %

cobalt (Co) ..... max. 0,000002 %  
copper (Cu) ..... max. 0,000002 %  
iron (Fe) ..... max. 0,00001 %  
lead (Pb) ..... max. 0,00001 %  
magnesium (Mg) ..... max. 0,00001 %  
manganese (Mn) ..... max. 0,000002 %  
nickel (Ni) ..... max. 0,000002 %  
tin (Sn) ..... max. 0,00001 %  
zinc (Zn) ..... max. 0,00001 %  
aldehydes ..... passes test  
carbonyl compounds (as CO) ..... max. 0,01 %  
2-butanol (G.C.) ..... max. 0,05 %  
butyraldehyde (G.C.) ..... max. 0,01 %  
dibutyl ether (G.C.) ..... max. 0,1 %

isobutanol (G.C.) ..... max. 0,15 %  
substances darkened by H<sub>2</sub>SO<sub>4</sub> ..... passes test  
residue on evaporation ..... max. 0,001 %  
water (K.F.) ..... max. 0,1 %

Art. No.	Volume	Container
AL01731000	1 l	
AL01732500	2,5 l	
AL0173005P	5 l	
AL0173025A	25 l	
AL0173200L	200 l	

### AL0175 1-Butanol, HPLC grade

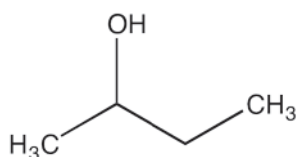
assay (G.C.) ..... min. 99,8 %  
identity (IR-spectrum) ..... passes test  
density (20°/4°) ..... 0,809 - 0,810  
acidity ..... max. 0,0002 meq/g  
alkalinity ..... max. 0,0002 meq/g  
residue on evaporation ..... max. 0,0002 %  
water (K.F.) ..... max. 0,1 %

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
T(%) A (AU)  
210 nm. .... 20 % 0,699 AU  
220 nm. .... 50 % 0,301 AU  
245 nm. .... 90 % 0,046 AU  
Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
AL01751000	1 l	
AL01752500	2,5 l	



## 2-Butanol



- Synonyms: sec-Butyl alcohol, Butyl alcohol secondary, Ethyl methyl carbinol
- $C_4H_{10}O$
- $M = 74,12 \text{ g/mol}$
- CAS [78-92-2]
- EINECS-No.: 201-158-5
- Density:  $0,81 \text{ g/cm}^3$
- Solub. in water: (20 °C): 240 - 250 g/l
- Melting point:  $-114 \text{ °C}$
- Boiling point:  $98,5 - 100,5 \text{ °C}$
- Flash pt.  $24 \text{ °C}$
- Ignition temp.:  $390 \text{ °C}$
- Vapour pressure: (20 °C)  $16,5 \text{ hPa}$

- Dielectric const.: (20 °C) 15,8
- LD 50 (oral, rat): 6480 mg/kg
- EC-Index-No.: 603-004-01-3 [1]
- ADR: 3 F1 II UN 1120
- IMDG: 3 II UN 1120
- IATA/ICAO: 3 II UN 1120
- GHS-signal word: Warning
- GHS-H sentences: H226 - H319 - H335 - H336
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2905 14 90 00
- Applications: analytical chemistry, synthesis of organic products and perfumery.

## AL0176 2-Butanol, synthesis grade

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,806 - 0,808  
 residue on evaporation . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
AL01761000	1 l	Ø
AL01762500	2,5 l	Ø
AL0176005P	5 l	Ø
AL0176025P	25 l	Ø

## AL0177 2-Butanol, reagent grade

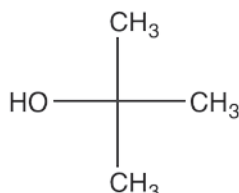
assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,805 - 0,809  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,0005 meq/g  
 aluminium (Al) . . . . .max. 0,00005 %  
 alkalinity . . . . .max. 0,0002 meq/g  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %

chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 tert-butanol (G.C.) . . . . .max. 0,1 %

dibutyl ether (G.C.) . . . . .max. 0,2 %  
 methylethylketone (G.C.) . . . . .max. 0,1 %  
 2-propanol (G.C.) . . . . .max. 0,2 %  
 substances darkened by  $H_2SO_4$  . . . . .passes test  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
AL01771000	1 l	Ø
AL01772500	2,5 l	Ø

## tert-Butanol



- Synonyms: 2-Methyl-2-propanol, Trimethylcarbinol, tert-Butyl alcohol
- $(CH_3)_3COH$
- $M = 74,12 \text{ g/mol}$
- CAS [75-65-0]
- EINECS-No.: 200-889-7
- Density:  $0,78 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point:  $25,3 \text{ °C}$
- Boiling point:  $82 - 83 \text{ °C}$
- Flash pt.  $14 \text{ °C}$
- Ignition temp.:  $490 \text{ °C}$
- Vapour pressure: (20 °C)  $40,7 \text{ hPa}$

- Dielectric const.: (30 °C) 10,9
- LD 50 (oral, rat): 2733 mg/kg
- EC-Index-No.: 603-005-00-1
- ADR: 3 F1 II UN 1120
- IMDG: 3 II UN 1120
- IATA/ICAO: 3 II UN 1120
- GHS-signal word: Danger
- GHS-H sentences: H225 - H332 - H319 - H335
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2905 14 10 00
- Applications: solvents, perfumery, as gasoline additive.

## AL0180 tert-Butanol, synthesis grade

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on evaporation . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AL01801000	1 l	Ø
AL0180005P	5 l	Ø
AL0180025P	25 l	Ø

## AL0183 tert-Butanol, reagent grade, ACS

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 appearance . . . . .clear  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,0005 meq/g  
 alkalinity . . . . .max. 0,0002 meq/g  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %

chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 carbonyl compounds (as

$C_3H_7CHO$ ) . . . . .max. 0,01 %  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AL01831000	1 l	Ø
AL01832500	2,5 l	Ø
AL0183005P	5 l	Ø
AL0183025P	25 l	Ø

# Butyla

## n-Butyl acetate

- Synonyms: Acetic acid n-butyl ester
- $C_6H_{12}O_2$
- M = 116,16 g/mol
- CAS [123-86-4]
- EINECS-No.: 204-658-1
- Density: 0,88 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 7 g/l
- Melting point: -77 °C
- Boiling point: 127 °C

- Flash pt. 22 °C
- Ignition temp.: 370 °C
- Vapour pressure: (20 °C) ~ 13 hPa
- Refraction index: (n 20 °C/D) 1,3941
- Dielectric const.: (20 °C) 5,0
- LD 50 (oral, rat): 13100 mg/kg
- EC-Index-No.: 607-025-00-1
- ADR: 3 F1 III UN 1123
- IMDG: 3 III UN 1123

- IATA/ICAO: 3 III UN 1123
- GHS-signal word: Warning
- GHS-H sentences: H226 - H336 - EUH066
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2915 33 00 00
- Applications: analytical chemistry, laboratory reagent, manufacturing of lacquers, in the textile industry, photography, plasticizer, manufacture of glass.

### AC0090 n-Butyl acetate, synthesis grade

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,879 - 0,881  
 acidity (as CH<sub>3</sub>COOH) . . . . .max. 0,01 %  
 residue on evaporation . . . . .max. 0,005 %

water (K.F.) . . . . .max. 0,05 %

Art. No.	Volume	Container
AC00901000	1 l	
AC00902500	2,5 l	
AC0090005P	5 l	

### AC0093 n-Butyl acetate, reagent grade, ACS

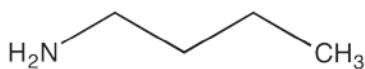
assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,879 - 0,881  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,0016 meq/g  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %

cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 n-butanol (G.C.) . . . . .max. 0,2 %  
 n-butyl formate (G.C.) . . . . .max. 0,1 %

n-butyl propionate (G.C.) . . . . .max. 0,1 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AC00931000	1 l	
AC00932500	2,5 l	

## n-Butylamine



- Synonyms: 1-Aminobutane
- $C_4H_{11}N$
- M = 73,14 g/mol
- CAS [109-73-9]
- EINECS-No.: 203-699-2
- Density: 0,74 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -50 °C
- Boiling point: 76 - 78 °C
- Flash pt. -12 °C
- Ignition temp.: 290 °C
- Vapour pressure: (20 °C) 93 hPa
- Refraction index: (n 20 °C/D) 1,4015
- LD 50 (oral, rat): 366 mg/kg

- EC-Index-No.: 612-005-00-0
- ADR: 3 FC II UN 1125
- IMDG: 3 II UN 1125
- IATA/ICAO: 3 II UN 1125
- GHS-signal word: Danger
- GHS-H sentences: H225 - H314 - H302 - H312 - H332
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2921 19 80 90
- Applications: synthesis of organic products, for pharmaceuticals synthesizing, manufacture of dyes, in the rubber industry, emulsifier, insecticide, cosmetics.

### BU0020 n-Butylamine, synthesis grade

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,736 - 0,738  
 residue on evaporation . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
BU00201000	1 l	
BU00202500	2,5 l	
BU0020025A	25 l	

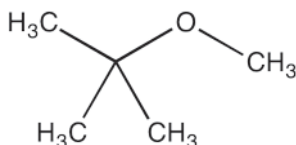
### BU0022 n-Butylamine, reagent grade

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,736 - 0,738  
 chlorides (Cl) . . . . .max. 0,0005 %

heavy metals (as Pb) . . . . .max. 0,00005 %  
 iron (Fe) . . . . .max. 0,00005 %  
 residue on evaporation . . . . .max. 0,0005 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
BU00221000	1 l	

## tert-Butyl methyl ether



- Synonyms: Methyl tert-butyl ether, MTBE
- $C_5H_{12}O$
- M = 88,15 g/mol
- CAS [1634-04-4]
- EINECS-No.: 216-653-1
- Density: 0,74 g/cm<sup>3</sup>
- Solub. in water: (10 °C): ~ 26 g/l
- Melting point: -108,6 °C
- Boiling point: 55 °C
- Flash pt. -28 °C
- Ignition temp.: 460 °C
- Vapour pressure: (20 °C) 268 hPa
- Refraction index: (25 °C) 1,3664

- LD 50 (oral, rat): 3870 mg/kg
- ADR: 3 F1 II UN 2398
- IMDG: 3 II UN 2398
- IATA/ICAO: 3 II UN 2398
- GHS-signal word: Danger
- GHS-H sentences: H225 - H315
- GHS-P sentences: P210 - P241 - P280 - P303 + P361 + P353 - P321 - P501a
- Tariff number: 2909 19 90 00
- Applications: analytical chemistry, laboratory reagent, chromatography, solvents, as gasoline additive.
- Appearance: Colourless clear liquid

## ME0550 tert-Butyl methyl ether, extra pure



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,740 - 0,742  
 acidity . . . . . max. 0,002 meq/g  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00002 %

lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,005 %  
 residue on evaporation . . . . . max. 0,005 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
ME05501000	1 l	
ME05502500	2,5 l	
ME0550025A	25 l	
ME0550200L	200 l	

## ME0551 tert-Butyl methyl ether, reagent grade, Reag. Ph Eur



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,740 - 0,742  
 refractive index n<sub>20</sub>/D . . . . . 1,368 - 1,370  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0005 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %

peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,0005 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,03 %

Art. No.	Volume	Container
ME05511000	1 l	
ME05512500	2,5 l	
ME0551007E	7 l	
ME0551025S	25 l	

## ME0552 tert-Butyl methyl ether, HPLC grade



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,740 - 0,742  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 residue on evaporation . . . . . max. 0,0002 %  
 water (K.F.) . . . . . max. 0,02 %

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 T(%) A (AU)  
 240 nm . . . . . 50 % 0,301 AU  
 255 nm . . . . . 80 % 0,097 AU  
 280 nm . . . . . 98 % 0,009 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
ME05521000	1 l	
ME05522500	2,5 l	
ME05524000	4 l	

## ME0553 tert-Butyl methyl ether, for GC residue analysis



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,740 - 0,742  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,02 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 3 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
ME05531000	1 l	
ME05532500	2,5 l	

## ME0555 tert-Butyl methyl ether, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O)



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,740 - 0,742  
 acidity . . . . . max. 0,0005 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %

chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %

zinc (Zn) . . . . . max. 0,00001 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,0005 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
ME05550100	100 ml	



# Cadmium

## Cadmium

### CA0080 Cadmium, metal, extra pure, Reag. Ph Eur



- Cd
- M = 112,40 g/mol
- CAS [7440-43-9]
- EINECS-No.: 231-152-8
- Solub. in water: (20 °C): insoluble
- Melting point: 321 °C
- Boiling point: 767 °C
- Vapour pressure: (394 °C) 1,3 hPa
- LD 50 (oral, rat): 225 mg/kg
- EC-Index-No.: 048-002-00-0 [1]
- ADR: 6.1 T5 I UN 3288
- IMDG: 6.1 I UN 3288

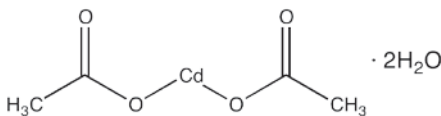
- IATA/ICAO: 6.1 I UN 3288
- GHS-signal word: Danger
- GHS-H sentences: H330 - H350 - H372 - H341 - H361fd - H410
- GHS-P sentences: P260 - P284 - P310 - P320 - P405 - P501a
- Tariff number: 8107 20 00 00
- Applications: analytical chemistry, laboratory reagent, electrolyte for batteries.

copper (Cu) . . . . .	max. 0,01%
iron (Fe) . . . . .	max. 0,005%
lead (Pb) . . . . .	max. 0,05%
nickel (Ni) . . . . .	max. 0,05%
tin (Sn) . . . . .	max. 0,05%
zinc (Zn) . . . . .	max. 0,005%

Art. No.	Volume	Container
CA00800250	250 g	

**Specifications:**  
assay (complexometric) . . . . .min. 99 %

## Cadmium acetate dihydrate



- Synonyms: Acetic acid cadmium salt
- Cd(CH<sub>3</sub>COO)<sub>2</sub> · 2H<sub>2</sub>O
- M = 266,52 g/mol
- CAS [5743-04-4]
- EINECS-No.: 208-853-2
- Solub. in water: (20 °C): freely soluble
- Melting point: 256 °C (anhydrous substance)
- EC-Index-No.: 048-001-00-5
- ADR: 6.1 T5 III UN 2570
- IMDG: 6.1 III UN 2570

- IATA/ICAO: 6.1 III UN 2570
- GHS-signal word: Warning
- GHS-H sentences: H410 - H302 - H312 - H332
- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a
- Tariff number: 2915 29 00 90
- Applications: analytical chemistry, laboratory reagent, for the detection of: sulfur, selenium, tellurium.
- Appearance: White solid

### CA0048 Cadmium acetate dihydrate, extra pure



assay (complexometric) . . . . .min. 98 %  
pH (5 %, H<sub>2</sub>O) . . . . .6, 5- 7,5  
chlorides (Cl) . . . . .max. 0,002 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %  
copper (Cu) . . . . .max. 0,0005 %

lead (Pb) . . . . .max. 0,005 %  
iron (Fe) . . . . .max. 0,001 %  
zinc (Zn) . . . . .max. 0,005 %

Art. No.	Volume	Container
CA00480250	250 g	
CA0048005P	5 kg	
CA0048025P	25 kg	

### CA0050 Cadmium acetate dihydrate, reagent grade



assay (complexometric) . . . . .min. 99 %  
insoluble in water . . . . .max. 0,005 %  
chlorides (Cl) . . . . .max. 0,001 %  
nitrates (NO<sub>3</sub>) . . . . .max. 0,002 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
sulfides (S) . . . . .max. 0,002 %  
aluminium (Al) . . . . .max. 0,005 %  
calcium (Ca) . . . . .max. 0,005 %

copper (Cu) . . . . .max. 0,0005 %  
iron (Fe) . . . . .max. 0,0005 %  
lead (Pb) . . . . .max. 0,001 %  
potassium (K) . . . . .max. 0,005 %  
sodium (Na) . . . . .max. 0,002 %  
zinc (Zn) . . . . .max. 0,002 %  
non precipitable with H<sub>2</sub>S (as SO<sub>4</sub>) . . . . .max. 0,1 %

Art. No.	Volume	Container
CA00500100	100 g	
CA00500250	250 g	
CA00501000	1 kg	
CA0050005P	5 kg	
CA0050025P	25 kg	

## Cadmium chloride 2,5-hydrate

### CA0060 Cadmium chloride 2,5-hydrate, extra pure



- CdCl<sub>2</sub> · 2,5H<sub>2</sub>O
- M = 228,34 g/mol
- CAS [7790-78-5]
- EINECS-No.: 233-296-7
- Solub. in water: (25 °C): freely soluble
- LD 50 (oral, rat): 665 mg/kg
- EC-Index-No.: 048-008-00-3
- ADR: 6.1 T5 II UN 2570
- IMDG: 6.1 II UN 2570
- IATA/ICAO: 6.1 II UN 2570
- GHS-signal word: Danger
- GHS-H sentences: H301 - H330 - H340 - H350 - H360 - H372 - H410

- GHS-P sentences: P260 - P301 + P310 - P310 - P320 - P405 - P501a
- Tariff number: 2827 39 80 90
- Applications: analytical chemistry, laboratory reagent, electrolyte for batteries, metal alloys, in solders (aluminium), in galvanotechnia.
- Appearance: White chunks

ammonium (NH <sub>4</sub> ) . . . . .	max. 0,02 %
arsenic (As) . . . . .	max. 0,0001 %
copper (Cu) . . . . .	max. 0,002 %
iron (Fe) . . . . .	max. 0,002 %
lead (Pb) . . . . .	max. 0,01 %
zinc (Zn) . . . . .	max. 0,05 %

Art. No.	Volume	Container
CA00600250	250 g	
CA00601000	1 kg	

**Specifications:**  
assay (complexometric) . . . . .98 - 102 %  
insoluble in water . . . . .max. 0,01 %  
nitrates and nitrites (as NO<sub>2</sub>) . . . . .max. 0,02 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %

## Cadmium hydroxide

### CA0075 Cadmium hydroxide, extra pure



- Cd(OH)<sub>2</sub>
- M = 146,42 g/mol
- CAS [21041-95-2]
- EINECS-No.: 244-168-5
- EC-Index-No.: 048-001-00-5
- ADR: 6.1 T5 III UN 2570
- IMDG: 6.1 III UN 2570
- IATA/ICAO: 6.1 III UN 2570
- GHS-signal word: Warning
- GHS-H sentences: H410 - H302 - H312 - H332

- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a
- Tariff number: 2825 90 80 00
- Applications: electrolyte for batteries, laboratory reagent.

iron (Fe) . . . . .	max. 0,005 %
potassium (K) . . . . .	max. 0,005 %
sodium (Na) . . . . .	max. 0,2 %
lead (Pb) . . . . .	max. 0,02 %

Art. No.	Volume	Container
CA0075005P	5 kg	

**Specifications:**  
assay (complexometric) . . . . .min. 98 %  
chlorides (Cl) . . . . .max. 0,05 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,05 %

## Cadmium iodide

### CA0135 Cadmium iodide, extra pure



- CdI<sub>2</sub>
- M = 366,21 g/mol
- CAS [7790-80-9]
- EINECS-No.: 232-223-6
- Solub. in water: (20 °C): 798 g/l
- Melting point: 388 °C
- Boiling point: 787 °C
- LD 50 (oral, rat): 222 mg/kg
- EC-Index-No.: 048-007-00-8
- ADR: 6.1 T5 III UN 2570
- IMDG: 6.1 III UN 2570
- IATA/ICAO: 6.1 III UN 2570
- GHS-signal word: Danger

- GHS-H sentences: H301 - H331 - H351 - H373 - H410
- GHS-P sentences: P260 - P261 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2827 60 00 90
- Applications: analytical chemistry, photography, in galvanotechnology, insecticide, in lubricant compositions.
- Appearance: White to pale yellow flakes

chlorides and bromides (as Cl) . . . . .max. 0,05 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %  
 calcium (Ca) . . . . .max. 0,01 %  
 copper (Cu) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,002 %  
 lead (Pb) . . . . .max. 0,005 %  
 zinc (Zn) . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 1 %

#### Specifications:

assay (complexometric) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,02 %  
 pH (5 %, H<sub>2</sub>O) . . . . .min. 5,0

Art. No.	Volume	Container
CA01350100	100 g	P
CA01350250	250 g	P
CA01351000	1 kg	P

## Cadmium nitrate tetrahydrate

- Synonyms: Nitric acid cadmium salt tetrahydrate
- Cd(NO<sub>3</sub>)<sub>2</sub>·4H<sub>2</sub>O
- M = 308,47 g/mol
- CAS [10022-68-1]
- EINECS-No.: 233-710-6
- Solub. in water: (20 °C): soluble
- Melting point: 59 °C

- LD 50 (oral, rat): 300 mg/kg
- EC-Index-No.: 048-001-00-5
- ADR: 6.1 T5 III UN 2570
- IMDG: 6.1 III UN 2570
- IATA/ICAO: 6.1 III UN 2570
- GHS-signal word: Warning
- GHS-H sentences: H410 - H302 - H312 - H332

- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a
- Tariff number: 2834 29 20 00
- Applications: analytical chemistry, laboratory reagent, photography, for the synthesis of: cadmium salts.
- Appearance: White crystals

### CA0097 Cadmium nitrate tetrahydrate, extra pure



assay (complexometric) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,01 %  
 chlorides (Cl) . . . . .max. 0,005 %  
 ammonium (NH<sub>4</sub>) . . . . .max. 0,03 %  
 copper (Cu) . . . . .max. 0,003 %

iron (Fe) . . . . .max. 0,001 %  
 lead (Pb) . . . . .max. 0,005 %  
 sodium (Na) . . . . .max. 0,01 %  
 zinc (Zn) . . . . .max. 0,005 %

Art. No.	Volume	Container
CA00970250	250 g	P
CA00971000	1 kg	P
CA0097005P	5 kg	P

### CA0100 Cadmium nitrate tetrahydrate, reagent grade



assay (complexometric) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) . . . . .4,5 - 7,0  
 chlorides (Cl) . . . . .max. 0,001 %  
 phosphates (as PO<sub>4</sub>) . . . . .max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
 ammonium (NH<sub>4</sub>) . . . . .max. 0,01 %  
 barium (Ba) . . . . .max. 0,005 %

calcium (Ca) . . . . .max. 0,005 %  
 copper (Cu) . . . . .max. 0,001 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,001 %  
 lead (Pb) . . . . .max. 0,005 %  
 magnesium (Mg) . . . . .max. 0,01 %  
 potassium (K) . . . . .max. 0,002 %  
 sodium (Na) . . . . .max. 0,01 %

strontium (Sr) . . . . .max. 0,01 %  
 zinc (Zn) . . . . .max. 0,005 %

Art. No.	Volume	Container
CA01000250	250 g	P
CA01001000	1 kg	P
CA0100005P	5 kg	P

## Cadmium oxide

### CA0110 Cadmium oxide, extra pure



- CdO
- M = 128,40 g/mol
- CAS [1306-19-0]
- EINECS-No.: 215-146-2
- Solub. in water: (20 °C): insoluble
- Melting point: < 1426 °C
- Boiling point: 1559 °C
- LD 50 (oral, rat): 72 mg/kg
- EC-Index-No.: 048-002-00-0
- ADR: 6.1 T5 III UN 2570
- IMDG: 6.1 III UN 2570
- IATA/ICAO: 6.1 III UN 2570
- GHS-signal word: Danger

- GHS-H sentences: H330 - H350 - H372 - H341 - H361fd - H410
- GHS-P sentences: P260 - P284 - P310 - P320 - P405 - P501a
- Tariff number: 2825 90 60 00
- Applications: synthesis of organic products, electrolyte for batteries, laboratory reagent.
- Appearance: Reddish-brown solid

copper (Cu) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %  
 nickel (Ni) . . . . .max. 0,005 %  
 lead (Pb) . . . . .max. 0,005 %  
 zinc (Zn) . . . . .max. 0,005 %  
 grain size (D50) . . . . .0,5 - 1,5 mm  
 spec. surface (BET) . . . . .2 - 4 m<sup>2</sup>/g

#### Specifications:

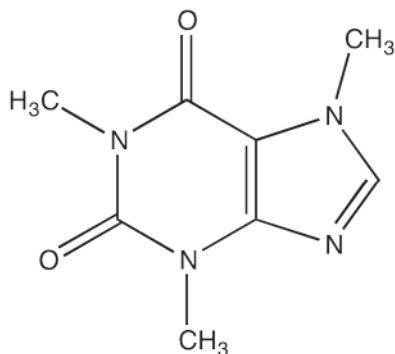
assay (complexometric) . . . . .min. 99 %  
 chlorides (Cl) . . . . .max. 0,002 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %

Art. No.	Volume	Container
CA01100250	250 g	P

# Caffei

## Caffeine anhydrous

CA0150 Caffeine anhydrous, extra pure, Pharmapur®, Ph Eur, BP, USP



- Synonyms: 7-Methyltheobromine, 1,3,7-Trimethylxanthine, 3,7-Dihydro-1,3,7-trimethyl-1H-purine-2,6-dione
- $C_8H_{10}N_4O_2$
- M = 194,19 g/mol
- CAS [58-08-2]
- EINECS-No.: 200-362-1
- Solub. in water: (20 °C): 20 g/l
- Melting point: 235 - 238 °C
- Ignition temp.: > 600 °C
- LD 50 (oral, rat): 261 - 383 mg/kg
- EC-Index-No.: 613-086-00-5
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2939 30 00 00
- Applications: analytical chemistry, for pharmaceutical synthesizing, in food industry, in pharma industry.

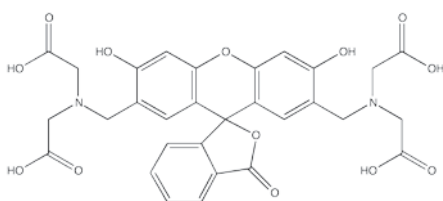
### Specifications:

assay (titration with  $HClO_4$ )  
 on dried sample ..... 98,5 - 101 %  
 identification ..... passes test  
 appearance of solution ..... clear and colourless  
 acidity ..... passes test  
 sulfates ( $SO_4$ ) ..... max. 0,05 %  
 heavy metals (as Pb) ..... max. 0,001 %  
 related substances (TLC) ..... passes test  
 residue on ignition ..... max. 0,1 %  
 loss on drying (105 °C) ..... max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
CA01501000	1 kg	Ⓟ
CA0150005P	5 kg	Ⓟ
CA0150025P	25 kg	Ⓟ

## Calcein

CA0165 Calcein, indicator for metal titration



- Synonyms: 2,7-Bis[bis(carboxymethyl)aminomethyl] fluorescein, Fluorescein complexon, Fluorexon
- $C_{30}H_{26}N_2O_{13}$
- M = 622,55 g/mol
- CAS [1461-15-0]
- EINECS-No.: 215-957-1
- Solub. in water: (20 °C): sparingly soluble
- Tariff number: 3204 19 00 90
- Applications: analytical chemistry, indicator, for determination of: calcium.

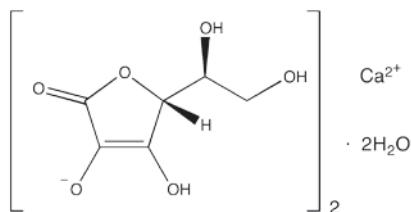
### Specifications:

Absorption maximum  $\lambda$  (in NaOH)  
 0,002 M ..... 492 - 500 nm  
 Absorptivity (A1%/1 cm;  $\lambda$  max.) ..... 800 - 1000  
 insoluble in NaOH ..... passes test  
 loss on drying (135 °C) ..... max. 10 %  
 suitability as complexometric indicator passes test

Art. No.	Volume	Container
CA01650001	1 g	Ⓟ
CA01650005	5 g	Ⓟ

## Calcium L(+)-ascorbate

CA0180 Calcium L(+) -ascorbate, extra pure, Pharmapur®, USP



- Synonyms: L-(+)-Ascorbic acid calcium salt
- $C_{12}H_{14}CaO_{12} \cdot 2H_2O$
- M = 426,35 g/mol
- CAS [5743-28-2]
- EINECS-No.: 227-261-5
- Solub. in water: (20 °C): soluble
- Tariff number: 2936 27 00 00
- Applications: antioxidant (in food industry), in the pharmaceuticals industry, in pharma industry.

pH ..... 6,8 - 7,4  
 specific rotation ( $[\alpha]_{25}^D$ , c = 10,  $H_2O$ ) ... +95,5° - +97,0°  
 fluorides (F) ..... max. 0,001 %  
 arsenic (As) ..... max. 0,0003 %  
 heavy metals (as Pb) ..... max. 0,001 %  
 loss on drying (105 °C) ..... max. 0,1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

### Specifications:

assay (iodometric) ..... 98 - 101 %  
 identification ..... passes test

Art. No.	Volume	Container
CA01801000	1 kg	Ⓟ

## Calcium carbonate, precipitated

- Synonyms: Lime, Chalk, Marble
- $CaCO_3$
- M = 100,09 g/mol
- CAS [471-34-1]
- EINECS-No.: 207-439-9

- Solub. in water: (20 °C): 14 mg/l
- Melting point: 825 °C (decomposes)
- LD 50 (oral, rat): 6450 mg/kg
- Tariff number: 2836 50 00 00

- Applications: painting, in the rubber industry, plasticizer, dentifrices, in porcelain industry, insecticide, in food industry, cosmetics, for pharmaceuticals synthesizing.

CA0182 Calcium carbonate, precipitated, extra pure, Pharmapur®, Ph Eur, BP, USP

assay (complexometric, on dried sample) ..... 98,5 - 100,5 %  
 identification ..... passes test  
 insoluble in  $CH_3COOH$  ..... max. 0,2 %  
 chlorides (Cl) ..... max. 0,033 %  
 sulfates ( $SO_4$ ) ..... max. 0,25 %  
 arsenic (As) ..... max. 0,0004 %

barium (Ba) ..... passes test  
 heavy metals (as Pb) ..... max. 0,002 %  
 iron (Fe) ..... max. 0,02 %  
 magnesium and alkali metals ..... max. 1,5 %  
 loss on drying (200°C, 4 h) ..... max. 2 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
CA01820500	500 g	Ⓟ
CA01821000	1 kg	Ⓟ
CA0182005P	5 kg	Ⓟ
CA0182025P	25 kg	Ⓟ

## CA0187 Calcium carbonate, precipitated, powder, Pharmpur®, Ph Eur, GMP, suitable for use as excipient

assay (complexometric, on dried sample) . . . . .	98,5 - 100,5 %	heavy metals (as Pb) . . . . .	max. 0,002 %
identification . . . . .	passes test	iron (Fe) . . . . .	max. 0,02 %
insoluble in CH <sub>3</sub> COOH . . . . .	max. 0,2 %	magnesium and alkali metals . . . . .	max. 1,5 %
chlorides (Cl) . . . . .	max. 0,033 %	loss on drying (200°C, 4 h) . . . . .	max. 2 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,25 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	
arsenic (As) . . . . .	max. 0,0004 %	Suitable for use as excipient according to requirements of GMP.	
barium (Ba) . . . . .	passes test		

Art. No.	Volume	Container
CA01871000	1 kg	
CA0187005P	5 kg	
CA0187025P	25 kg	

## CA0184 Calcium carbonate, precipitated, reagent grade, Reag. Ph Eur

assay (complexometric, on dried sample) . . . . .	min. 99 %	copper (Cu) . . . . .	max. 0,0005 %	zinc (Zn) . . . . .	max. 0,001 %
insoluble in CH <sub>3</sub> COOH . . . . .	max. 0,2 %	heavy metals (as Pb) . . . . .	max. 0,002 %	non precipitable with (NH <sub>4</sub> ) <sub>2</sub> C <sub>2</sub> O <sub>4</sub> . . . . .	max. 1 %
insoluble in HCl . . . . .	max. 0,005 %	iron (Fe) . . . . .	max. 0,02 %	loss on drying (200°C, 4 h) . . . . .	max. 0,1 %
total nitrogen (as N) . . . . .	max. 0,001 %	lead (Pb) . . . . .	max. 0,0005 %		
chlorides (Cl) . . . . .	max. 0,005 %	magnesium (Mg) . . . . .	max. 0,05 %		
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,02 %	magnesium and alkali metals . . . . .	max. 1,5 %		
aluminium (Al) . . . . .	max. 0,005 %	potassium (K) . . . . .	max. 0,01 %		
arsenic (As) . . . . .	max. 0,0004 %	sodium (Na) . . . . .	max. 0,2 %		
barium (Ba) . . . . .	max. 0,005 %	strontium (Sr) . . . . .	max. 0,1 %		

Art. No.	Volume	Container
CA01840500	500 g	
CA01841000	1 kg	

## CA0185 Calcium carbonate, secondary standard for volumetric titrations, Titrasure®

assay (on dried sample) . . . . .	99,5 - 100,1 %	barium (Ba) . . . . .	max. 0,01 %	strontium (Sr) . . . . .	max. 0,1 %
insoluble in diluted HCl . . . . .	max. 0,01 %	heavy metals (as Pb) . . . . .	max. 0,001 %		
chlorides (Cl) . . . . .	max. 0,001 %	iron (Fe) . . . . .	max. 0,002 %		
fluorides (F) . . . . .	max. 0,0015 %	magnesium (Mg) . . . . .	max. 0,01 %		
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,005 %	potassium (K) . . . . .	max. 0,01 %		
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,003 %	sodium (Na) . . . . .	max. 0,01 %		

Art. No.	Volume	Container
CA01850060	60 g	

## Calcium chloride anhydrous

- Synonyms: Chloro calcium
- CaCl<sub>2</sub>
- M = 110,99 g/mol
- CAS [10043-52-4]
- EINECS-No.: 233-140-8
- Solub. in water: (20 °C): 740 g/l
- Melting point: 772 °C
- Boiling point: > 1600 °C
- LD 50 (oral, rat): 1000 mg/kg
- EC-Index-No.: 017-013-00-2
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2827 20 00 00
- Applications: analytical chemistry, laboratory reagent, desiccant.

## CA0190 Calcium chloride anhydrous, granulated, extra pure

assay (argentometric) . . . . .	99 - 107%	Iron, aluminium and phosphate passes test	
identification . . . . .	passes test	magnesium and alkaline salts . . . . .	1 %
pH . . . . .	4,5 - 9,2		
aluminium (Al) . . . . .	max. 0,0001 %		
heavy metals (as Pb) . . . . .	0,001 %		

Art. No.	Volume	Container
CA01900500	500 g	
CA01901000	1 kg	
CA0190005P	5 kg	

## CA0197 Calcium chloride anhydrous, powder, extra pure

assay (argentometric) . . . . .	min. 95 %	arsenic (As) . . . . .	max. 0,0001 %
insoluble in water and precipitable with acidity (as HCl) . . . . .	max. 0,01 %	copper (Cu) . . . . .	max. 0,002 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,005 %	iron (Fe) . . . . .	max. 0,005 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,05 %	lead (Pb) . . . . .	max. 0,002 %
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,01 %	nickel (Ni) . . . . .	max. 0,002 %

Art. No.	Volume	Container
CA01970500	500 g	
CA01971000	1 kg	
CA0197005P	5 kg	
CA0197025P	25 kg	

## CA0192 Calcium chloride anhydrous, powder, reagent grade

assay (argentometric) . . . . .	min. 96 %	copper (Cu) . . . . .	max. 0,0005 %	iron (Fe) . . . . .	max. 0,0025 %
acidity (as HCl) . . . . .	max. 0,005 %	lead (Pb) . . . . .	max. 0,0005 %	magnesium (Mg) . . . . .	max. 0,1 %
alkalinity (as Ca(OH) <sub>2</sub> ) . . . . .	max. 0,5 %	manganese (Mn) . . . . .	max. 0,0005 %	nickel (Ni) . . . . .	max. 0,0005 %
nitrate (NO <sub>3</sub> ) . . . . .	max. 0,01 %	potassium (K) . . . . .	max. 0,1 %	sodium (Na) . . . . .	max. 0,1 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,001 %	zinc (Zn) . . . . .	max. 0,01 %		
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,02 %				
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,005 %				
arsenic (As) . . . . .	max. 0,0001 %				
barium (Ba) . . . . .	max. 0,02 %				

Art. No.	Volume	Container
CA01920500	500 g	
CA01921000	1 kg	
CA0192005P	5 kg	
CA0192025P	25 kg	

## Calcium chloride dihydrate

- CaCl<sub>2</sub>·2H<sub>2</sub>O
- M = 147,02 g/mol
- CAS [10035-04-8]
- EINECS-No.: 233-140-8
- Melting point: ~ 176 °C
- LD 50 (oral, rat): 1000 mg/kg (anhydrous substance)
- EC-Index-No.: 017-013-00-2
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2827 20 00 00
- Applications: analytical chemistry, for pharmaceuticals synthesizing, in food industry, laboratory reagent, in pharma industry.

# Calciu

## CA0193 Calcium chloride dihydrate, powder, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (complexometric) . . . . .	99 - 103 %	aluminium (Al) . . . . .	max. 0,0001 %
identification . . . . .	passes test	barium (Ba) . . . . .	passes test
appearance of solution . . . . .	passes test	heavy metals (as Pb) . . . . .	max. 0,001 %
pH (5 %, H <sub>2</sub> O) . . . . .	4,5 - 9,2	iron (Fe) . . . . .	max. 0,001 %
acidity . . . . .	passes test	magnesium and alkali metals . . . . .	max. 0,5 %
alkalinity . . . . .	passes test	residual solvents (Ph Eur/ICH). excluded by production process	
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,03 %		

Art. No.	Volume	Container
CA01930500	500 g	Ⓟ
CA01931000	1 kg	Ⓟ
CA0193005P	5 kg	Ⓟ
CA0193025P	25 kg	Ⓟ

## CA0199 Calcium chloride dihydrate, sheets, extra pure

assay (as CaCl <sub>2</sub> , complexometric) . . . . .	min. 77 %	fluorides (F) . . . . .	max. 0,004 %
insoluble in water . . . . .	max. 0,2 %	arsenic (As) . . . . .	max. 0,0003 %
pH (10 %, H <sub>2</sub> O) . . . . .	9,0 - 10,5	heavy metals (as Pb) . . . . .	max. 0,002 %
alkalinity (as Ca(OH) <sub>2</sub> ) . . . . .	max. 0,15 %	lead (Pb) . . . . .	max. 0,001 %
		magnesium and alkaline salts . . . . .	max. 4 %

Art. No.	Volume	Container
CA01991000	1 kg	Ⓟ
CA0199005P	5 kg	Ⓟ

## CA0194 Calcium chloride dihydrate, powder, reagent grade, ACS

assay (complexometric) . . . . .	99 - 105 %	barium (Ba) . . . . .	max. 0,003 %	strontium (Sr) . . . . .	max. 0,05 %
identity . . . . .	passes test	copper (Cu) . . . . .	max. 0,0005 %	zinc (Zn) . . . . .	max. 0,001 %
clarity of solution . . . . .	passes test	heavy metals (as Pb) . . . . .	max. 0,0005 %	oxidizing substances (as NO <sub>2</sub> ) . . . . .	max. 0,003 %
insoluble in water . . . . .	max. 0,01 %	iron (Fe) . . . . .	max. 0,0003 %		
pH (5 %, H <sub>2</sub> O) . . . . .	4,5 - 8,5	lead (Pb) . . . . .	max. 0,0005 %		
acidity or alkalinity . . . . .	passes test	magnesium (Mg) . . . . .	max. 0,005 %		
nitrites (NO <sub>2</sub> ) . . . . .	max. 0,003 %	magnesium and alkali metals . . . . .	max. 0,5 %		
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,001 %	manganese (Mn) . . . . .	max. 0,0005 %		
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,005 %	nickel (Ni) . . . . .	max. 0,0005 %		
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,005 %	potassium (K) . . . . .	max. 0,01 %		
aluminium (Al) . . . . .	max. 0,0001 %	sodium (Na) . . . . .	max. 0,01 %		

Art. No.	Volume	Container
CA01940500	500 g	Ⓟ
CA01941000	1 kg	Ⓟ
CA0194005P	5 kg	Ⓟ

## CA0198 Calcium chloride dihydrate, molecular biology grade

assay (complexometric) . . . . .	min. 99,5 %
pH (5 %, H <sub>2</sub> O) . . . . .	6 - 8
heavy metals (as Pb) . . . . .	max. 0,0005 %
DNases, RNases, Proteases . . . . .	non detected

Art. No.	Volume	Container
CA01980250	250 g	Ⓟ
CA01981000	1 kg	Ⓟ
CA0198025P	25 kg	Ⓟ

## Calcium chloride, volumetric solutions

### CA0195 Calcium chloride, solution 1 mol/l

- CaCl<sub>2</sub>
- M = 110,99 g/mol
- CAS [10043-52-4]
- EINECS-No.: 233-140-8
- Density: 1,08 g/cm<sup>3</sup>
- LD 50 (oral, rat): 1000 mg/kg (pure substance)
- EC-Index-No.: 017-013-00-2
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2827 20 00 00

- Applications: analytical chemistry, in food industry, in antifreeze compositions.

#### Specifications:

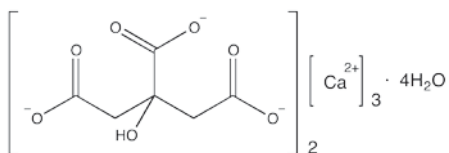
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,11099 g CaCl<sub>2</sub>. This volumetric solution was checked by means of potentiometric methods using an EDTA disodium salt standard solution, that was also checked against Scharlab's calcium carbonate volumetric standard. Scharlab's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
CA01951000	1 l	Ⓟ

## tri-Calcium dicitrate tetrahydrate, powder

### CA0203 tri-Calcium dicitrate tetrahydrate, powder, extra pure, Pharmpur®, USP



- Synonyms: Calcium citrate, 2-Hydroxy-1,2,3-propanetricarboxylic acid calcium salt (2:3)
- C<sub>12</sub>H<sub>10</sub>Ca<sub>3</sub>O<sub>14</sub>·4H<sub>2</sub>O
- M = 570,51 g/mol
- CAS [5785-44-4]
- EINECS-No.: 212-391-7
- Solub. in water: (20 °C): ~ 1 g/l
- Tariff number: 2918 15 00 90
- Applications: pharmaceutical and food industries, in pharma industry.

#### Specifications:

assay (complexometric, on dried sample) . . . . . 97,5 - 100,5 %  
identification . . . . . passes test

appearance of solution . . . . . passes test  
insoluble in HCl . . . . . max. 0,2 %  
fluorides (F) . . . . . max. 0,003 %  
arsenic (As) . . . . . max. 0,0001 %  
heavy metals (as Pb) . . . . . max. 0,0005 %  
lead (Pb) . . . . . max. 0,0001 %  
loss on drying (150°C, 4 h) . . . . . 10,0 - 13,3 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
CA02031000	1 kg	Ⓟ
CA0203025P	25 kg	Ⓟ



## Calcium bis-(dihydrogen phosphate) monohydrate

### CA0211 Calcium bis-(dihydrogen phosphate) monohydrate, extra pure

- Synonyms: Calcium biphosphate
- $\text{Ca}(\text{H}_2\text{PO}_4)_2 \cdot \text{H}_2\text{O}$
- M = 252,07 g/mol
- CAS [10031-30-8]
- EINECS-No.: 231-837-1
- Solub. in water: (20 °C): insoluble
- Melting point: 109 °C
- Tariff number: 2835 26 10 00
- Applications: analytical chemistry, in fertilizer compositions, in food industry, in the production of enamels.

**Specifications:**

assay (complexometric) . . . . .	min. 98 %
chlorides (Cl) . . . . .	max. 0,005 %
arsenic (As) . . . . .	max. 0,0002 %
copper (Cu) . . . . .	max. 0,003 %
iron (Fe) . . . . .	max. 0,01 %
heavy metals (as Pb) . . . . .	max. 0,003 %
lead (Pb) . . . . .	max. 0,003 %
nickel (Ni) . . . . .	max. 0,003 %

Art. No.	Volume	Container
CA02110500	500 g	
CA02111000	1 kg	
CA0211005P	5 kg	
CA0211025P	25 kg	

## Calcium hydrogen phosphate dihydrate

### CA0210 Calcium hydrogen phosphate dihydrate, extra pure, Pharmpur®, Ph Eur, BP, USP

- Synonyms: Calcium phosphate dibasic
- $\text{CaHPO}_4 \cdot 2\text{H}_2\text{O}$
- M = 172,10 g/mol
- CAS [7789-77-7]
- EINECS-No.: 231-826-1
- Solub. in water: (25 °C): 0,2 g/l
- Tariff number: 2835 25 10 00
- Applications: analytical chemistry, in food industry, manufacture of glass, for dentistry, in pharma industry.

**Specifications:**

assay (complexometric) . . . . .	98 - 100,5 %
identification . . . . .	passes test
insoluble in HCl . . . . .	max. 0,2 %
carbonates (as $\text{CO}_2$ ) . . . . .	passes test
chlorides (Cl) . . . . .	max. 0,02 %
fluorides (F) . . . . .	max. 0,005 %
sulfates ( $\text{SO}_4$ ) . . . . .	max. 0,5 %
arsenic (As) . . . . .	max. 0,0001 %
barium (Ba) . . . . .	passes test
heavy metals (as Pb) . . . . .	max. 0,003 %
iron (Fe) . . . . .	max. 0,04 %

residue on ignition (800 °C) . . . . . 24,5 - 26,5 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
CA02100500	500 g	
CA02101000	1 kg	
CA0210005P	5 kg	
CA0210025P	25 kg	

## Calcium hydroxide, 90%

- $\text{Ca}(\text{OH})_2$
- M = 74,09 g/mol
- CAS [1305-62-0]
- EINECS-No.: 215-137-3

- GHS-signal word: Danger
- GHS-H sentences: H318
- GHS-P sentences: P280 - P305 + P351 + P338 - P310

- Tariff number: 2825 90 19 00
- Applications: in building materials, in lubricant compositions, painting, laboratory reagent.

### CA0215 Calcium hydroxide, 90%, synthesis grade

assay (acidimetric) . . . . . approx. 90 %

Art. No.	Volume	Container
CA02150250	250 g	
CA02150500	500 g	
CA02151000	1 kg	

### CA0216 Calcium hydroxide, powder, extra pure, Pharmpur®, Ph Eur, BP, USP

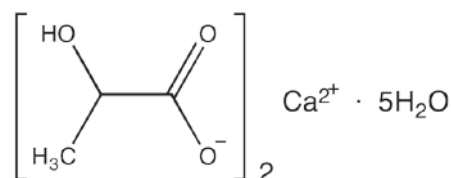
assay (acidimetric) . . . . . 95 - 100,5 %  
identification . . . . . passes test  
insoluble in HCl . . . . . max. 0,5 %  
carbonates (as  $\text{CaCO}_3$ ) . . . . . max. 5 %  
chlorides (Cl) . . . . . max. 0,033 %  
sulfates ( $\text{SO}_4$ ) . . . . . max. 0,4 %

arsenic (As) . . . . . max. 0,0004 %  
heavy metals (as Pb) . . . . . max. 0,002 %  
magnesium and alkali metals . . . . . max. 4,8 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
CA02160500	500 g	
CA02161000	1 kg	
CA0216005P	5 kg	
CA0216025P	25 kg	

## Calcium lactate pentahydrate

### CA0225 Calcium lactate pentahydrate, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms: Lactic acid calcium salt pentahydrate
- $\text{C}_6\text{H}_{10}\text{CaO}_6 \cdot 5\text{H}_2\text{O}$
- M = 308,30 g/mol
- CAS [28305-25-1]
- EINECS-No.: 248-953-3
- Solub. in water: (20 °C): 66 g/l
- Melting point: 240 °C
- Tariff number: 2918 11 00 00
- Applications: in food industry (preservative agent), dentifrices, in pharma industry.

**Specifications:**

assay (complexometric, on dried sample) . . . . .	98 - 101 %
identification . . . . .	passes test
appearance of solution . . . . .	passes test
acidity or alkalinity . . . . .	passes test

chlorides (Cl) . . . . . max. 0,02 %  
sulfates ( $\text{SO}_4$ ) . . . . . max. 0,04 %  
barium (Ba) . . . . . passes test  
heavy metals (as Pb) . . . . . max. 0,001 %  
iron (Fe) . . . . . max. 0,005 %  
magnesium and alkaline salts . . . . . max. 1 %  
volatile fatty acids . . . . . passes test  
loss on drying (125 °C) . . . . . 22 - 27 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
CA02250500	500 g	
CA02251000	1 kg	
CA0225005P	5 kg	

# Calciu

## Calcium nitrate tetrahydrate

- Synonyms: Nitric acid calcium salt tetrahydrate
- $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$
- M = 236,15 g/mol
- CAS [13477-34-4]
- EINECS-No.: 233-332-1
- Solub. in water: (20 °C): soluble
- Melting point: 42 °C

- LD 50 (oral, rat): 3900 mg/kg
- ADR: 5.1 O2 III UN 1454
- IMDG: 5.1 III UN 1454
- IATA/ICAO: 5.1 III UN 1454
- GHS-signal word: Warning
- GHS-H sentences: H272

- GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a
- Tariff number: 2834 29 80 00
- Applications: analytical chemistry, in pyrotechnics, in the electronic industry, in fertilizer compositions.
- Appearance: White crystals

### CA0230 Calcium nitrate tetrahydrate, extra pure

assay (complexometric) . . . . .min. 98 %	copper (Cu) . . . . .max. 0,002 %
insoluble in water . . . . .max. 0,01 %	iron (Fe) . . . . .max. 0,002 %
pH (5 %, $\text{H}_2\text{O}$ ) . . . . .4 - 7	lead (Pb) . . . . .max. 0,002 %
acidity (as $\text{HNO}_3$ ) . . . . .max. 0,05 %	nickel (Ni) . . . . .max. 0,002 %
chlorides (Cl) . . . . .max. 0,005 %	non precipitable by ammonium
sulfates ( $\text{SO}_4$ ) . . . . .max. 0,02 %	oxalate (as $\text{SO}_4$ ) . . . . .max. 0,3 %
ammonium ( $\text{NH}_4$ ) . . . . .max. 0,005 %	

Art. No.	Volume	Container
CA02300500	500 g	P
CA02301000	1 kg	P
CA0230005P	5 kg	P
CA0230025P	25 kg	P

### CA0231 Calcium nitrate tetrahydrate, reagent grade, ACS

assay (complexometric) . . . . .99 - 103 %	copper (Cu) . . . . .max. 0,0002 %
insoluble in water . . . . .max. 0,005 %	heavy metals (as Pb) . . . . .max. 0,0005 %
pH (5 %, $\text{H}_2\text{O}$ ) . . . . .5 - 7	iron (Fe) . . . . .max. 0,0005 %
chlorides (Cl) . . . . .max. 0,005 %	lead (Pb) . . . . .max. 0,0005 %
nitrites ( $\text{NO}_2$ ) . . . . .max. 0,001 %	magnesium (Mg) . . . . .max. 0,01 %
sulfates ( $\text{SO}_4$ ) . . . . .max. 0,002 %	potassium (K) . . . . .max. 0,005 %
ammonium ( $\text{NH}_4$ ) . . . . .max. 0,005 %	sodium (Na) . . . . .max. 0,01 %
barium (Ba) . . . . .max. 0,005 %	strontium (Sr) . . . . .max. 0,01 %

Art. No.	Volume	Container
CA02310500	500 g	P
CA02311000	1 kg	P
CA0231005P	5 kg	P
CA0231025P	25 kg	P

## Calcium oxide

### CA0260 Calcium oxide, natural, blocks

- Synonyms: Lime, caustic; Quicklime
- $\text{CaO}$
- M = 56,08 g/mol
- CAS [1305-78-8]
- EINECS-No.: 215-138-9
- Solub. in water: (20 °C): 1,65 g/l (exothermic reaction)
- Melting point: 2580 °C
- Boiling point: 2850 °C
- IATA/ICAO: 8 III UN 1910
- GHS-signal word: Danger
- GHS-H sentences: H318

- GHS-P sentences: P280 - P305 + P351 + P338 - P310
- Tariff number: 2825 90 19 00
- Applications: analytical chemistry, for pharmaceuticals synthesizing, absorbent for: water and carbon dioxide, laboratory reagent.

#### Specifications:

assay (complexometric) . . . . .min. 90 %
chlorides (Cl) . . . . .max. 0,05 %
sulfates ( $\text{SO}_4$ ) . . . . .max. 0,1 %
copper (Cu) . . . . .max. 0,01 %

iron (Fe) . . . . .max. 0,1 %
nickel (Ni) . . . . .max. 0,01 %
lead (Pb) . . . . .max. 0,01 %

Art. No.	Volume	Container
CA02600500	500 g	P
CA02601000	1 kg	P
CA0260005P	5 kg	P
CA0260025P	25 kg	P

## tri-Calcium phosphate

### CA0205 tri-Calcium phosphate anhydrous, extra pure, Pharmpur®, Ph Eur, BP

- Synonyms: Calcium phosphate tribasic, Tricalcium orthophosphate
- $\text{Ca}_3(\text{PO}_4)_2$
- M = 310,18 g/mol
- CAS [7758-87-4]
- EINECS-No.: 231-840-8
- Solub. in water: (20 °C): insoluble
- Melting point: ~ 1730 °C
- Tariff number: 2835 26 10 00
- Applications: in food industry (E-341), emulsifier, in the pharmaceuticals industry, in pharma industry.

#### Specifications:

assay (complexometric, as Ca) . . . . .35 - 40 %
identification . . . . .passes test
acid-insoluble matter . . . . .max. 0,2 %
chlorides (Cl) . . . . .max. 0,15 %
fluorides (F) . . . . .max. 0,0075 %
sulfates ( $\text{SO}_4$ ) . . . . .max. 0,5 %
arsenic (As) . . . . .max. 0,0003 %
heavy metals (as Pb) . . . . .max. 0,003 %
iron (Fe) . . . . .max. 0,04 %
residue on ignition (800 °C) . . . . .max. 8 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

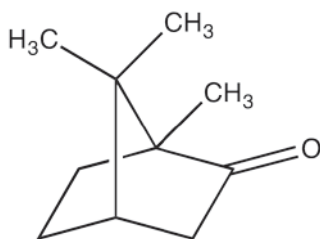
Art. No.	Volume	Container
CA02050500	500 g	P
CA02051000	1 kg	P
CA0205005P	5 kg	P
CA0205025P	25 kg	P



# Campho

## DL-Camphor

AL0070 DL-Camphor, synthetic, extra pure



- Synonyms: 1,7,7-Trimethylbicyclo[2.2.1]heptan-2-one
- $C_{10}H_{16}O$
- $M = 152,24 \text{ g/mol}$
- CAS [76-22-2]
- EINECS-No.: 200-945-0
- Solub. in water: (25 °C): 1,25 g/l
- Melting point: 172 - 176 °C
- Flash pt. 64 °C
- Ignition temp.: 466 °C
- ADR: 4.1 F1 III UN 2717
- IMDG: 4.1 III UN 2717
- IATA/ICAO: 4.1 III UN 2717
- GHS-signal word: Danger
- GHS-H sentences: H301 - H228
- GHS-P sentences: P210 - P241 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2914 21 00 00

- Applications: plasticizer, in explosive compositions, in pyrotechnics, manufacturing of lacquers, cosmetics, for pharmaceuticals synthesizing.
- Appearance: White powder

### Specifications:

identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 specific rotation ( $[\alpha]_{20}^D$ ,  $c = 2$ , ethanol) . . . . . - 0,15 ° - + 0,15 °  
 insoluble in  $C_2H_5OH$  . . . . . passes test  
 acidity or alkalinity . . . . . passes test  
 halogen compounds (as Cl) . . . . . max. 0,01 %  
 residue on evaporation . . . . . max. 0,05 %  
 water . . . . . passes test

Art. No.	Volume	Container
AL00701000	1 kg	

## Canada Balsam

BA0030 Canada balsam, for microscopy



- Synonyms: Balsam Canada
- CAS [8007-47-4]
- EINECS-No.: 232-362-2
- Solub. in water: (20 °C): insoluble
- Flash pt. 39 °C
- LD 50 (oral, rat): > 5000 g/kg
- ADR: 3 F1 III UN 1993
- IMDG: 3 III UN 1993

- IATA/ICAO: 3 III UN 1993
- GHS-signal word: Warning
- GHS-H sentences: H226
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 1301 90 90 00
- Applications: microscopy.

### Specifications:

suitability for microscopy . . . . . passes test

Art. No.	Volume	Container
BA00300025	25 ml	
BA00300100	100 ml	
BA00300250	250 ml	

## Carbon disulfide



- Synonyms: Carbon bisulfide, Dithiocarbonic anhydride
- $CS_2$
- $M = 76,14 \text{ g/mol}$
- CAS [75-15-0]
- EINECS-No.: 200-843-6
- Density: 1,26 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 2,1 g/l
- Melting point: -111,6 °C
- Boiling point: 46,5 °C
- Flash pt. -30 °C
- Ignition temp.: 100 °C
- Vapour pressure: (20 °C) 398 hPa

- Dielectric const.: (20 °C) 2,6
- LD 50 (oral, rat): 3188 mg/kg
- EC-Index-No.: 006-003-00-3
- ADR: 3 FT1 I UN 1131
- IMDG: 3 I UN 1131
- IATA/ICAO: Forbidden UN 1131
- GHS-signal word: Danger
- GHS-H sentences: H225 - H372 - H361fd - H315 - H319
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2813 10 00 00
- Applications: synthesis of organic products, solvents.

SU0170 Carbon disulfide, extra pure



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,262 - 1,264  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0005 %  
 sulfites (as SO<sub>2</sub>) . . . . . max. 0,003 %  
 copper (Cu) . . . . . max. 0,00002 %

iron (Fe) . . . . . max. 0,00005 %  
 lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 benzene (G.C.) . . . . . max. 0,005 %  
 toluene (G.C.) . . . . . max. 0,005 %  
 residue on evaporation . . . . . max. 0,002 %

water (K.F.) . . . . . max. 0,02 %

Art. No.	Volume	Container
SU01701000	1 l	

SU0171 Carbon disulfide, reagent grade, ACS, Reag. Ph Eur



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . approx. 1,26  
 appearance . . . . . clear and colourless  
 boiling point . . . . . 46 - 47 °C  
 colour (Hazen) . . . . . max. 10  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %

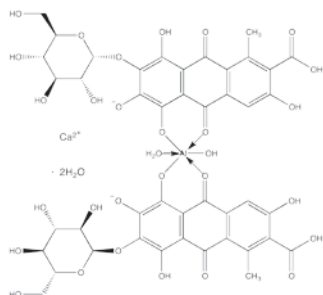
cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 sulfur dioxide (SO<sub>2</sub>) . . . . . max. 0,00025 %

hydrogen sulfide (as H<sub>2</sub>S) . . . . . max. 0,00015 %  
 benzene (G.C.) . . . . . max. 0,003 %  
 toluene (G.C.) . . . . . max. 0,0005 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,01 %

Art. No.	Volume	Container
SU01711000	1 l	

## Carmine, C.I. 75470

## CA0380 Carmine, C.I. 75470, for microscopy



- Synonyms: Alum lacquer of carminic acid
- $C_{44}H_{37}AlCaO_{29} \cdot 3H_2O$
- $M = 492,38 \text{ g/mol}$
- CAS [1390-65-4]
- EINECS-No.: 215-724-4
- Solub. in water: (20 °C): insoluble
- Tariff number: 3203 00 90 00
- Applications: microscopy, for biology, photography, manufacturing of inks, in food industry, cosmetics.

Absorption maximum  $\lambda_2$  (in DMSO) . . . . . 525 - 533 nm  
 Absorptivity (A1%/1 cm;  $\lambda_1$  max) . . . . . 70 - 110  
 Absorptivity (A1%/1 cm;  $\lambda_2$  max) . . . . . 100 - 150  
 loss on drying (110 °C) . . . . . max. 15 %  
 residue on ignition . . . . . 9 - 17 %

**Specifications:**

Absorption maximum  $\lambda_1$  (in DMSO) . . . . . 563 - 571 nm

Art. No.	Volume	Container
CA03800025	25 g	0

## Carrez's Reagent I

## RE0016 Carrez's Reagent I

- Density: 1,11 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00

**Specifications:**

composition of 1 liter:  
 zinc acetate dihydrate . . . . . 267 g  
 acetic acid (CH<sub>3</sub>COOH) . . . . . 32 ml  
 water to make 1 liter

Art. No.	Volume	Container
RE00161000	1 l	P
RE0016005P	5 l	P

## Carrez's Reagent II

## RE0017 Carrez's Reagent II

- Density: 1,07 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00

**Specifications:**

composition of 1 liter:  
 Potassium hexacyanoferrate(II) trihydrate . . . . . 136 g  
 water to make 1 liter

Art. No.	Volume	Container
RE00171000	1 l	P
RE0017005P	5 l	P

## Cedar wood oil

## AC0020 Cedar wood oil, thickened

- CAS [8000-27-9]
- Density: 0,99 g/cm<sup>3</sup>
- Flash pt. 110 °C
- Refraction index: (n 20°C/D) 1,518
- LD 50 (oral, rat): > 5000 mg/kg

- Tariff number: 3301 29 61 00
- Applications: microscopy, for biology.

insoluble in C<sub>2</sub>H<sub>5</sub>OH . . . . . passes test

**Specifications:**

insoluble in C<sub>2</sub>H<sub>5</sub>OC<sub>2</sub>H<sub>5</sub> . . . . . passes test

Art. No.	Volume	Container
AC00200025	25 g	0

## Cerium(III) nitrate hexahydrate

## CE0080 Cerium(III) nitrate hexahydrate, extra pure, Reag. Ph Eur

- Ce(NO<sub>3</sub>)<sub>3</sub>·6H<sub>2</sub>O
- $M = 434,23 \text{ g/mol}$
- CAS [10294-41-4]
- EINECS-No.: 233-297-2
- Solub. in water: (20 °C): soluble
- LD 50 (oral, rat): 4200 mg/kg
- ADR: 5.1 O2 II UN 1477
- IMDG: 5.1 II UN 1477
- IATA/ICAO: 5.1 II UN 1477
- GHS-signal word: Danger

- GHS-H sentences: H272
- GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a
- Tariff number: 2846 10 00 90
- Applications: analytical chemistry, laboratory reagent, inorganic salts.
- Appearance: Colourless to white crystalline powder

chlorides (Cl) . . . . . max. 0,003 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,001 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

**Specifications:**

assay (complexometric) . . . . . min. 98,5 %

Art. No.	Volume	Container
CE00800100	100 g	P

## Cerium(IV) oxide

## CE0090 Cerium(IV) oxide, synthesis grade

- CeO<sub>2</sub>
- $M = 172,12 \text{ g/mol}$
- CAS [1306-38-3]
- EINECS-No.: 215-150-4
- Solub. in water: (20 °C): insoluble
- Melting point: ~ 2000 °C
- LD 50 (oral, rat): > 5000 mg/kg

- Tariff number: 2846 10 00 90
- Applications: oxidizing agent, in optics, inorganic salts.

**Specifications:**

assay (on ignited sample) . . . . . min. 99 %  
 residue on ignition . . . . . max. 1 %

Art. No.	Volume	Container
CE00900100	100 g	P

# Cerium

## Cerium(IV) sulfate, volumetric solutions

### CE0102 Cerium(IV) sulfate, solution 0,1 mol/l (0,1 N)

- $\text{Ce}(\text{SO}_4)_2 \cdot 4\text{H}_2\text{O}$
- M = 404,30 g/mol
- CAS [10294-42-5]
- EINECS-No.: 237-029-5
- Density: 1,08 g/cm<sup>3</sup>
- GHS-H sentences: EUH210
- Tariff number: 2846 10 00 90
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty  $\pm$  0,001  
 1 ml = 0,04043 g  $\text{Ce}(\text{SO}_4)_2 \cdot 4\text{H}_2\text{O}$  This volumetric solution was checked by means of potentiometric methods using Scharlau's sodium oxalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
CE01021000	1 l	Ⓒ

### CE0101 Cerium(IV) sulfate, solution 0,05 mol/l (0,05 N)

- $\text{Ce}(\text{SO}_4)_2 \cdot 4\text{H}_2\text{O}$
- M = 404,30 g/mol
- CAS [10294-42-5]
- EINECS-No.: 237-029-5
- Density: 1,04 g/cm<sup>3</sup>
- GHS-H sentences: EUH210
- Tariff number: 2846 10 00 90
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty  $\pm$  0,001  
 1 ml = 0,020215 g  $\text{Ce}(\text{SO}_4)_2 \cdot 4\text{H}_2\text{O}$  This volumetric solution was checked by means of potentiometric methods using Scharlau's sodium oxalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
CE01011000	1 l	Ⓒ

## Cesium chloride

- CsCl
- M = 168,36 g/mol
- CAS [7647-17-8]
- EINECS-No.: 231-600-2

- Solub. in water: (20 °C): soluble
- Melting point: 646 °C
- Boiling point: 1382 °C
- LD 50 (oral, rat): 2600 mg/kg

- Tariff number: 2827 39 80 90
- Applications: analytical chemistry, laboratory reagent, for the synthesis of: cesium, in radiology applications.

### CE0110 Cesium chloride, reagent grade

assay (argentometric) . . . . . min. 99,5 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,002 %  
 total nitrogen (as N) . . . . . max. 0,001 %  
 aluminium (Al) . . . . . max. 0,0005 %  
 copper (Cu) . . . . . max. 0,0003 %  
 iron (Fe) . . . . . max. 0,0003 %

lead (Pb) . . . . . max. 0,0001 %  
 lithium (Li) . . . . . max. 0,00005 %  
 magnesium (Mg) . . . . . max. 0,0005 %  
 potassium (K) . . . . . max. 0,002 %  
 rubidium (Rb) . . . . . max. 0,008 %  
 sodium (Na) . . . . . max. 0,002 %

zinc (Zn) . . . . . max. 0,0003 %

Art. No.	Volume	Container
CE01100100	100 g	Ⓒ

### CE0121 Cesium chloride, molecular biology grade

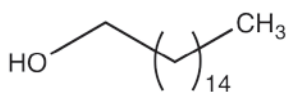
assay (argentometric) . . . . . min. 99,5 %  
 absorbance of an aqueous solution  
 3 M in a 1 cm cell at 260 nm . . . . . max. 0,1 AU  
 absorbance of an aqueous solution

3 M in a 1 cm cell at 280 nm . . . . . max. 0,02 AU  
 lead (Pb) . . . . . max. 0,0001 %  
 DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
CE01210100	100 g	Ⓒ
CE01210500	500 g	Ⓒ

## Cetyl alcohol

### AL0190 Cetyl alcohol, extra pure



- Synonyms: 1-Hexadecanol
- $\text{C}_{16}\text{H}_{34}\text{O}$
- M = 242,45 g/mol
- CAS [36653-82-4]
- EINECS-No.: 253-149-0
- Solub. in water: (20 °C): insoluble
- Melting point: ~ 49 - 53 °C
- Boiling point: ~ 355 °C
- Flash pt. > 110 °C
- Ignition temp.: ~ 235 °C
- Vapour pressure: (20 °C) 5000 mg/kg
- Tariff number: 2905 17 00 00
- Applications: synthesis of organic products, for pharmaceuticals synthesizing, cosmetics, emulsifier, in pharma industry.

**Specifications:**  
 assay (G.C.) . . . . . min. 96 %  
 identity (IR-spectrum) . . . . . passes test  
 melting point . . . . . 46 - 52 °C  
 appearance of solution (2,5 %, ethanol 96%) . . . . . passes test  
 acid value . . . . . max. 1  
 hydroxyl value . . . . . 218 - 238  
 iodine value . . . . . max. 2  
 saponification index . . . . . max. 2

Art. No.	Volume	Container
AL01901000	1 kg	Ⓒ

## Charcoal

- C
- M = 12,01 g/mol
- CAS [7440-44-0]

- EINECS-No.: 231-153-3
- Solub. in water: (20 °C): insoluble
- Tariff number: 3802 10 00 20

- Applications: analytical chemistry, for decolourization of liquids, antidote, in explosive compositions.

### CA0346 Charcoal activated, granulated

acid - extractable matter . . . . . 0,8 %  
 pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 4 - 7  
 iodine adsorption . . . . . 1050 mg/g  
 methylene blue adsorption . . . . . min. 21 g/100 g  
 calcium (Ca) . . . . . max. 0,02 %

iron (Fe) . . . . . max. 0,02 %  
 residue on ignition . . . . . max. 3 %  
 loss on drying . . . . . max. 2 %

Art. No.	Volume	Container
CA03460500	500 g	Ⓒ
CA03461000	1 kg	Ⓒ
CA0346005P	5 kg	Ⓒ

## CA0350 Charcoal, animal, powder, extra pure

acidity or alkalinity. . . . . passes test  
sulfides . . . . . passes test

Art. No.	Volume	Container
CA03500500	500 g	P

## CA0351 Charcoal activated, powder, extra pure

solubility in HCl. . . . . max. 3 %  
solubility in water . . . . . max. 0,5 %  
pH (5 %, H<sub>2</sub>O) . . . . . 5 - 7  
chlorides (Cl<sub>2</sub>) . . . . . max. 0,02 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,05 %  
heavy metals (as Pb) . . . . . max. 0,005 %

iron (Fe) . . . . . max. 0,05 %  
zinc (Zn) . . . . . max. 0,001 %  
methylene blue  
adsorption (0,15 % solution) . . . . . min. 12 ml/0,1g  
residue on ignition (600 °C) . . . . . max. 2 %  
loss on drying . . . . . max. 10 %

Art. No.	Volume	Container
CA03510250	250 g	P
CA03510500	500 g	P
CA03511000	1 kg	P
CA0351005P	5 kg	P

## CA0352 Charcoal activated, powder, reagent grade

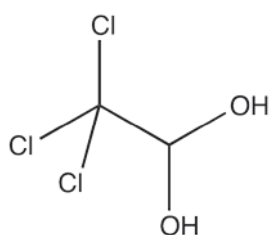
identity . . . . . passes test  
solubility in ethanol . . . . . max. 0,2 %  
soluble in HNO<sub>3</sub> . . . . . max. 1 %  
solubility in water . . . . . max. 0,5 %  
pH (5 %, H<sub>2</sub>O) . . . . . 4 - 7  
chlorides (Cl<sub>2</sub>) . . . . . max. 0,01 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %

heavy metals (as Pb) . . . . . max. 0,003 %  
iron (Fe) . . . . . max. 0,03 %  
lead (Pb) . . . . . max. 0,001 %  
zinc (Zn) . . . . . max. 0,001 %  
n-hexane adsorption . . . . . min. 30 %  
residue on ignition (600 °C) . . . . . max. 1 %  
loss on drying (120 °C) . . . . . max. 5 %

Art. No.	Volume	Container
CA03520250	250 g	P
CA03520500	500 g	P
CA03521000	1 kg	P
CA0352005P	5 kg	P

## Chloral hydrate

## CL0010 Chloral hydrate, extra pure



- Synonyms: Trichloroacetaldehyde hydrate
- C<sub>2</sub>H<sub>3</sub>Cl<sub>3</sub>O<sub>2</sub>
- M = 165,40 g/mol
- CAS [302-17-0]
- EINECS-No.: 206-117-5
- Solub. in water: (20 °C): soluble
- Melting point: 51,7 °C
- Boiling point: 96,3 °C
- Vapour pressure: (20 °C) 13 hPa
- LD 50 (oral, rat): 479 mg/kg
- EC-Index-No.: 605-014-00-6
- ADR: 6.1 T2 II UN 2811
- IMDG: 6.1 II UN 2811
- IATA/ICAO: 6.1 II UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H301 - H315 - H319
- GHS-P sentences: P280 - P301 + P310 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2905 59 99 00
- Applications: analytical chemistry, synthesis of organic products, laboratory reagent.

- Appearance: White crystalline powder

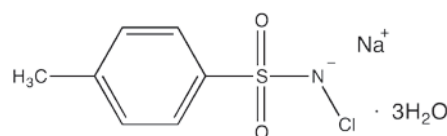
## Specifications:

assay (acidimetric) . . . . . 98,5 - 101 %  
identification . . . . . passes test  
acidity . . . . . passes test  
appearance of solution (10 %, H<sub>2</sub>O) . . . . . clear and colourless  
pH (10 %, H<sub>2</sub>O) . . . . . 3,5 - 5,5  
chlorides (Cl<sub>2</sub>) . . . . . max. 0,01 %  
heavy metals (as Pb) . . . . . max. 0,002 %  
toluene . . . . . max. 0,089 %  
chloral alcoholate . . . . . passes test  
substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
residue on ignition . . . . . max. 0,1 %

Art. No.	Volume	Container
CL00100500	500 g	P
CL00101000	1 kg	P

## Chloramine T trihydrate

## CL0020 Chloramine T trihydrate, reagent grade, ACS



- Synonyms: N-Chloro-4-methylbenzenesulfonamide sodium salt, N-Chloro-p-toluenesulfonamide sodium salt, Tosylchloramide sodium, N-Chloro-4-toluenesulfonamide sodium salt
- C<sub>7</sub>H<sub>7</sub>ClNNaO<sub>2</sub>S·3H<sub>2</sub>O
- M = 281,69 g/mol
- CAS [7080-50-4]
- EINECS-No.: 204-854-7
- Solub. in water: (25 °C): 150 g/l
- Melting point: > 70 °C (decomposes)
- Flash pt. 192 °C
- LD 50 (oral, rat): ~ 1000 mg/kg
- EC-Index-No.: 616-010-00-9
- ADR: 8 C8 III UN 3263
- IMDG: 8 III UN 3263
- IATA/ICAO: 8 III UN 3263
- GHS-signal word: Danger
- GHS-H sentences: H334 - H314 - H302 - EUH031
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 2935 00 90 90
- Applications: analytical chemistry, synthesis of organic products, for the detection of: halogens and bromates.
- Appearance: White to off-white crystalline powder

## Specifications:

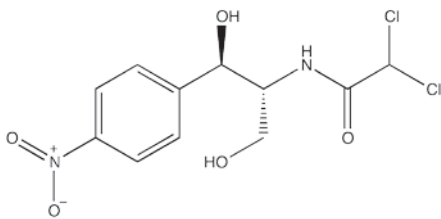
assay (iodometric) . . . . . 99 - 103 %  
identity (IR-spectrum) . . . . . passes test  
appearance of aqueous solution . . . . . passes test  
insoluble in C<sub>2</sub>H<sub>5</sub>OH . . . . . max. 1,5 %  
pH (5 %, H<sub>2</sub>O) . . . . . 8 - 10  
suitability for determination of bromide (Br) . . . . . passes test

Art. No.	Volume	Container
CL00200100	100 g	P
CL00200250	250 g	P
CL00201000	1 kg	P

# Chlora

## Chloramphenicol

### CL0025 Chloramphenicol, for biochemical purposes



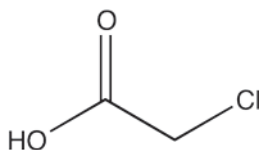
- Synonyms: Chloromycetin
- $C_{11}H_{12}Cl_2N_2O_5$
- $M = 323,13 \text{ g/mol}$
- CAS [56-75-7]
- EINECS-No.: 200-287-4
- Solub. in water: (25 °C): 2,5 g/l
- Melting point: 149 - 153 °C
- LD 50 (oral, rat): 2500 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H350
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2941 40 00 00
- Applications: in biochemistry, for pharmaceuticals synthesizing, antibacterian.

#### Specifications:

assay (DSC) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 specific rotation ( $[\alpha]_{20}^D$ ,  $c = 5$ ,  
 absolut ethanol) ..... + 18,5 ° - + 20,5 °  
 acidity or alkalinity .....passes test  
 residue on ignition .....max. 0,1 %  
 loss on drying (105 °C) .....max. 0,5 %

Art. No.	Volume	Container
CL00250050	50 g	0
CL00250500	500 g	0

## Chloroacetic acid



- Synonyms: Monochloroacetic acid
- $CH_2ClCOOH$
- $M = 94,50 \text{ g/mol}$
- CAS [79-11-8]
- EINECS-No.: 201-178-4
- Solub. in water: (20 °C): soluble
- Melting point: 60 - 63 °C
- Boiling point: 189 °C
- Flash pt. 126 °C
- Ignition temp.: 470 °C
- Vapour pressure: (20 °C) 1 hPa
- LD 50 (oral, rat): 55 mg/kg
- EC-Index-No.: 607-003-00-1

- ADR: 6.1 TC2 II UN 1751
- IMDG: 6.1 II UN 1751
- IATA/ICAO: 6.1 II UN 1751
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H331 - H314 - H400
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2915 40 00 90
- Applications: analytical chemistry, manufacture of dyes, synthesis of organic products, for acetylations.

### AC0747 Chloroacetic acid, extra pure

assay (acidimetric) .....min. 99,5 %  
 identity (IR-spectrum) .....passes test  
 insoluble in water .....max. 0,01 %  
 chlorides (Cl) .....max. 0,01 %  
 nitrates (NO<sub>3</sub>) .....max. 0,005 %  
 sulfates (SO<sub>4</sub>) .....max. 0,01 %

copper (Cu) .....max. 0,001 %  
 heavy metals (as Pb) .....max. 0,001 %  
 iron (Fe) .....max. 0,001 %  
 lead (Pb) .....max. 0,001 %  
 nickel (Ni) .....max. 0,001 %  
 residue on ignition .....max. 0,05 %

Art. No.	Volume	Container
AC07470500	500 g	0
AC07471000	1 kg	0
AC0747005P	5 kg	0

### AC0750 Chloroacetic acid, reagent grade, ACS

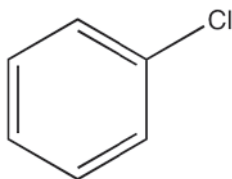
assay (acidimetric) .....min. 99,5 %  
 identity (IR-spectrum) .....passes test  
 insoluble in water .....max. 0,003 %  
 nitrogen compounds (as N) .....max. 0,005 %  
 chlorides (Cl) .....max. 0,005 %  
 nitrates (NO<sub>3</sub>) .....max. 0,001 %  
 sulfates (SO<sub>4</sub>) .....max. 0,005 %

copper (Cu) .....max. 0,0005 %  
 heavy metals (as Pb) .....max. 0,001 %  
 iron (Fe) .....max. 0,0005 %  
 lead (Pb) .....max. 0,0005 %  
 nickel (Ni) .....max. 0,0005 %  
 acetone (G.C.) .....max. 0,02 %  
 carbonyl compounds (as C<sub>2</sub>H<sub>4</sub>O) .....max. 0,01 %

substances darkened by H<sub>2</sub>SO<sub>4</sub> .....passes test  
 residue on ignition .....max. 0,02 %

Art. No.	Volume	Container
AC07500500	500 g	0

## Chlorobenzene



- Synonyms: Monochlorobenzene, Benzene chloride, Phenyl chloride
- $C_6H_5Cl$
- $M = 112,56 \text{ g/mol}$
- CAS [108-90-7]
- EINECS-No.: 203-628-5
- Density: 1,11 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,5 g/l
- Melting point: -45 °C
- Boiling point: 132 °C
- Flash pt. 28 °C
- Ignition temp.: 590 °C
- Vapour pressure: (20 °C) 12 hPa
- Refraction index: (n 20 °C/D) 1,5248

- Dielectric const.: (25 °C) 5,6
- LD 50 (oral, rat): 1100 mg/kg
- EC-Index-No.: 602-033-00-1
- ADR: 3 F1 III UN 1134
- IMDG: 3 III UN 1134
- IATA/ICAO: 3 III UN 1134
- GHS-signal word: Warning
- GHS-H sentences: H226 - H332 - H411
- GHS-P sentences: P210 - P241 - P261 - P280 - P303 + P361 + P353 - P501a
- Tariff number: 2903 91 00 00
- Applications: laboratory reagent, synthesis of organic products, solvents (painting).

### CL0110 Chlorobenzene, extra pure

assay (G.C.) .....min. 99,5 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....1,105 - 1,107  
 acidity .....max. 0,01 meq/g  
 copper (Cu) .....max. 0,00002 %  
 iron (Fe) .....max. 0,00005 %  
 lead (Pb) .....max. 0,00002 %  
 nickel (Ni) .....max. 0,00002 %

benzene (G.C.) .....max. 0,05 %  
 total dichlorobenzenes (G.C.) .....max. 0,01 %  
 total chlorotoluenes (G.C.) .....max. 0,05 %  
 sulphur compounds (as CS<sub>2</sub>) .....max. 0,001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> .....passes test  
 residue on evaporation .....max. 0,005 %  
 water (K.F.) .....max. 0,2 %

Art. No.	Volume	Container
CL01101000	1 l	0
CL01102500	2,5 l	0
CL0110005P	5 l	0
CL0110025P	25 l	0



## CL0111 Chlorobenzene, reagent grade, ACS



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,105 - 1,107  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,004 meq/g  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %

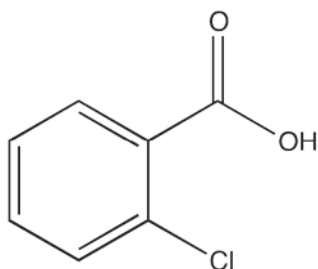
iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 benzene (G.C.) . . . . . max. 0,01 %  
 total dichlorobenzenes (G.C.) . . . . . max. 0,01 %  
 total chlorotoluenes (G.C.) . . . . . max. 0,05 %  
 sulphur compounds (as CS<sub>2</sub>) . . . . . max. 0,0003 %

substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,02 %

Art. No.	Volume	Container
CL01111000	1 l	0
CL01112500	2,5 l	0
CL0111005P	5 l	0

## 2-Chlorobenzoic acid

## AC0765 2-Chlorobenzoic acid, extra pure



- Synonyms: o-Chlorobenzoic acid
- C<sub>7</sub>H<sub>5</sub>ClO<sub>2</sub>
- M = 156,57 g/mol
- CAS [118-91-2]
- EINECS-No.: 204-285-4
- Solub. in water (20 °C): 21 g/l
- Melting point: 139 - 142 °C
- Boiling point: 284 - 286 °C
- Flash pt. 173 °C
- Ignition temp.: 530 °C
- LD 50 (oral, rat): 2465 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

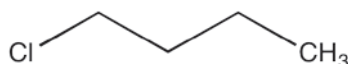
- Tariff number: 2916 39 00 90
- Applications: synthesis of organic products.

## Specifications:

assay (acidimetric) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 4-chlorobenzoic acid . . . . . max. 0,3 %  
 residue on ignition . . . . . max. 0,01 %

Art. No.	Volume	Container
AC07650250	250 g	0

## 1-Chlorobutane



- Synonyms: n-Butyl chloride, n-Propylcarbonyl chloride
- C<sub>4</sub>H<sub>9</sub>Cl
- M = 92,57 g/mol
- CAS [109-69-3]
- EINECS-No.: 203-696-6
- Density: 0,88 g/cm<sup>3</sup>
- Solub. in water (20 °C): ~ 0,5 g/l
- Melting point: -123 °C
- Boiling point: 78 °C
- Flash pt. ~ -17 °C
- Ignition temp.: ~ 280 °C
- Vapour pressure: (20 °C) ~ 110 hPa

- LD 50 (oral, rat): 2670 mg/kg
- EC-Index-No.: 602-059-00-3
- ADR: 3 F1 II UN 1127
- IMDG: 3 II UN 1127
- IATA/ICAO: 3 II UN 1127
- GHS-signal word: Danger
- GHS-H sentences: H225
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2903 19 80 00
- Applications: analytical chemistry, synthesis of organic products.

## CL0119 1-Chlorobutane, reagent grade



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,885 - 0,887  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0005 meq/g  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %

cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 zinc (Zn) . . . . . max. 0,00001 %

sulfur compounds (as S) . . . . . max. 0,002 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,03 %

Art. No.	Volume	Container
CL01191000	1 l	0
CL0119025A	25 l	0

## CL0120 1-Chlorobutane, HPLC grade

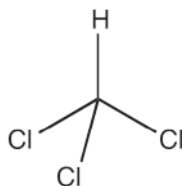


assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,885 - 0,887  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,03 %

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 T(%) A (AU)  
 225 nm. . . . . 20 % 0,699 AU  
 230 nm. . . . . 50 % 0,301 AU  
 245 nm. . . . . 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
CL01201000	1 l	0
CL01202500	2,5 l	0

## Chloroform



- Synonyms: Trichloromethane, Formyl trichloride
- CHCl<sub>3</sub>
- M = 119,38 g/mol
- CAS [67-66-3]
- EINECS-No.: 200-663-8
- Density: 1,47 g/cm<sup>3</sup>
- Solub. in water (20 °C): 8 g/l
- Melting point: -63 °C
- Boiling point: 61 °C
- Ignition temp.: 982 °C
- Vapour pressure: (20 °C) 213 hPa
- Dielectric const.: (20 °C) 4,8
- LD 50 (oral, rat): 908 mg/kg

- EC-Index-No.: 602-006-00-4
- ADR: 6.1 T1 III UN 1888
- IMDG: 6.1 III UN 1888
- IATA/ICAO: 6.1 III UN 1888
- GHS-signal word: Danger
- GHS-H sentences: H351 - H361d - H331 - H302 - H372 - H319 - H315 -
- GHS-P sentences: P260 - P261 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2903 13 00 00
- Applications: solvents, analytical chemistry, in the rubber industry.

# Chloro

## CL0198 Chloroform, synthesis grade, stabilized with ethanol

assay (G.C.)	min. 99 %
identity (IR-spectrum)	passes test
density (20°/4°)	1,474 - 1,483
ethanol (G.C.)	0,5 - 1,0 %
residue on evaporation	max. 0,005 %
water (K.F.)	max. 0,03 %

Art. No.	Volume	Container
CL01981000	1 l	
CL01982500	2,5 l	
CL0198005P	5 l	
CL0198025P	25 l	

## CL0200 Chloroform, extra pure, stabilized with ethanol

assay (G.C.)	99,0 - 99,6 %	iron (Fe)	max. 0,00002 %
identity (IR-spectrum)	passes test	lead (Pb)	max. 0,00002 %
density (20°/20°)	1,477 - 1,487	nickel (Ni)	max. 0,00002 %
ethanol (G.C.)	0,4 - 1,0 %	aldehydes, ketones	passes test
acidity or alkalinity	passes test	carbon tetrachloride (G.C.)	max. 0,01 %
free chlorine (as Cl)	passes test	residue on evaporation	max. 0,001 %
chlorides (Cl)	max. 0,0002 %	water (K.F.)	max. 0,05 %
copper (Cu)	max. 0,00002 %		

Art. No.	Volume	Container
CL02001000	1 l	
CL02002500	2,5 l	
CL0200005P	5 l	
CL0200025A	25 l	

## CL0210 Chloroform, extra pure, stabilized with 150 ppm of amylene

assay (G.C.)	min. 99,9 %	amylene (G.C.)	approx. 150 ppm
identity (IR-spectrum)	passes test	chlorides (Cl)	max. 0,0001 %
density (20°/4°)	1,487 - 1,490	copper (Cu)	max. 0,00002 %
acidity or alkalinity	passes test	iron (Fe)	max. 0,00002 %
free chlorine (as Cl)	passes test	lead (Pb)	max. 0,00002 %
aldehydes, ketones	passes test	nickel (Ni)	max. 0,00002 %

residue on evaporation	max. 0,001 %
water (K.F.)	max. 0,05 %

Art. No.	Volume	Container
CL02102500	2,5 l	

## CL0203 Chloroform, reagent grade, ACS, ISO, stabilized with ethanol

assay (G.C.)	99,0 - 99,5 %	cobalt (Co)	max. 0,000002 %
identity (IR-spectrum)	passes test	copper (Cu)	max. 0,000002 %
density (20°/4°)	1,474 - 1,483	iron (Fe)	max. 0,00001 %
appearance	clear	lead (Pb)	max. 0,00001 %
colour (Hazen)	max. 10	magnesium (Mg)	max. 0,00001 %
ethanol (G.C.)	0,5 - 1,0 %	manganese (Mn)	max. 0,000002 %
free acid (as HCl)	max. 0,0002 %	nickel (Ni)	max. 0,000002 %
free chlorine (as Cl)	max. 0,00003 %	tin (Sn)	max. 0,00001 %
chlorides (Cl)	max. 0,00002 %	zinc (Zn)	max. 0,00001 %
aluminium (Al)	max. 0,00005 %	carbon tetrachloride (G.C.)	max. 0,01 %
barium (Ba)	max. 0,00001 %	dichloromethane (G.C.)	max. 0,01 %
boron (B)	max. 0,000002 %	tetrachloroethylene (G.C.)	max. 0,01 %
cadmium (Cd)	max. 0,000005 %	trichloroethylene (G.C.)	max. 0,01 %
calcium (Ca)	max. 0,00005 %	carbonyl compounds (as CO)	max. 0,005 %
chromium (Cr)	max. 0,000002 %	aldehydes and ketones (as	

C <sub>2</sub> H <sub>5</sub> CHO)	passes test
substances darkened by H <sub>2</sub> SO <sub>4</sub>	passes test
residue on evaporation	max. 0,0005 %
water (K.F.)	max. 0,01 %
suitability for use in dithizone tests	passes test

Art. No.	Volume	Container
CL02031000	1 l	
CL02032500	2,5 l	
CL0203005P	5 l	
CL0203025A	25 l	
CL0203200L	200 l	

## CL0204 Chloroform, reagent grade, ACS, stabilized with ethanol, for determinations with dithizone

assay (G.C.)	99,0 - 99,5 %	cobalt (Co)	max. 0,000002 %
identity (IR-spectrum)	passes test	copper (Cu)	max. 0,000002 %
density (20°/4°)	1,474 - 1,483	iron (Fe)	max. 0,00001 %
ethanol (G.C.)	0,5 - 1,0 %	lead (Pb)	max. 0,00001 %
free acid (as HCl)	max. 0,0005 %	magnesium (Mg)	max. 0,00001 %
free chlorine (as Cl)	passes test	manganese (Mn)	max. 0,000002 %
chlorides (Cl)	max. 0,0001 %	nickel (Ni)	max. 0,000002 %
aluminium (Al)	max. 0,00005 %	tin (Sn)	max. 0,00001 %
barium (Ba)	max. 0,00001 %	zinc (Zn)	max. 0,00001 %
boron (B)	max. 0,000002 %	carbon tetrachloride (G.C.)	max. 0,01 %
cadmium (Cd)	max. 0,000005 %	dichloromethane (G.C.)	max. 0,01 %
calcium (Ca)	max. 0,00005 %	tetrachloroethylene (G.C.)	max. 0,01 %
chromium (Cr)	max. 0,000002 %	trichloroethylene (G.C.)	max. 0,01 %

carbonyl compounds (as CO)	max. 0,005 %
substances darkened by H <sub>2</sub> SO <sub>4</sub>	passes test
residue on evaporation	max. 0,0005 %
water (K.F.)	max. 0,01 %
suitability for use in dithizone tests	passes test

Art. No.	Volume	Container
CL02041000	1 l	
CL02042500	2,5 l	

## CL0218 Chloroform, stabilized with ethanol, Multisolvant® HPLC grade ACS ISO UV-VIS

assay (G.C.)	min. 99,8 %	iron (Fe)	max. 0,000002 %
identity (IR-spectrum)	passes test	lead (Pb)	max. 0,000001 %
density (20°/4°)	1,474 - 1,483	magnesium (Mg)	max. 0,00001 %
appearance	clear	manganese (Mn)	max. 0,000001 %
colour (Hazen)	max. 10	nickel (Ni)	max. 0,000002 %
ethanol (G.C.)	0,5 - 1,0 %	tin (Sn)	max. 0,00001 %
acidity	max. 0,0001 meq/g	zinc (Zn)	max. 0,00003 %
free chlorine (as Cl)	max. 0,00003 %	aldehydes and ketones (as	
chlorides (Cl)	max. 0,00002 %	C <sub>2</sub> H <sub>5</sub> CHO)	passes test
aluminium (Al)	max. 0,00001 %	carbon tetrachloride (G.C.)	max. 0,01 %
barium (Ba)	max. 0,00001 %	dichloromethane (G.C.)	max. 0,01 %
boron (B)	max. 0,000001 %	tetrachloroethylene (G.C.)	max. 0,01 %
cadmium (Cd)	max. 0,000002 %	trichloroethylene (G.C.)	max. 0,01 %
calcium (Ca)	max. 0,000001 %	suitability for use in dithizone tests	passes test
chromium (Cr)	max. 0,000002 %	substances darkened by H <sub>2</sub> SO <sub>4</sub>	passes test
cobalt (Co)	max. 0,000002 %	residue on evaporation	max. 0,0002 %
copper (Cu)	max. 0,000001 %		

water (K.F.)	max. 0,01 %
liquid chromatography suitability	
absorbance	
min. transmission/max. absorbance in a 1,0 cm cell at wavelength:	
250 nm	50 % 0,301 AU
265 nm	90 % 0,046 AU
300 nm	98 % 0,009 AU
Microfiltered through membranes of pore diameter 0,22 µm	

Art. No.	Volume	Container
CL02181000	1 l	
CL02182500	2,5 l	

**CL0207 Chloroform, HPLC grade, stabilized with amylene (approx. 150 ppm)**

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,487 - 1,490  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 residue on evaporation . . . . . max. 0,0003 %  
 water (K.F.) . . . . . max. 0,01 %

min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 248 nm . . . . . 20 % 0,699 AU  
 253 nm . . . . . 50 % 0,301 AU  
 265 nm . . . . . 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
CL02071000	1 l	0
CL02072500	2,5 l	0

**CL0208 Chloroform, for GC residue analysis, stabilized with ethanol**

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,474 - 1,484  
 ethanol (G.C.) . . . . . max. 1 %  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,01 %

Suitable for organohalogenated pesticide and dioxins,  
 furans and PCBs residue analysis. ECD, from 1,2,4-tri-  
 chlorobenzene to decachlorobiphenyl, no peaks are  
 obtained greater than 3 pg/ml as lindane. No peaks  
 are obtained in vicinity of 2,4,5-trichlorobiphenyl.  
 Suitable for pesticide and polycyclic aromatic  
 hydrocarbons residue analysis. FID, from 1-octanol  
 to 1-tetradecanol, no peaks are obtained greater than  
 5 ng/ml as 1-tetradecanol. No peaks are obtained in  
 vicinity of pyrene.

Art. No.	Volume	Container
CL02081000	1 l	0
CL02082500	2,5 l	0

**CL0202 Chloroform, 99,9%, anhydrous (max. 0,003% H<sub>2</sub>O), stabilized with 150 ppm of amylene**

assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 1,490 - 1,493  
 colour (Hazen) . . . . . max. 10  
 free acid (as HCl) . . . . . max. 0,0001 %  
 free chlorine (as Cl) . . . . . passes test

chlorides (Cl) . . . . . max. 0,0002 %  
 aldehydes, ketones . . . . . passes test  
 amylene (G.C.) . . . . . approx. 150 ppm  
 carbon tetrachloride (G.C.) . . . . . max. 0,01 %  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,003 %

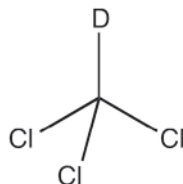
Art. No.	Volume	Container
CL02020100	100 ml	0
CL02020500	500 ml	0
CL02021000	1 l	0

**CL0219 Chloroform, 99,9%, anhydrous (max. 0,003% H<sub>2</sub>O), with molecular sieves, stabilized with 150 ppm of amylene**

assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 1,490 - 1,493  
 acidity or alkalinity . . . . . passes test  
 free chlorine (as Cl) . . . . . passes test

chlorides (Cl) . . . . . passes test  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00002 %  
 lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %

Art. No.	Volume	Container
CL02191000	1 l	0

**Chloroform-d**

- CDCl<sub>3</sub>
- M = 120,38 g/mol
- CAS [865-49-6]
- EINECS-No.: 212-742-4
- Density: 1,50 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 8,2 g/l
- Melting point: -64,1 °C
- Boiling point: 60 °C
- Vapour pressure: (20 °C) 211 hPa
- LD 50 (oral, rat): 908 mg/kg
- EC-Index-No.: 602-006-00-4

- ADR: 6.1 T1 III UN 1888
- IMDG: 6.1 III UN 1888
- IATA/ICAO: 6.1 III UN 1888
- GHS-signal word: Warning
- GHS-H sentences: H351 - H373 - H302 - H315
- GHS-P sentences: P260 - P280 - P281 - P321 - P405 - P501a
- Tariff number: 2845 90 10 00
- Applications: for nuclear magnetic resonance spectroscopy.

**CL0213 Chloroform-d, deuteration degree min. 99,8%, NMR spectroscopy grade, Spectrosol®**

deuteration degree . . . . . min. 99,8 %  
 water (K.F., H<sub>2</sub>O + D<sub>2</sub>O) . . . . . max. 0,01 %  
 performance test  
 (NMR-spectrum) . . . . . passes test

Art. No.	Volume	Container
CL02130100	100 ml	0
CL02130500	500 ml	0
CL02131000	1 l	0

**CL0215 Chloroform-d + TMS (99:1, v/v), deuteration degree min. 99,8%, NMR spectroscopy grade, Spectrosol®**

deuteration degree . . . . . min. 99,8 %  
 water (K.F., H<sub>2</sub>O + D<sub>2</sub>O) . . . . . max. 0,02 %

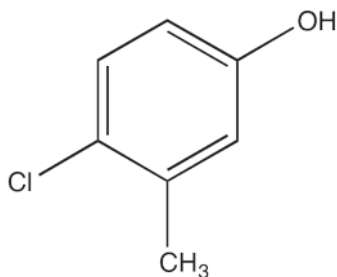
performance test  
 (NMR-spectrum) . . . . . passes test

Art. No.	Volume	Container
CL02150100	100 ml	0

# Chloro

## 4-Chloro-3-methylphenol

CL0125 4-Chloro-3-methylphenol, synthesis grade



- Synonyms: 4-Chloro-m-cresol, 2-Chloro-5-hydroxy-toluene
- $C_7H_7ClO$
- $M = 142,59 \text{ g/mol}$
- CAS [59-50-7]
- EINECS-No.: 200-431-6
- Solub. in water: (20 °C): 4 g/l
- Melting point: 63 - 65 °C
- Boiling point: 235 - 238 °C
- Flash pt. 118 °C
- Ignition temp.: 590 °C
- Vapour pressure: (20 °C) 0,08 hPa
- LD 50 (oral, rat): 1830 mg/kg
- EC-Index-No.: 604-014-00-3
- ADR: 6.1 T1 II UN 3437
- IMDG: 6.1 II UN 3437
- IATA/ICAO: 6.1 II UN 3437
- GHS-signal word: Danger

- GHS-H sentences: H318 - H400 - H302 - H312 - H317
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P310 - P321 - P501a
- Tariff number: 2908 19 00 00
- Applications: disinfectant and antiseptic.
- Appearance: White tablets

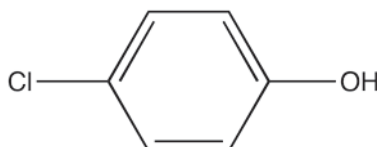
### Specifications:

assay (G.C.) ..... min. 99,5 %  
 identity (IR-spectrum) ..... passes test  
 residue on ignition ..... max. 0,02 %  
 water (K.F.) ..... max. 0,1 %

Art. No.	Volume	Container
CL01250250	250 g	☐
CL01251000	1 kg	☐

## 4-Chlorophenol

CL0160 4-Chlorophenol, synthesis grade



- Synonyms: 4-Chloro-1-hydroxybenzene
- $C_6H_5ClO$
- $M = 128,56 \text{ g/mol}$
- CAS [106-48-9]
- EINECS-No.: 203-402-6
- Solub. in water: (20 °C): 27 g/l
- Melting point: 41 - 44 °C
- Boiling point: 216 - 218 °C
- Flash pt. 121 °C
- Vapour pressure: (20 °C) 0,15 hPa
- LD 50 (oral, rat): 261 mg/kg
- EC-Index-No.: 604-008-00-0 [2]
- ADR: 6.1 T2 III UN 2020
- IMDG: 6.1 III UN 2020
- IATA/ICAO: 6.1 III UN 2020
- GHS-signal word: Warning

- GHS-H sentences: H302 - H312 - H332 - H411
- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a
- Tariff number: 2908 19 00 00
- Applications: synthesis of organic products, laboratory reagent.

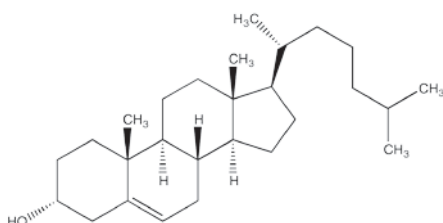
### Specifications:

assay (G.C.) ..... min. 98 %  
 identity (IR-spectrum) ..... passes test  
 residue on ignition ..... max. 0,01 %

Art. No.	Volume	Container
CL01600250	250 g	☐
CL01601000	1 kg	☐

## Cholesterol

C00180 Cholesterol, extra pure, Pharnpur®, Ph Eur, BP, NF



- Synonyms: 2-Cholesten-3β-ol
- $C_{27}H_{46}O$
- $M = 386,67 \text{ g/mol}$
- CAS [57-88-5]
- EINECS-No.: 200-353-2
- Solub. in water: (20 °C): insoluble
- Melting point: 147 - 150 °C
- Boiling point: ~ 360 °C (decomposes)
- Tariff number: 2906 13 10 00
- Applications: analytical chemistry, for pharmaceuticals synthesizing, in pharma industry.

total sterols (G.C. on dried sample) 97 - 103 %  
 identification ..... passes test  
 acidity ..... passes test  
 solubility in ethanol ..... passes test  
 specific rotation ( $[\alpha]_D^{25}$ ; c = 2, dioxane) -38 ° - -34 °  
 residue on ignition ..... max. 0,1 %  
 loss on drying (4 h, 60°C, vacuum) ..... max. 0,3 %  
 melting range ..... 147 - 150 °C  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

### Specifications:

assay (G.C., on dried sample) ..... min. 95 %

Art. No.	Volume	Container
C001800100	100 g	☐

## Chromic mixture

CR0210 Chromic mixture



- Synonyms: Chromosulfuric acid, Dichromate sulfuric acid mixture
- CAS [65272-71-1]
- Density: 1,84 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: 330 °C
- ADR: 8 C1 I UN 2240
- IMDG: 8 I UN 2240

- IATA/ICAO: 8 I UN 2240
- GHS-signal word: Danger
- GHS-H sentences: H334 - H340 - H350 - H360FD - H373 - H314 - H332 - H317 - H411
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3824 90 99 99
- Applications: for laboratory glassware cleaning.

- Appearance: Red-dark brown liquid

**Specifications:**  
 for glassware cleaning

Art. No.	Volume	Container
CR02101000	1 l	☐

## Chromium(III) chloride hexahydrate

### CR0190 Chromium(III) chloride hexahydrate, extra pure, Reag. Ph Eur

- CrCl<sub>3</sub>·6H<sub>2</sub>O
- M = 266,45 g/mol
- CAS [10060-12-5]
- EINECS-No.: 233-038-3
- Solub. in water: (20 °C): 590 g/l
- Melting point: 95 °C
- LD 50 (oral, rat): 1790 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a

- Tariff number: 2827 39 85 90
- Applications: analytical chemistry, synthesis of polymers, synthesis of organic products, for the synthesis of: chromium salts, corrosion inhibitor.

iron (Fe) . . . . .max. 0,03 %  
lead (Pb) . . . . .max. 0,005 %  
non precipitable by NH<sub>4</sub>OH (as SO<sub>4</sub>) . . . . .max. 0,2 %

#### Specifications:

assay (iodometric) . . . . .min. 97 %  
identification . . . . .passes test  
pH (5 %, H<sub>2</sub>O) . . . . .2 - 3  
sulfates (SO<sub>4</sub>) . . . . .max. 0,05 %  
copper (Cu) . . . . .max. 0,001 %

Art. No.	Volume	Container
CR01901000	1 kg	Ⓟ
CR0190005P	5 kg	Ⓟ

## Chromium(III) nitrate nonahydrate

### CR0194 Chromium(III) nitrate nonahydrate, extra pure

- Synonyms: Chromic nitrate nonahydrate
- Cr(NO<sub>3</sub>)<sub>3</sub>·9H<sub>2</sub>O
- M = 400,15 g/mol
- CAS [7789-02-8]
- EINECS-No.: 236-921-1
- Solub. in water: (20 °C): 810 g/l
- Melting point: 36 - 37 °C
- LD 50 (oral, rat): 3250 mg/l
- ADR: 5.1 O2 III UN 2720
- IMDG: 5.1 III UN 2720
- IATA/ICAO: 5.1 III UN 2720

- GHS-signal word: Danger
- GHS-H sentences: H272 - H302
- GHS-P sentences: P221 - P210 - P220 - P280 - P301 + P312 - P501a
- Tariff number: 2834 29 80 00
- Applications: for the synthesis of: catalyst (Cr); in the textile industry; corrosion inhibitor.

chlorides (Cl) . . . . .max. 0,01 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,05 %  
ammonium (NH<sub>4</sub>) . . . . .max. 0,01 %  
iron (Fe) . . . . .max. 0,05 %

#### Specifications:

assay (iodometric) . . . . .min. 97 %  
pH (5 %, H<sub>2</sub>O) . . . . .2 - 3

Art. No.	Volume	Container
CR01940500	500 g	Ⓟ
CR01941000	1 kg	Ⓟ
CR0194005P	5 kg	Ⓟ

## Chromium(VI) oxide

### AN0200 Chromium(VI) oxide, extra pure, Reag. Ph Eur

- Synonyms: Chromium trioxide, Chromic anhydride
- CrO<sub>3</sub>
- M = 99,99 g/mol
- CAS [1333-82-0]
- EINECS-No.: 215-607-8
- Solub. in water: (20 °C): soluble
- Melting point: 197 °C
- LD 50 (oral, rat): 80 mg/kg
- EC-Index-No.: 024-001-00-0
- ADR: 5.1 OTC II UN 1463
- IMDG: 5.1 II UN 1463
- IATA/ICAO: 5.1 II UN 1463

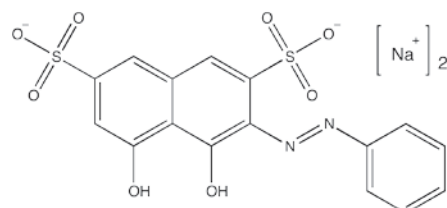
- GHS-signal word: Danger
- GHS-H sentences: H271 - H301 - H311 - H330 - H334 - H340 - H350 - H372 - H361f - H314 - H410 - H317
- GHS-P sentences: P221 - P283 - P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2819 10 00 00
- Applications: analytical chemistry, corrosion inhibitor, photography, oxidizing agent (synthesis of organic products), microscopy.

Specifications:  
assay (iodometric) . . . . .min. 99 %  
insoluble in water . . . . .max. 0,1 %  
chlorides (Cl) . . . . .max. 0,02 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,05 %  
loss on drying (105 °C) . . . . .max. 1 %

Art. No.	Volume	Container
AN02000500	500 g	Ⓟ
AN02001000	1 kg	Ⓟ

## Chromotrop 2 R, C.I. 16570

### CR0235 Chromotrop 2 R, C.I. 16570, for complexometry



- Synonyms: 2-(Phenylazo)chromotropic acid disodium salt, Acid red 29
- C<sub>16</sub>H<sub>10</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>8</sub>S<sub>2</sub>
- M = 468,39 g/mol
- CAS [4197-07-3]
- EINECS-No.: 224-085-0
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 2927 00 00 90
- Applications: indicator, for biology, complexant agent.

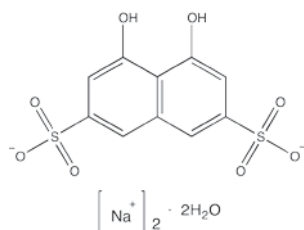
#### Specifications:

suitability for complexometry . . . . .passes test

Art. No.	Volume	Container
CR02350010	10 g	Ⓟ

## Chromotropic acid, disodium salt dihydrate

### AC0788 Chromotropic acid, disodium salt dihydrate, reagent grade, ACS



- Synonyms: 4,5-Dihydroxy-2,7-naphthalenedisulfonic acid disodium salt dihydrate
- C<sub>10</sub>H<sub>6</sub>Na<sub>2</sub>O<sub>8</sub>S<sub>2</sub>·2H<sub>2</sub>O
- M = 400,30 g/mol
- CAS [5808-22-0]
- EINECS-No.: 204-972-9
- Solub. in water: (20 °C): 170 g/l
- Tariff number: 2908 99 00 90
- Applications: analytical chemistry, manufacture of dyes, for determination of: silver, mercury, chlorates, nitrites, nitrites, chromium and titanium.

appearance of solution . . . . .passes test  
sulfates (SO<sub>4</sub>) . . . . .max. 0,002 %  
suitability for determination of formaldehyde . . . . .passes test  
suitability for determination of nitrates . . . . .passes test  
water (K.F.) . . . . .8,5 - 9,5 %

#### Specifications:

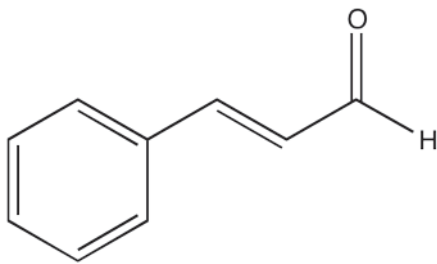
assay (acidimetric) . . . . .min. 98,5 %  
identity (IR-spectrum) . . . . .passes test

Art. No.	Volume	Container
AC07880025	25 g	Ⓟ
AC07880050	50 g	Ⓟ

# Cinnam

## Cinnamaldehyde

AL0535 Cinnamaldehyde, synthesis grade



- Synonyms: trans-Cinnamic aldehyde, trans-3-Phenyl-2-propenal
- $C_9H_8O$
- $M = 132,16 \text{ g/mol}$
- CAS [104-55-2]
- EINECS-No.: 203-213-9
- Density:  $1,05 \text{ g/cm}^3$
- Solub. in water: (20 °C):  $1,1 \text{ g/l}$
- Melting point:  $-8 \text{ °C}$
- Boiling point: (21 hPa)  $127 \text{ °C}$
- Flash pt.  $138 \text{ °C}$
- Vapour pressure: (20 °C)  $< 0,1 \text{ hPa}$
- Refraction index: (n 20 °C/D)  $1,6219$
- LD 50 (oral, rat):  $2220 \text{ mg/kg}$
- GHS-signal word: Warning
- GHS-H sentences: H312 - H315 - H317

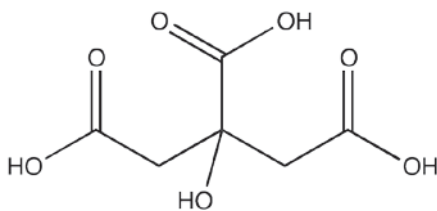
- GHS-P sentences: P261 - P280 - P321 - P322 - P362 - P501a
- Tariff number: 2912 29 00 90
- Applications: analytical chemistry, perfumery, in food industry, synthesis of organic products.

### Specifications:

assay (G.C.) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,048 - 1,051  
 residue on ignition . . . . .max. 0,01 %

Art. No.	Volume	Container
AL05350250	250 ml	
AL05351000	1 l	

## Citric acid anhydrous



- Synonyms: 2-Hydroxy-1,2,3-propanetricarboxylic acid,  $\beta$ -Hydroxy tricarboxylic acid
- $C_6H_8O_7$
- $M = 192,13 \text{ g/mol}$
- CAS [77-92-9]
- EINECS-No.: 201-069-1
- Solub. in water: (20 °C): soluble
- Melting point:  $\sim 153 \text{ °C}$  (decomposes)
- Ignition temp.:  $345 \text{ °C}$

- Vapour pressure: (20 °C)  $< 0,1 \text{ hPa}$
- LD 50 (oral, rat):  $3000 \text{ mg/kg}$
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2918 14 00 00
- Applications: acidifying agent, analytical chemistry, laboratory reagent, in food industry, antioxidant.

## AC0718 Citric acid anhydrous, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (acidimetric, on dried sample) . . . . . 99,5 - 100,5 %  
 identity (IR-spectrum) . . . . .passes test  
 appearance of solution (20 %,  $H_2O$ ) . . . . .passes test  
 oxalic acid ( $C_2H_2O_4$ ) . . . . .max. 0,036 %  
 sulfates ( $SO_4$ ) . . . . .max. 0,015 %  
 aluminium (Al) . . . . .max. 0,00002 %  
 heavy metals (as Pb) . . . . .max. 0,001 %

substances darkened by  $H_2SO_4$  . . . . .passes test  
 residue on ignition (800 °C) . . . . .max. 0,1 %  
 water (K.F.) . . . . .max. 1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC07180500	500 g	
AC07181000	1 kg	
AC0718005P	5 kg	
AC0718025P	25 kg	

## AC0724 Citric acid anhydrous, powder, Pharmpur®, Ph Eur, USP, GMP, suitable for use as excipient

assay (acidimetric, on dried sample) . . . . . 99,5 - 100,5 %  
 identification . . . . .passes test  
 appearance of solution . . . . .clear and colourless  
 clarity of solution . . . . .passes test  
 oxalic acid ( $C_2H_2O_4$ ) . . . . .max. 0,036 %  
 sulfates ( $SO_4$ ) . . . . .max. 0,015 %  
 aluminium (Al) . . . . .max. 0,00002 %

heavy metals (as Pb) . . . . .max. 0,001 %  
 readily carbonizable substances . . . . .passes test  
 residue on ignition . . . . .max. 0,1 %  
 water . . . . .max. 1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
 Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
AC07241000		
AC0724025P	25 kg	

## AC0719 Citric acid anhydrous, reagent grade, ACS, Reag. Ph Eur

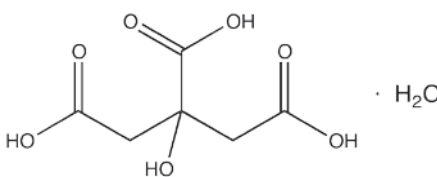
assay (acidimetric) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 insoluble in water . . . . .max. 0,005 %  
 chlorides (Cl) . . . . .max. 0,001 %  
 oxalates ( $C_2O_4$ ) . . . . .passes test  
 phosphates (as  $PO_4$ ) . . . . .max. 0,001 %  
 sulfates ( $SO_4$ ) . . . . .max. 0,002 %  
 arsenic (As) . . . . .max. 0,00001 %

calcium (Ca) . . . . .max. 0,0025 %  
 copper (Cu) . . . . .max. 0,00005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0003 %  
 lead (Pb) . . . . .max. 0,0002 %  
 magnesium (Mg) . . . . .max. 0,0005 %  
 nickel (Ni) . . . . .max. 0,0002 %  
 substances darkened by  $H_2SO_4$  . . . . .passes test

residue on ignition (as  $SO_4$ ) . . . . .max. 0,02 %

Art. No.	Volume	Container
AC07190500	500 g	
AC07191000	1 kg	
AC0719005P	5 kg	
AC0719025P	25 kg	

## Citric acid monohydrate



- Synonyms: 2-Hydroxy-1,2,3-propanetricarboxylic acid monohydrate,  $\beta$ -Hydroxytricarboxylic acid monohydrate
- $C_6H_8O_7 \cdot H_2O$
- $M = 210,14 \text{ g/mol}$
- CAS [5949-29-1]
- EINECS-No.: 201-069-1
- Solub. in water: (20 °C): very soluble in water
- Melting point:  $135 - 152 \text{ °C}$
- Boiling point:  $135 - 152 \text{ °C}$  (decomposes)

- Ignition temp.:  $345 \text{ °C}$
- Vapour pressure: (20 °C)  $< 0,1 \text{ hPa}$
- LD 50 (oral, rat):  $3000 \text{ mg/kg}$
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2918 14 00 00
- Applications: analytical chemistry, laboratory reagent, in buffer solutions.

**AC0720 Citric acid monohydrate, extra pure, Pharmpur®, Ph Eur, BP, USP**

assay (acidimetric, on dried sample) . . . . . 99,5 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution (20 %, H<sub>2</sub>O) . . . . . passes test  
 clarity of solution . . . . . passes test  
 oxalic acid (C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>) . . . . . max. 0,036 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,015 %  
 heavy metals (as Pb) . . . . . max. 0,001 %

readily carbonizable substances . . . . . passes test  
 residue on ignition (as SO<sub>3</sub>) . . . . . max. 0,05 %  
 water . . . . . 7,5 - 9,0 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC07200500	500 g	P
AC07201000	1 kg	P
AC0720005P	5 kg	P
AC0720025P	25 kg	P

**AC0723 Citric acid monohydrate, granular, Pharmpur®, Ph Eur, USP, GMP, suitable for use as excipient**

assay (acidimetric, on dried sample) . . . . . 99,5 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . passes test  
 clarity of solution . . . . . passes test  
 oxalic acid (C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>) . . . . . max. 0,036 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,015 %  
 aluminium (Al) . . . . . max. 0,00002 %

heavy metals (as Pb) . . . . . max. 0,001 %  
 readily carbonizable substances . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 water . . . . . 7,5 - 9,0 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
 Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
AC07231000	1 kg	P
AC0723025P	25 kg	P

**AC0725 Citric acid monohydrate, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (acidimetric) . . . . . 99,5 - 100,5 %  
 identity (IR-spectrum) . . . . . passes test  
 insoluble in water . . . . . max. 0,005 %  
 chlorides (Cl) . . . . . max. 0,0005 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,001 %  
 oxalates (C<sub>2</sub>O<sub>4</sub>) . . . . . passes test  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,002 %  
 tartrates (C<sub>4</sub>O<sub>6</sub>) . . . . . passes test  
 arsenic (As) . . . . . max. 0,00001 %  
 barium (Ba) . . . . . passes test

calcium (Ca) . . . . . max. 0,001 %  
 copper (Cu) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,0003 %  
 lead (Pb) . . . . . max. 0,0002 %  
 magnesium (Mg) . . . . . max. 0,001 %  
 nickel (Ni) . . . . . max. 0,0001 %  
 substances carbonizable by hot sulfuric acid . . . . . passes test  
 residue on ignition (as SO<sub>3</sub>) . . . . . max. 0,02 %

water (K.F.) . . . . . 7,5 - 8,8 %

Art. No.	Volume	Container
AC07250500	500 g	P
AC07251000	1 kg	P
AC0725005P	5 kg	P
AC0725025P	25 kg	P

**Cobalt(II) chloride hexahydrate**

- CoCl<sub>2</sub>·6H<sub>2</sub>O
- M = 237,93 g/mol
- CAS [7791-13-1]
- EINECS-No.: 231-589-4
- Solub. in water: (20 °C): 76 g/l
- Melting point: 56 °C
- LD 50 (oral, rat): 766 mg/kg

- EC-Index-No.: 027-004-00-5
- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288
- IATA/ICAO: 6.1 III UN 3288
- GHS-signal word: Danger
- GHS-H sentences: H334 - H350 - H410 - H302 - H317

- GHS-P sentences: P285 - P261 - P280 - P321 - P405 - P501a
- Tariff number: 2827 34 00 00
- Applications: analytical chemistry, laboratory reagent, invisible ink.
- Appearance: Violet solid

**C00025 Cobalt(II) chloride hexahydrate, extra pure**

assay (complexometric) . . . . . min. 98 %  
 insoluble in water . . . . . max. 0,01 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,007 %  
 nitrogen compounds (as N) . . . . . max. 0,01 %  
 copper (Cu) . . . . . max. 0,005 %  
 iron (Fe) . . . . . max. 0,005 %  
 lead (Pb) . . . . . max. 0,002 %  
 nickel (Ni) . . . . . max. 0,15 %

zinc (Zn) . . . . . max. 0,05 %  
 non precipitable with (NH<sub>4</sub>)<sub>2</sub>S (as SO<sub>4</sub>) . . . . . max. 0,3 %

Art. No.	Volume	Container
C000250100	100 g	P
C000250500	500 g	P
C000251000	1 kg	P
C00025005P	5 kg	P
C00025025P	25 kg	P

**C00027 Cobalt(II) chloride hexahydrate, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (complexometric) . . . . . 99 - 102 %  
 insoluble in water . . . . . max. 0,01 %  
 nitrates (NO<sub>3</sub>) . . . . . max. 0,01 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,005 %  
 calcium (Ca) . . . . . max. 0,005 %  
 copper (Cu) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,001 %

lead (Pb) . . . . . max. 0,0005 %  
 magnesium (Mg) . . . . . max. 0,002 %  
 manganese (Mn) . . . . . max. 0,001 %  
 nickel (Ni) . . . . . max. 0,005 %  
 potassium (K) . . . . . max. 0,005 %  
 sodium (Na) . . . . . max. 0,01 %  
 zinc (Zn) . . . . . max. 0,002 %  
 non precipitable with (NH<sub>4</sub>)<sub>2</sub>S (as SO<sub>4</sub>) . . . . . max. 0,2 %

Art. No.	Volume	Container
C000270250	250 g	P
C000271000	1 kg	P
C00027005P	5 kg	P

**Cobalt(II) nitrate hexahydrate**

- Synonyms: Nitric acid cobalt salt hexahydrate
- Co(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O
- M = 291,04 g/mol
- CAS [10026-22-9]
- EINECS-No.: 233-402-1
- Solub. in water: (20 °C): soluble
- Melting point: 57 °C

- LD 50 (oral, rat): 691 mg/kg
- ADR: 5.1 O2 II UN 1477
- IMDG: 5.1 II UN 1477
- IATA/ICAO: 5.1 II UN 1477
- GHS-signal word: Danger
- GHS-H sentences: H272 - H351 - H302 - H317

- GHS-P sentences: P221 - P210 - P220 - P321 - P405 - P501a
- Tariff number: 2834 29 20 00
- Applications: analytical chemistry, laboratory reagent, pigment, invisible ink.
- Appearance: Pink-red-brown crystalline powder

**C00045 Cobalt(II) nitrate hexahydrate, extra pure**

assay (complexometric) . . . . . 98 - 102 %  
 insoluble in water . . . . . max. 0,01 %  
 chlorides (Cl) . . . . . max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,02 %  
 copper (Cu) . . . . . max. 0,005 %  
 lead (Pb) . . . . . max. 0,005 %

iron (Fe) . . . . . max. 0,005 %  
 nickel (Ni) . . . . . max. 0,05 %  
 zinc (Zn) . . . . . max. 0,1 %

Art. No.	Volume	Container
C000450500	500 g	P
C000451000	1 kg	P
C00045005P	5 kg	P
C00045025P	25 kg	P

# Cobalt

## C00046 Cobalt(II) nitrate hexahydrate, reagent grade, ACS, Reag. Ph Eur



assay (complexometric) . . . . . 99 - 102 %	lead (Pb) . . . . . max. 0,001 %
insoluble in water . . . . . max. 0,005 %	magnesium (Mg) . . . . . max. 0,005 %
chlorides (Cl) . . . . . max. 0,002 %	manganese (Mn) . . . . . max. 0,005 %
sulfates (SO <sub>4</sub> ) . . . . . max. 0,005 %	nickel (Ni) . . . . . max. 0,001 %
ammonium (NH <sub>4</sub> ) . . . . . max. 0,05 %	potassium (K) . . . . . max. 0,01 %
calcium (Ca) . . . . . max. 0,005 %	sodium (Na) . . . . . max. 0,05 %
copper (Cu) . . . . . max. 0,001 %	zinc (Zn) . . . . . max. 0,005 %
iron (Fe) . . . . . max. 0,001 %	non precipitable with (NH <sub>4</sub> ) <sub>2</sub> S (as SO <sub>4</sub> ) . . . . . max. 0,2 %

Art. No.	Volume	Container
C000460250	250 g	
C00046005P	5 kg	

## Cobalt(II) sulfate heptahydrate

- CoSO<sub>4</sub> · 7H<sub>2</sub>O
- M = 281,10 g/mol
- CAS [10026-24-1]
- EINECS-No.: 233-334-2
- Solub. in water: (20 °C): 260 g/l
- Melting point: 98 °C
- LD 50 (oral, rat): 582 mg/kg
- EC-Index-No.: 027-005-00-0
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Danger
- GHS-H sentences: H334 - H350 - H410 - H302 - H317
- GHS-P sentences: P285 - P261 - P280 - P321 - P405 - P501a
- Tariff number: 2833 29 30 00
- Applications: analytical chemistry, laboratory reagent, in porcelain industry, pigment, manufacturing of inks.

## C00075 Cobalt(II) sulfate heptahydrate, extra pure



assay (complexometric) . . . . . min. 98 %	lead (Pb) . . . . . max. 0,005 %
pH (5 % H <sub>2</sub> O) . . . . . min. 3	zinc (Zn) . . . . . max. 0,01 %
nitrogen compounds (as N) . . . . . max. 0,01 %	
chlorides (Cl) . . . . . max. 0,005 %	
copper (Cu) . . . . . max. 0,005 %	
iron (Fe) . . . . . max. 0,005 %	

Art. No.	Volume	Container
C000750250	250 g	
C000751000	1 kg	
C00075005P	5 kg	
C00075025P	25 kg	

## C00077 Cobalt(II) sulfate heptahydrate, reagent grade



assay (complexometric) . . . . . min. 99 %	lead (Pb) . . . . . max. 0,001 %
insoluble in water . . . . . passes test	magnesium (Mg) . . . . . max. 0,005 %
chlorides (Cl) . . . . . max. 0,001 %	manganese (Mn) . . . . . max. 0,0025 %
total nitrogen (as N) . . . . . max. 0,002 %	nickel (Ni) . . . . . max. 0,025 %
calcium (Ca) . . . . . max. 0,005 %	potassium (K) . . . . . max. 0,005 %
copper (Cu) . . . . . max. 0,001 %	sodium (Na) . . . . . max. 0,01 %
iron (Fe) . . . . . max. 0,0005 %	zinc (Zn) . . . . . max. 0,005 %

Art. No.	Volume	Container
C000770250	250 g	
C000771000	1 kg	
C00077005P	5 kg	

## Cocktails for liquid scintillation

### C00135 Cocktail 22, for liquid scintillation, Normascint®



- Density: 0,92 g/cm<sup>3</sup>
- Flash pt. < 20 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H361 - H373 - H318 - H302 - H336 - H315 - H411
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: for liquid scintillation.

**Specifications:**  
Liquid scintillation solution suitable for determination of aqueous samples of medical and biochemical origin. Contains PPO, bis-MSB, emulsolv and toluene.

Art. No.	Volume	Container
C001352500	2,5 l	

### C00150 Cocktail Biogreen 3, for liquid scintillation



- Density: 0,99 g/cm<sup>3</sup>
  - Boiling point: 315 °C
  - Flash pt. 130 °C
  - Vapour pressure: (20 °C) 1,5 hPa
  - GHS-signal word: Warning
  - GHS-H sentences: H315 - H319
  - GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P362 - P332 + P313 - P337 + P313
  - Tariff number: 3822 00 00 00
  - Applications: for liquid scintillation.
- Specifications:**  
Liquid scintillation solution for counting aqueous samples. Suitable for biological samples without previous treatment including tissue solubilisers. Odourless and with low volatility.

Art. No.	Volume	Container
C00150005P	5 l	

## Collodion flexible

### C00192 Collodion flexible, pure



- CAS [9004-70-0]
- Density: 0,78 g/cm<sup>3</sup>
- Solub. in water: (20 °C): insoluble
- Boiling point: (1000 hPa) 34,6 °C
- Flash pt. -52 °C
- Ignition temp.: 170 °C
- Vapour pressure: (20 °C) 576 hPa
- ADR: 3 D I UN 2059
- IMDG: 3 I UN 2059
- IATA/ICAO: 3 I UN 2059
- GHS-signal word: Danger
- GHS-H sentences: H224 - EUH019 - H302 - H336
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3912 20 11 00
- Applications: in building materials, manufacturing of lacquers, in the textile industry.
- Appearance: Oily colourless liquid

**Specifications:**  
density (25°/4°) . . . . . 0,775 - 0,790

Art. No.	Volume	Container
C001920250	250 ml	
C001921000	1 l	



## Collodion, solution 4%

## C00190 Collodion, solution approx. 4% w/v, extra pure, Pharmapur®, USP



- Density: 0,76 - 0,80 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Boiling point: ~ 34 °C
- Flash pt. -52 °C
- Ignition temp.: 170 °C
- Vapour pressure: (20 °C) 576 hPa
- LD 50 (oral, rat): 1215 mg/kg (toxic component)
- ADR: 3 D I UN 2059
- IMDG: 3 I UN 2059
- IATA/ICAO: 3 I UN 2059
- GHS-signal word: Danger

- GHS-H sentences: H224 - EUH019 - H302 - H336
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3912 20 11 00
- Applications: photography, manufacturing of lacquers, in building materials, in pharma industry.

acidity: . . . . . passes test  
ethanol (G.C.) . . . . . 22,0 - 26,0 %  
Residual solvents are analysed according to guideline  
CPMP/ICH/283/95.

**Specifications:**

assay (w/w) . . . . . approx. 5 %  
identification . . . . . passes test  
density (25°/25°) . . . . . 0,765 - 0,775

Art. No.	Volume	Container
C001900250	250 ml	0
C001901000	1 l	0

## Complexon - magnesium, volumetric solutions

## C00221 Complexon - magnesium, solution 0,1 mol/l

- Density: 1,032 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

Suitable for complexometry.

Art. No.	Volume	Container
C002210250	250 ml	0
C002211000	1 l	0

## Copper

## C00093 Copper, powder, extra pure, Reag. Ph Eur

- Cu
- M = 63,55 g/mol
- CAS [7440-50-8]
- EINECS-No.: 231-159-6
- Solub. in water: (20 °C): insoluble
- Melting point: 1083 °C
- Boiling point: 2595 °C
- Tariff number: 7406 10 00 00

- Applications: analytical chemistry, electrical conductor, catalyst (synthesis of organic products), metal alloys.

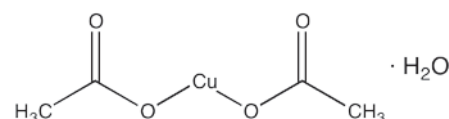
**Specifications:**

assay (iodometric) . . . . . min. 99,7 %  
insoluble in HNO<sub>3</sub> . . . . . max. 0,05 %  
antimony (Sb) . . . . . max. 0,001 %  
arsenic (As) . . . . . max. 0,0005 %  
iron (Fe) . . . . . max. 0,005 %

lead (Pb) . . . . . max. 0,05 %  
manganese (Mn) . . . . . max. 0,001 %  
nickel (Ni) . . . . . max. 0,005 %  
silver (Ag) . . . . . max. 0,002 %  
tin (Sn) . . . . . max. 0,01 %

Art. No.	Volume	Container
C000930500	500 g	0
C000931000	1 kg	0

## Copper(II) acetate monohydrate



- Synonyms: Cupric acetate
- Cu(CH<sub>3</sub>COO)<sub>2</sub>·H<sub>2</sub>O
- M = 199,65 g/mol
- CAS [6046-93-1]
- EINECS-No.: 205-553-3
- Solub. in water: (20 °C): 72 g/l
- Melting point: 115 °C
- Boiling point: 240 °C (decomposes)
- LD 50 (oral, rat): 710 mg/kg
- ADR: 8 CT2 II UN 2923

- IMDG: 8 II UN 2923
- IATA/ICAO: 8 II UN 2923
- GHS-signal word: Danger
- GHS-H sentences: H318 - H410 - H302
- GHS-P sentences: P280 - P273 - P305 + P351 + P338 - P310 - P301 + P312 - P501a
- Tariff number: 2915 29 00 90
- Applications: analytical chemistry, pigment (in porcelain industry), fungicide, spraying reagent in thin layer chromatography.

## C00092 Copper(II) acetate monohydrate, extra pure



assay (iodometric) . . . . . min. 99 %  
insoluble in water . . . . . max. 0,02 %  
pH (5 %, H<sub>2</sub>O) . . . . . 5 - 6  
chlorides (Cl) . . . . . max. 0,01 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %  
iron (Fe) . . . . . max. 0,005 %

lead (Pb) . . . . . max. 0,01 %  
nickel (Ni) . . . . . max. 0,02 %  
zinc (Zn) . . . . . max. 0,01 %

Art. No.	Volume	Container
C000920500	500 g	0
C000921000	1 kg	0
C00092005P	5 kg	0
C00092025P	25 kg	0

## C00095 Copper(II) acetate monohydrate, reagent grade, ACS, Reag. Ph Eur



assay (iodometric) . . . . . 99 - 102 %  
insoluble in diluted CH<sub>3</sub>COOH . . . . . max. 0,01 %  
chlorides (Cl) . . . . . max. 0,001 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
total nitrogen (as N) . . . . . max. 0,01 %  
calcium (Ca) . . . . . max. 0,005 %  
iron (Fe) . . . . . max. 0,002 %  
lead (Pb) . . . . . max. 0,004 %

magnesium (Mg) . . . . . max. 0,001 %  
nickel (Ni) . . . . . max. 0,002 %  
potassium (K) . . . . . max. 0,01 %  
sodium (Na) . . . . . max. 0,01 %  
zinc (Zn) . . . . . max. 0,002 %

Art. No.	Volume	Container
C000950250	250 g	0
C000950500	500 g	0
C000951000	1 kg	0
C00095005P	5 kg	0
C00095025P	25 kg	0

# Copper

## Copper(I) cyanide

### C00110 Copper(I) cyanide, extra pure



- Synonyms: Cupricin
- CuCN
- M = 89,56 g/mol
- CAS [544-92-3]
- EINECS-No.: 208-883-6
- Solub. in water: (20 °C): almost insoluble
- Melting point: 473 °C
- LD 50 (oral, rat): 1265 mg/kg
- EC-Index-No.: 006-007-00-5
- ADR: 6.1 T5 II UN 1587
- IMDG: 6.1 II UN 1587

- IATA/ICAO: 6.1 II UN 1587
- GHS-signal word: Danger
- GHS-H sentences: H300 - H310 - H330 - H410 - EUH032
- GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2837 19 00 20
- Applications: synthesis of organic products, catalyst (synthesis of polymers), in galvanotechnia.
- Appearance: Green-white to beige powder

#### Specifications:

assay (complexometric) .....min. 98 %  
 identity (IR-spectrum) .....passes test  
 insoluble in NaCN .....passes test  
 chlorides (Cl) .....max. 0,2 %  
 sulfates (SO<sub>4</sub>) .....max. 0,1 %  
 iron (Fe) .....max. 0,005 %

Art. No.	Volume	Container
C001100100	100 g	Ⓟ

## Copper(I) chloride

### C00097 Copper(I) chloride, reagent grade, ACS



- Synonyms: Copper monochloride
- CuCl
- M = 98,99 g/mol
- CAS [7758-89-6]
- EINECS-No.: 231-842-9
- Solub. in water: (25 °C): 0,06 g/l
- Melting point: 422 °C
- Boiling point: 1366 °C
- LD 50 (oral, rat): 140 mg/kg
- EC-Index-No.: 029-001-00-4
- ADR: 8 C2 III UN 2802
- IMDG: 8 III UN 2802
- IATA/ICAO: 8 III UN 2802

- GHS-signal word: Warning
- GHS-H sentences: H410 - H302
- GHS-P sentences: P273 - P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2827 39 80 10
- Applications: analytical chemistry, for the detection of: arsenic and antimony hydrides, for the absorption of carbon monoxide, laboratory reagent.
- Appearance: Light green crystalline powder

sulfates (SO<sub>4</sub>) .....max. 0,05 %  
 arsenic (As) .....max. 0,0001 %  
 calcium (Ca) .....max. 0,01 %  
 iron (Fe) .....max. 0,005 %  
 lead (Pb) .....max. 0,02 %  
 potassium (K) .....max. 0,02 %  
 sodium (Na) .....max. 0,05 %  
 non precipitable with H<sub>2</sub>S (as SO<sub>4</sub>) .....max. 0,2 %

#### Specifications:

assay (iodometric) .....min. 97 %  
 insoluble in HCl - HNO<sub>3</sub> .....max. 0,02 %

Art. No.	Volume	Container
C000970250	250 g	Ⓟ
C000970500	500 g	Ⓟ

## Copper(II) chloride dihydrate

- Synonyms: Copper dichloride dihydrate
- CuCl<sub>2</sub>·2H<sub>2</sub>O
- M = 170,48 g/mol
- CAS [10125-13-0]
- EINECS-No.: 231-210-2
- Solub. in water: (20 °C): soluble
- Melting point: ~ 100 °C

- LD 50 (oral, rat): 584 mg/kg (anhydrous substance)
- ADR: 8 C2 III UN 2802
- IMDG: 8 III UN 2802
- IATA/ICAO: 8 III UN 2802
- GHS-signal word: Warning
- GHS-H sentences: H410 - H302 - H315 - H319 - H335

- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2827 39 80 90
- Applications: catalyst, invisible ink, analytical chemistry.
- Appearance: Blue crystals

### C00100 Copper(II) chloride dihydrate, extra pure, Pharpur®, USP



assay (iodometric, on dried sample) ..... 99 - 100,5 %  
 identification .....passes test  
 insoluble in HCl .....max. 0,01 %  
 sulfates (SO<sub>4</sub>) .....max. 0,005 %  
 calcium (Ca) .....max. 0,005 %  
 iron (Fe) .....max. 0,005 %

nickel (Ni) .....max. 0,01 %  
 potassium (K) .....max. 0,01 %  
 sodium (Na) .....max. 0,02 %  
 loss on drying (105 °C, 16 h) .....20,9 - 21,4 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
C001000500	500 g	Ⓟ
C001001000	1 kg	Ⓟ
C00100005P	5 kg	Ⓟ
C00100025P	25 kg	Ⓟ

### C00112 Copper(II) chloride dihydrate, reagent grade, ACS



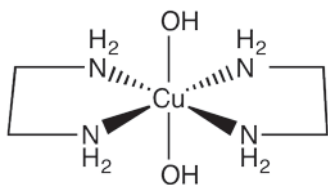
assay (iodometric) .....min. 99 %  
 insoluble matter .....max. 0,01 %  
 pH (5 %, H<sub>2</sub>O) .....3,0 - 3,8  
 nitrates (NO<sub>3</sub>) .....max. 0,015 %  
 sulfates (SO<sub>4</sub>) .....max. 0,005 %  
 total nitrogen (as N) .....max. 0,003 %  
 arsenic (As) .....max. 0,0001 %

calcium (Ca) .....max. 0,005 %  
 iron (Fe) .....max. 0,003 %  
 lead (Pb) .....max. 0,004 %  
 nickel (Ni) .....max. 0,001 %  
 potassium (K) .....max. 0,01 %  
 sodium (Na) .....max. 0,02 %

Art. No.	Volume	Container
C001120100	100 g	Ⓟ
C001121000	1 kg	Ⓟ
C00112005P	5 kg	Ⓟ

## Copper(II) ethylenediamine solution

### RE0008 Copper(II) ethylenediamine solution, for determination of viscosity in cellulose according to DIN 54270



- [Cu(OH)<sub>2</sub>(C<sub>2</sub>H<sub>4</sub>N<sub>2</sub>)<sub>2</sub>]
- CAS [14552-35-3]
- EINECS-No.: 238-597-7
- Density: 1,10 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 750 mg/kg (pure substance)
- ADR: 8 CT1 II UN 1761
- IMDG: 8 II UN 1761
- IATA/ICAO: 8 II UN 1761
- GHS-signal word: Danger
- GHS-H sentences: H334 - H314 - H302 - H317 - H411
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 2942 00 00 00
- Applications: for determination of viscosity in cellulose.
- Appearance: Dark blue liquid

#### Specifications:

copper (Cu) .....1,00 mol/l  
 relation ethylenediamine/copper .....1,96 - 2,04

Art. No.	Volume	Container
RE00081000	1 l	Ⓟ

## Copper(II) hydroxide carbonate

## C00088 Copper(II) hydroxide carbonate, extra pure

- Synonyms: Copper(II) carbonate hydroxide, Copper(II) carbonate basic
- $\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$
- M = 221,20 g/mol
- CAS [12069-69-1]
- EINECS-No.: 235-113-6
- Solub. in water: (20 °C): insoluble
- Melting point: 200 °C
- LD 50 (oral, rat): 1350 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302

- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2836 99 11 00
- Applications: in pyrotechnics, in galvanotechnia, for the synthesis of: copper salts.

## Specifications:

assay (iodometric) . . . . .	min. 95 %
chlorides (Cl) . . . . .	max. 0,01 %
sulfates ( $\text{SO}_4$ ) . . . . .	max. 0,05 %
iron (Fe) . . . . .	max. 0,02 %

lead (Pb) . . . . .	max. 0,01 %
sodium (Na) . . . . .	max. 0,5 %
nickel (Ni) . . . . .	max. 0,05 %
zinc (Zn) . . . . .	max. 0,01 %
non precipitable with $\text{H}_2\text{S}$ (as $\text{SO}_4$ ) . . . . .	max. 1 %

Art. No.	Volume	Container
C000880500	500 g	
C000881000	1 kg	

## Copper(II) nitrate trihydrate

- Synonyms: Copper dinitrate trihydrate
- $\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$
- M = 241,60 g/mol
- CAS [10031-43-3]
- EINECS-No.: 221-838-5
- Solub. in water: (20 °C): soluble
- Melting point: ~ 114 °C

- LD 50 (oral, rat): 940 mg/kg
- ADR: 5.1 O2 II UN 1477
- IMDG: 5.1 II UN 1477
- IATA/ICAO: 5.1 II UN 1477
- GHS-signal word: Danger
- GHS-H sentences: H272 - H410 - H302 - H315 - H319

- GHS-P sentences: P221 - P210 - P220 - P305 + P351 + P338 - P321 - P501a
- Tariff number: 2834 29 40 00
- Applications: analytical chemistry, in galvanotechnia, spraying reagent in thin layer chromatography, in porcelain industry (colouring agent).
- Appearance: Blue crystals

## C00098 Copper(II) nitrate trihydrate, extra pure

assay (iodometric) . . . . .	98 - 103 %
insoluble in water . . . . .	max. 0,025 %
pH (5 %, $\text{H}_2\text{O}$ ) . . . . .	min. 2,8
chlorides (Cl) . . . . .	max. 0,003 %
sulfates ( $\text{SO}_4$ ) . . . . .	max. 0,01 %
arsenic (As) . . . . .	max. 0,0001 %
calcium (Ca) . . . . .	max. 0,05 %

iron (Fe) . . . . .	max. 0,01 %
lead (Pb) . . . . .	max. 0,005 %
magnesium (Mg) . . . . .	max. 0,01 %
nickel (Ni) . . . . .	max. 0,05 %
non precipitable with $\text{H}_2\text{S}$ (as $\text{SO}_4$ ) . . . . .	max. 0,1 %

Art. No.	Volume	Container
C000980500	500 g	
C000981000	1 kg	
C00098005P	5 kg	
C00098025P	25 kg	

## C00091 Copper(II) nitrate trihydrate, reagent grade

assay (iodometric) . . . . .	min. 99,5 %
chlorides (Cl) . . . . .	max. 0,0005 %
sulfates ( $\text{SO}_4$ ) . . . . .	max. 0,005 %
calcium (Ca) . . . . .	max. 0,005 %
iron (Fe) . . . . .	max. 0,002 %
lead (Pb) . . . . .	max. 0,001 %

nickel (Ni) . . . . .	max. 0,001 %
potassium (K) . . . . .	max. 0,01 %
sodium (Na) . . . . .	max. 0,01 %
zinc (Zn) . . . . .	max. 0,001 %

Art. No.	Volume	Container
C000910500	500 g	
C000911000	1 kg	
C00091005P	5 kg	
C00091025P	25 kg	

## Copper(II) oxide

## C00099 Copper(II) oxide, extra pure

- Synonyms: Copper monoxide
- $\text{CuO}$
- M = 79,55 g/mol
- CAS [1317-38-0]
- EINECS-No.: 215-269-1
- Solub. in water: (20 °C): insoluble
- Melting point: 1336 °C
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a

- Tariff number: 2825 50 00 10
- Applications: analytical chemistry, catalyst (synthesis of organic products), in pyrotechnics, in porcelain industry, in galvanotechnia.

## Specifications:

assay (complexometric) . . . . .	min. 96 %
insoluble in HCl . . . . .	max. 0,05 %
nitrogen compounds (as N) . . . . .	max. 0,005 %
chlorides (Cl) . . . . .	max. 0,05 %
iron (Fe) . . . . .	max. 0,05 %

total sulphur (as $\text{SO}_4$ ) . . . . .	max. 0,1 %
non precipitable with $\text{H}_2\text{S}$ (as $\text{SO}_4$ ) . . . . .	max. 1 %

Art. No.	Volume	Container
C000990500	500 g	
C000991000	1 kg	
C00099005P	5 kg	
C00099025P	25 kg	

## Copper(II) sulfate anhydrous

## C00087 Copper(II) sulfate anhydrous, extra pure, Pharmpur®, Ph Eur, BP, USP

- Synonyms: Copper monosulfate anhydrous, Copper vitriol anhydrous
- $\text{CuSO}_4$
- M = 159,60 g/mol
- CAS [7758-98-7]
- EINECS-No.: 231-847-6
- Solub. in water: (20 °C): 203 g/l
- LD 50 (oral, rat): 300 mg/kg
- EC-Index-No.: 029-004-00-0
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning
- GHS-H sentences: H410 - H302 - H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2833 25 00 00
- Applications: analytical chemistry, for the detection of: water, in pharma industry.

## Specifications:

assay (iodometric, on dried sample) . . . . .	99 - 101 %
identification . . . . .	passes test
appearance of solution . . . . .	clear
chlorides (Cl) . . . . .	max. 0,015 %
calcium (Ca) . . . . .	max. 0,005 %
iron (Fe) . . . . .	max. 0,015 %

lead (Pb) . . . . .	max. 0,008 %
nickel (Ni) . . . . .	max. 0,005 %
potassium (K) . . . . .	max. 0,01 %
sodium (Na) . . . . .	max. 0,02 %
loss on drying (250 °C) . . . . .	33 - 36,5 %
Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
C000870250	250 g	
C000871000	1 kg	
C00087005P	5 kg	

# Copper

## Copper(II) sulfate pentahydrate

- Synonyms: Copper monosulfate pentahydrate, Copper vitriol pentahydrate
- $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
- M = 249,68 g/mol
- CAS [7758-99-8]
- EINECS-No.: 231-847-6
- Solub. in water: (20 °C): ~ 317 g/l
- LD 50 (oral, rat): 300 mg/kg (anhydrous substance)
- EC-Index-No.: 029-004-00-0
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning
- GHS-H sentences: H410 - H302 - H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2833 25 00 00
- Applications: analytical chemistry, nitrogen determinations.

### C00096 Copper(II) sulfate pentahydrate, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (iodometric) . . . . . 99 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,01 %  
 calcium (Ca) . . . . . max. 0,005 %  
 iron (Fe) . . . . . max. 0,003 %  
 lead (Pb) . . . . . max. 0,005 %  
 nickel (Ni) . . . . . max. 0,005 %  
 potassium (K) . . . . . max. 0,01 %  
 sodium (Na) . . . . . max. 0,02 %  
 loss on drying (250 °C) . . . . . 35,0 - 36,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
C000960500	500 g	Ⓟ
C000961000	1 kg	Ⓟ
C00096005P	5 kg	Ⓟ
C00096025P	25 kg	Ⓟ

### C00101 Copper(II) sulfate pentahydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (iodometric) . . . . . 99 - 100,5 %  
 insoluble matter . . . . . max. 0,005 %  
 pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 3,7 - 4,5  
 chlorides (Cl) . . . . . max. 0,0005 %  
 total nitrogen (as N) . . . . . max. 0,001 %  
 arsenic (As) . . . . . max. 0,00005 %  
 cadmium (Cd) . . . . . max. 0,001 %  
 calcium (Ca) . . . . . max. 0,005 %  
 cobalt (Co) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,003 %  
 lead (Pb) . . . . . max. 0,005 %  
 magnesium (Mg) . . . . . max. 0,0005 %  
 nickel (Ni) . . . . . max. 0,005 %  
 potassium (K) . . . . . max. 0,001 %  
 sodium (Na) . . . . . max. 0,005 %  
 zinc (Zn) . . . . . max. 0,03 %

Art. No.	Volume	Container
C001010500	500 g	Ⓟ
C001011000	1 kg	Ⓟ
C00101005P	5 kg	Ⓟ
C00101025P	25 kg	Ⓟ

## Copper(II) sulfate, volumetric solutions

### C00102 Copper(II) sulfate, solution 0,1 mol/l

- $\text{CuSO}_4$
- M = 159,60 g/mol
- CAS [7758-98-7]
- EINECS-No.: 231-847-6
- Density: 1,02 g/cm<sup>3</sup>
- EC-Index-No.: 029-004-00-0
- GHS-H sentences: H412
- GHS-P sentences: P273 - P501a
- Tariff number: 2833 25 00 00
- Applications: analytical chemistry, fungicide.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,024968 g  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$   
 This volumetric solution was checked by means of potentiometric methods using an EDTA disodium salt standard solution, that was also checked against Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
C001021000	1 l	Ⓟ

## Copper (II) sulfate, volumetric solutions

### C00103 Copper(II) sulfate, solution 0,02 mol/l

- $\text{CuSO}_4$
- M = 159,60 g/mol
- CAS [7758-98-7]
- EINECS-No.: 231-847-6
- Density: ~ 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 029-004-00-0
- GHS-H sentences: H412
- GHS-P sentences: P273 - P501a
- Tariff number: 2833 25 00 00
- Applications: analytical chemistry.

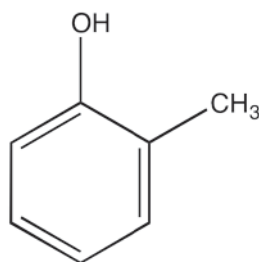
**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,004994 g  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$   
 pH . . . . . 4,2 - 4,8

This volumetric solution was checked by means of potentiometric methods using an EDTA disodium salt standard solution, that was also checked against Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
C00103010C	10 l	Ⓟ

## o-Cresol

### CR0062 o-Cresol, synthesis grade



- Synonyms: 2-Methylphenol, 2-Hydroxytoluene
- $\text{C}_7\text{H}_8\text{O}$
- M = 108,14 g/mol
- CAS [95-48-7]
- EINECS-No.: 202-423-8
- Density: 1,04 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 20 g/l
- Melting point: 29 - 31 °C
- Boiling point: 191 °C
- Flash pt. 81 °C
- Ignition temp.: 555 °C
- Vapour pressure: (20 °C) 0,35 hPa
- Refraction index: (n 20 °C/D) 1,553
- LD 50 (oral, rat): 121 mg/kg
- EC-Index-No.: 604-004-00-9 [2]
- ADR: 6.1 TC2 II UN 3455
- IMDG: 6.1 II UN 3455
- IATA/ICAO: 6.1 II UN 3455
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H314

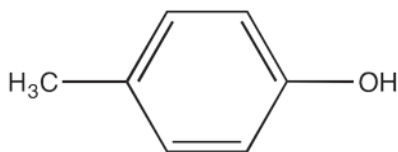
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2907 12 00 10
- Applications: synthesis of organic products, manufacturing of synthetic resins, disinfectant, fumigant, solvents.
- Appearance: Crystals

**Specifications:**  
 assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 residue on ignition . . . . . max. 0,005 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
CR00620250	250 g	Ⓟ
CR00621000	1 kg	Ⓟ

## p-Cresol

## CR0082 p-Cresol, synthesis grade



- Synonyms: 4-Methylphenol, 4-Hydroxytoluene
- $C_7H_8O$
- $M = 108,14$  g/mol
- CAS [106-44-5]
- EINECS-No.: 203-398-6
- Density: 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 20 g/l
- Melting point: 31 - 34 °C
- Boiling point: 202 °C
- Flash pt. 86 °C
- Ignition temp.: 555 °C
- Vapour pressure: (20 °C) 0,15 hPa
- LD 50 (oral, rat): 207 mg/kg
- EC-Index-No.: 604-004-00-9 [3]
- ADR: 6.1 TC2 II UN 3455
- IMDG: 6.1 II UN 3455
- IATA/ICAO: 6.1 II UN 3455
- GHS-signal word: Danger

- GHS-H sentences: H301 - H311 - H314
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2907 12 00 91
- Applications: synthesis of organic products, manufacturing of synthetic resins, disinfectant, fumigant, solvents.

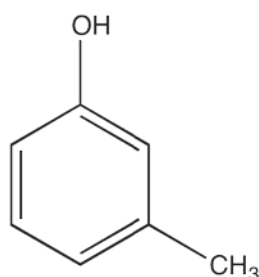
## Specifications:

assay (G.C.) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,05%

Art. No.	Volume	Container
CR00820250	250 g	0

## m-Cresol

## CR0072 m-Cresol, synthesis grade



- Synonyms: 3-Methylphenol, 3-Hydroxytoluene
- $C_7H_8O$
- $M = 108,14$  g/mol
- CAS [108-39-4]
- EINECS-No.: 203-577-9
- Density: 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 20 g/l
- Melting point: 10 - 12 °C
- Boiling point: 203 °C
- Flash pt. 86 °C
- Ignition temp.: 620 °C
- Vapour pressure: (20 °C) 0,05 hPa
- Refraction index: (n 20 °C) 1,5392
- LD 50 (oral, rat): 242 mg/kg
- EC-Index-No.: 604-004-00-9 [1]
- ADR: 6.1 TC1 II UN 2076
- IMDG: 6.1 II UN 2076
- IATA/ICAO: 6.1 II UN 2076
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H314

- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2907 12 00 99
- Applications: synthesis of organic products, manufacturing of synthetic resins, disinfectant, fumigant, solvents, photography, in explosive compositions.

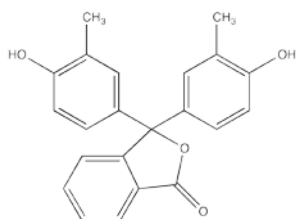
## Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,05%

Art. No.	Volume	Container
CR00720250	250 ml	0
CR00721000	1 l	0
CR00722500	2,5 l	0
CR0072005P	5 l	0

## o-Cresolphthalein

## CR0095 o-Cresolphthalein, indicator



- Synonyms: 3,3-Bis(4-hydroxy-3-methylphenyl)-1(3H)-isobenzofuranone
- $C_{22}H_{18}O_4$
- $M = 346,38$  g/mol
- CAS [596-27-0]
- EINECS-No.: 209-881-8
- Solub. in water: (20 °C): slightly soluble
- Melting point: 223 - 225 °C
- Tariff number: 2932 20 90 90
- Applications: laboratory reagent, indicator.

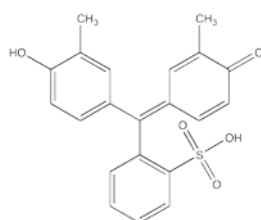
## Specifications:

pH range (colourless to red) . . . . .8,2 - 9,8  
 insoluble in  $C_2H_5OH$  . . . . .passes test  
 Absorption maximum  $\lambda$  (pH = 11,3) . . . . .565 - 569 nm  
 Absorptivity (A1%/1 cm;  $\lambda$  max.) . . . . .>1500  
 related substances (TLC) . . . . .passes test

Art. No.	Volume	Container
CR00950025	25 g	0

## Cresol red

## R00110 Cresol red, indicator



- Synonyms: o-Cresolsulfonphthalein
- $C_{21}H_{18}O_6S$
- $M = 382,44$  g/mol
- CAS [1733-12-6]
- EINECS-No.: 217-064-2
- Solub. in water: (20 °C): slightly soluble
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, indicator (to fit pH of the reaction media).

yellow . . . . .0,5 - 2,5  
 pH range (brown-yellow to red-violet) . . . . .6,5 - 8,5  
 sensitivity test . . . . .passes test  
 loss on drying (110 °C) . . . . .max. 5,0 %

## Specifications:

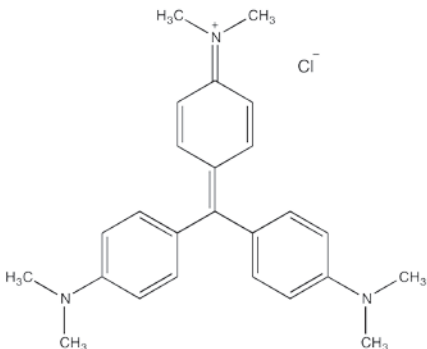
pH range (brown-orange to

Art. No.	Volume	Container
R001100005	5 g	0
R001100010	10 g	0

# Crysta

## Crystal violet, C.I. 42555

### VI0025 Crystal violet, C.I. 42555, indicator, extra pure



- Synonyms: Hexamethylenepararosaniline chloride, Hexamethyl-p-rostanilinium chloride, Methyl violet 10 B
- $C_{25}H_{30}ClN_3$
- M = 407,99 g/mol
- CAS [548-62-9]
- EINECS-No.: 208-953-6
- Solub. in water: (20 °C): 10 g/l
- Melting point: 189 - 194 °C
- LD 50 (oral, rat): 420 mg/kg
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Danger
- GHS-H sentences: H318 - H351 - H410 - H302
- GHS-P sentences: P280 - P281 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3204 13 00 90

- Applications: analytical chemistry, microscopy, indicator.

#### Specifications:

dye content  
 (spectrophotometric) . . . . .min. 85 %  
 Absorption maximum  $\lambda$  max (in  $H_2O$ ) . . . . .589 - 594 nm  
 Absorptivity (A 1%/1 cm;  
 ( $\lambda$  max; 0,002 g/l;  $H_2O$ )) . . . . . 2000 - 2450  
 loss on drying . . . . .max. 10 %  
 suitability as indicator in  
 TLC test . . . . .passes test  
 non-aqueous solvents . . . . .passes test

Art. No.	Volume	Container
VI00250025	25 g	
VI00250100	100 g	

## Crystal violet oxalate, solution according to Gram Hücker

### VI0027 Crystal violet oxalate, solution according to Gram Hücker



- Density: 0,980 g/cm<sup>3</sup>
- GHS-signal word: Warning
- GHS-H sentences: H226 - H351 - H319 - H412
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: microscopy, bacterium staining.

**Specifications:**  
 suitability for microscopy . . . . .passes test

Art. No.	Volume	Container
VI0027G100	100 ml	
VI00270500	500 ml	
VI00271000	1 l	
VI00272500	2,5 l	

## Cyanogen bromide

### BR0175 Cyanogen bromide, synthesis grade



- Synonyms: Bromine cyanide, Bromocyan
- BrCN
- M = 105,93 g/mol
- CAS [506-68-3]
- EINECS-No.: 208-051-2
- Solub. in water: (20 °C): hydrolysis reaction
- Melting point: 52 °C
- Boiling point: 61 - 62 °C
- Vapour pressure: (20 °C) 113 hPa
- ADR: 6.1 TC2 I UN 1889

- IMDG: 6.1 I UN 1889
- IATA/ICAO: Forbidden UN 1889
- GHS-signal word: Danger
- GHS-H sentences: H300 - H310 - H330 - H314
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2851 00 80 00
- Applications: synthesis of organic products, laboratory reagent.

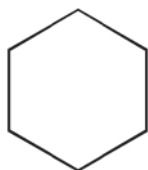
- Appearance: White crystals

#### Specifications:

assay (iodometric) . . . . .min. 98 %

Art. No.	Volume	Container
BR01750010	10 g	

## Cyclohexane



- Synonyms: Hexahydrobenzene, Hexamethylene, Naphthene
- $C_6H_{12}$
- M = 84,16 g/mol
- CAS [110-82-7]
- EINECS-No.: 203-806-2
- Density: 0,78 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 55 mg/l
- Melting point: 6 °C
- Boiling point: 80,7 - 81 °C
- Flash pt. -18 °C
- Ignition temp.: 260 °C
- Vapour pressure: (20 °C) 103 hPa
- Refraction index: (n 20 °C/D) 1,4264

- Dielectric const.: (20 °C) 2,0
- LD 50 (oral, rat): 12705 mg/kg
- EC-Index-No.: 601-017-00-1
- ADR: 3 F1 II UN 1145
- IMDG: 3 II UN 1145
- IATA/ICAO: 3 II UN 1145
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H410 - H315 - H336
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2902 11 00 00
- Applications: solvents, analytical chemistry, synthesis of organic products.

### CI0031 Cyclohexane, extra pure



assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,776 - 0,780  
 acidity . . . . .max. 0,001 meq/g  
 copper (Cu) . . . . .max. 0,00002 %  
 iron (Fe) . . . . .max. 0,00005 %  
 lead (Pb) . . . . .max. 0,00002 %  
 nickel (Ni) . . . . .max. 0,00002 %  
 cyclohexene (G.C.) . . . . .max. 0,05 %

aromatic hydrocarbons (as  $C_6H_6$ ) . . . . .max. 0,05 %  
 sulfur compounds (as S) . . . . .max. 0,005 %  
 substances darkened by  $H_2SO_4$  . . . . .passes test  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,02 %

Art. No.	Volume	Container
CI00311000	1 l	
CI00312500	2,5 l	
CI0031005L	5 l	
CI0031025A	25 l	
CI0031025S	25 l	
CI0031200L	200 l	

**CI0032 Cyclohexane, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (G.C.) . . . . . min. 99,7 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,776 - 0,780  
 density (20°/20°) . . . . . 0,779 - 0,781  
 colour (Hazen) . . . . . max. 10  
 appearance . . . . . clear  
 boiling point . . . . . 80 - 81 °C  
 melting point . . . . . min. 6,0 °C  
 acidity . . . . . max. 0,0003 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) . . . . . max. 0,05 %  
 cyclohexene (G.C.) . . . . . max. 0,05 %

ethanol (G.C.) . . . . . max. 0,01 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,01 %

Art. No.	Volume	Container
CI00321000	1 l	0
CI00322500	2,5 l	0
CI0032005L	5 l	0
CI0032025A	25 l	0

**CI0039 Cyclohexane, Multisolvant® HPLC grade ACS ISO UV-VIS**

assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,776 - 0,780  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0003 meq/g  
 melting point . . . . . min. 6,0 °C  
 aluminium (Al) . . . . . max. 0,00001 %  
 barium (Ba) . . . . . max. 0,000001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000001 %  
 calcium (Ca) . . . . . max. 0,00003 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,000002 %

lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000001 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,000001 %  
 aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) . . . . . max. 0,001 %  
 cyclohexene (G.C.) . . . . . max. 0,05 %  
 ethanol (G.C.) . . . . . max. 0,01 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0002 %  
 water (K.F.) . . . . . max. 0,01 %  
 liquid chromatography suitability  
 absorbance . . . . . passes test

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 T(%) A (AU)  
 208 nm. . . . . 20 % 0,699 AU  
 223 nm. . . . . 50 % 0,301 AU  
 232 nm. . . . . 80 % 0,097 AU  
 240 nm. . . . . 90 % 0,046 AU  
 250 nm. . . . . 98 % 0,009 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
CI00391000	1 l	0
CI00392500	2,5 l	0
CI00394000	4 l	0

**CI0035 Cyclohexane, for GC residue analysis**

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,776 - 0,780  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,01 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 3 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
CI00351000	1 l	0
CI00352500	2,5 l	0

**CI0036 Cyclohexane, GC ultra-trace analysis grade**

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,776 - 0,780  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,01 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 3 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl. Suitable for highly volatile halogenated hydrocarbons trace analysis. ECD, from dichloromethane to 1,2,4-trichlorobenzene, no peaks are obtained greater than 1 ng/ml as tetrachloromethane.

Suitable for pesticide and polycyclic aromatic hydrocarbons residue analysis. FID, from 1-undecanol to 1-tetradecanol, no peaks are obtained greater than 5 ng/ml as 1-tetradecanol. No peaks are obtained in vicinity of pyrene.

Art. No.	Volume	Container
CI00361000	1 l	0
CI00362500	2,5 l	0

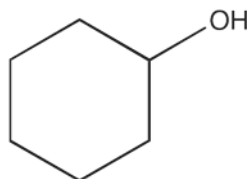
**CI0030 Cyclohexane, 99,7%, anhydrous (max. 0,005% H<sub>2</sub>O)**

assay (G.C.) . . . . . min. 99,7 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,776 - 0,780  
 appearance . . . . . clear  
 melting point . . . . . min. 6,0 °C  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0003 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %

aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) . . . . . max. 0,05 %  
 cyclohexene (G.C.) . . . . . max. 0,05 %  
 ethanol (G.C.) . . . . . max. 0,01 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
CI00300100	100 ml	0

**Cyclohexanol**

- Synonyms: Hexahydrophenol, Hydroxycyclohexane
- C<sub>6</sub>H<sub>12</sub>O
- M = 100,16 g/mol
- CAS [108-93-0]
- EINECS-No.: 203-630-6
- Density: (25 °C) 0,94 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 36 g/l
- Melting point: 25 °C
- Boiling point: 161 °C
- Flash pt. 68 °C
- Ignition temp.: 300 °C
- Vapour pressure: (20 °C) 1,3 hPa

- Refraction index: (n 20 °C/D) 1,4657
- Dielectric const.: (25 °C) 15,0
- LD 50 (oral, rat): 1400 mg/kg
- EC-Index-No.: 603-009-00-3
- GHS-signal word: Warning
- GHS-H sentences: H302 - H332 - H315 - H335
- GHS-P sentences: P261 - P280 - P321 - P362 - P405 - P501a
- Tariff number: 2906 12 00 00
- Applications: analytical chemistry, synthesis of organic products, insecticide, in the textile industry.

# Cyclohexane

## CI0040 Cyclohexanol, synthesis grade

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on evaporation . . . . .max. 0,05 %  
 water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
CI00401000	1 l	0

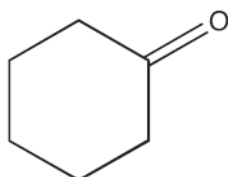
## CI0042 Cyclohexanol, reagent grade

assay (G.C.) . . . . .min.99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 free acid (as CH<sub>3</sub>COOH) . . . . .max. 0,005 %  
 iron (Fe) . . . . .max. 0,0001 %  
 heavy metals (as Pb) . . . . .max. 0,0001 %  
 residue on evaporation . . . . .max. 0,002 %  
 aldehydes . . . . .passes test  
 water (K.F.) . . . . .max. 0,05 %

Art. No.	Volume	Container
CI00421000	1 l	0

## Cyclohexanone

### CI0050 Cyclohexanone, extra pure



- Synonyms: Pimelic ketone
- C<sub>6</sub>H<sub>10</sub>O
- M = 98,15 g/mol
- CAS [108-94-1]
- EINECS-No.: 203-631-1
- Density: 0,95 g/cm<sup>3</sup>
- Solub. in water: (20 °C): ~ 80 g/l
- Melting point: -31 °C
- Boiling point: ~ 156 °C
- Flash pt. 43 °C
- Ignition temp.: 430 °C
- Vapour pressure: (20 °C) 4,0 hPa
- Dielectric const.: (25 °C) 18,3
- LD 50 (oral, rat): 1300 - 1840 mg/kg
- EC-Index-No.: 606-010-00-7
- ADR: 3 F1 III UN 1915
- IMDG: 3 III UN 1915
- IATA/ICAO: 3 III UN 1915
- GHS-signal word: Warning
- GHS-H sentences: H226 - H332

- GHS-P sentences: P210 - P241 - P261 - P280 - P303 + P361 + P353 - P501a
- Tariff number: 2914 22 00 00
- Applications: analytical chemistry, synthesis of organic products, solvents, manufacturing of synthetic resins.

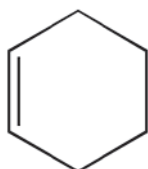
#### Specifications:

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,945 - 0,948  
 residue on ignition (as SO<sub>2</sub>) . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
CI00501000	1 l	0
CI00502500	2,5 l	0
CI0050005P	5 l	0

## Cyclohexene

### CI0060 Cyclohexene, synthesis grade, stabilized with approx. 100 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)



- Synonyms: 1,2,3,4-Tetrahydrobenzene
- C<sub>6</sub>H<sub>10</sub>
- M = 82,15 g/mol
- CAS [110-83-8]
- EINECS-No.: 203-807-8
- Density: 0,81 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,21 g/l
- Melting point: -104 °C
- Boiling point: 83 °C
- Flash pt. -16 °C
- Ignition temp.: 310 °C
- Vapour pressure: (20 °C) 90 hPa
- Refraction index: (n 20 °C/D) 1,446
- LD 50 (oral, rat): 1940 mg/kg
- ADR: 3 F1 II UN 2256
- IMDG: 3 II UN 2256
- IATA/ICAO: 3 II UN 2256
- GHS-signal word: Danger

- GHS-H sentences: H225 - H302 - H312
- GHS-P sentences: P210 - P241 - P280 - P303 + P361 + P353 - P322 - P501a
- Tariff number: 2902 19 00 00
- Applications: synthesis of organic products.
- Appearance: Colourless clear liquid

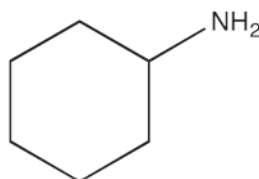
#### Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,810 - 0,811  
 water (K.F.) . . . . .max. 0,03 %

Art. No.	Volume	Container
CI00601000	1 l	0
CI0060005P	5 l	0
CI0060025P	25 l	0

## Cyclohexylamine

### CI0070 Cyclohexylamine, synthesis grade



- Synonyms: Cyclohexanamine, Aminocyclohexane
- C<sub>6</sub>H<sub>13</sub>N
- M = 99,18 g/mol
- CAS [108-91-8]
- EINECS-No.: 203-629-0
- Density: 0,87 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -18 °C
- Boiling point: 133 - 134 °C
- Flash pt. 27 °C
- Ignition temp.: 265 °C
- Vapour pressure: (20 °C) 14 hPa
- Refraction index: (n 20 °C/D) 1,4580
- LD 50 (oral, rat): 300 mg/kg
- EC-Index-No.: 612-050-00-6
- ADR: 8 CF1 II UN 2357
- IMDG: 8 II UN 2357
- IATA/ICAO: 8 II UN 2357
- GHS-signal word: Danger

- GHS-H sentences: H314 - H226 - H361f - H302 - H312
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2921 30 10 00
- Applications: analytical chemistry, synthesis of organic products, in the rubber industry, manufacture of dyes, emulsifier, insecticide.

#### Specifications:

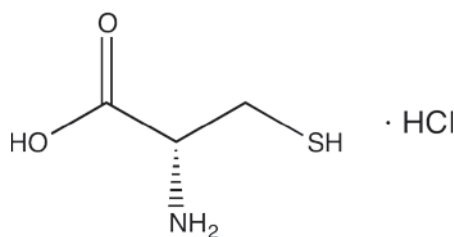
assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,866 - 0,867  
 residue on evaporation . . . . .max. 0,05 %  
 water (K.F.) . . . . .max. 0,3 %

Art. No.	Volume	Container
CI00701000	1 l	0



## L-Cysteine hydrochloride anhydrous

## CI0305 L-Cysteine hydrochloride anhydrous, extra pure



- Synonyms: Thioserine
- $C_3H_7NO_2S \cdot HCl$
- $M = 157,62 \text{ g/mol}$
- CAS [52-89-1]
- EINECS-No.: 200-157-7
- Solub. in water: (20 °C): soluble
- Melting point: 175 - 178 °C (decomposes)
- Tariff number: 2930 90 16 00
- Applications: in biochemistry, in food industry, antioxidant.

**Specifications:**

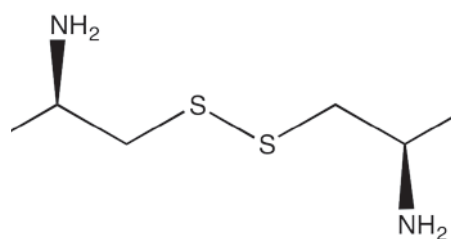
assay (argentometric) .....min. 99 %  
identity (IR-spectrum) .....passes test

specific rotation. ( $[\alpha]_{20^\circ/D}$ ,  $c=1, 0,1N \text{ HCl}$ ) ... + 4° - + 7°  
phosphates (as  $PO_4$ ) .....max. 0,005 %  
sulfates ( $SO_4$ ) .....max. 0,005 %  
ammonium ( $NH_4$ ) .....max. 0,01 %  
arsenic (As) .....max. 0,0005 %  
heavy metals (as Pb) .....max. 0,001 %  
iron (Fe) .....max. 0,0005 %  
residue on ignition .....max. 0,03 %  
loss on drying (vacuum on  $P_2O_5$ ) .....max. 2 %

Art. No.	Volume	Container
CI03050025	25 g	0
CI03050100	100 g	0

## L-Cystine

## CI0315 L-Cystine, extra pure, Pharmpur®, Ph Eur, BP



- Synonyms: Dicysteine
- $C_6H_{12}N_2O_4S_2$
- $M = 240,30 \text{ g/mol}$
- CAS [56-89-3]
- EINECS-No.: 200-296-3
- Solub. in water: (20 °C): 0,1 - 0,2 g/l
- Melting point: 261 - 262 °C (decomposes)
- LD 50 (oral, rat): 11200 mg/kg
- Tariff number: 2930 90 13 90
- Applications: in biochemistry, synthesis of organic products, in pharma industry.

**Specifications:**

assay (titration with  $HClO_4$ , on dried sample) ..... 98,5 - 101 %  
identity (IR-spectrum) .....passes test  
appearance of solution .....passes test

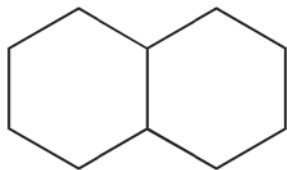
specific rotation( $[\alpha]_{20^\circ} / D$ ;  
 $c = 5, HCl \ 1N$ ) ..... - 218° - - 224°  
chlorides (Cl) .....max. 0,02 %  
sulfates ( $SO_4$ ) .....max. 0,03 %  
ammonium ( $NH_4$ ) .....max. 0,01 %  
heavy metals (as Pb) .....max. 0,002 %  
iron (Fe) .....max. 0,001 %  
ninhydrin-positive substances. ....max. 0,2 %  
residue on ignition .....max. 0,1 %  
loss on drying (105 °C) .....max. 0,5 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
CI03150100	100 g	0

# Decahy

## Decahydronaphthalene

DE0020 Decahydronaphthalene, mixture of isomers, synthesis grade



- Synonyms: Decalin
- $C_{10}H_{18}$
- $M = 138,25$  g/mol
- CAS [91-17-8]
- EINECS-No.: 202-046-9
- Density: 0,88 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: -32 °C
- Boiling point: 189 - 191 °C
- Flash pt. 57 °C
- Ignition temp.: 255 °C
- Vapour pressure: (50 °C) 100 hPa
- Refraction index: (n 20 °C/D) 1,4742
- LD 50 (oral, rat): 4170 mg/kg
- ADR: 3 F1 III UN 1147
- IMDG: 3 III UN 1147
- IATA/ICAO: 3 III UN 1147
- GHS-signal word: Danger

- GHS-H sentences: H314 - H226 - H332 - H411
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2902 19 80 00
- Applications: synthesis of organic products, analytical chemistry, manufacturing of lacquers, as gasoline additive, in lubricant compositions, solvents: Naphthalene, oils, fats, waxes and resins.

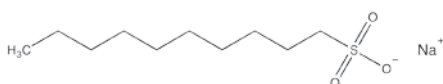
### Specifications:

assay (G.C.) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,880 - 0,885  
 residue on ignition . . . . .max. 0,01 %

Art. No.	Volume	Container
DE00201000	1 l	0

## 1-Decane sulfonic acid, sodium salt

AC0801 1-Decane sulfonic acid, sodium salt, HPLC grade



- Synonyms: Sodium 1-decylsulfonate
- $C_{10}H_{21}NaO_3S$
- $M = 244,33$  g/mol
- CAS [13419-61-9]
- EINECS-No.: 236-525-9
- Solub. in water: (20 °C): soluble
- Melting point: > 300 °C
- Tariff number: 2904 10 00 90
- Applications: analytical chemistry, chromatography, synthesis of organic products.

### Specifications:

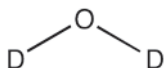
assay (acidimetric) . . . . .min. 99 %

identity (IR-spectrum) . . . . .passes test  
 insoluble matter . . . . .passes test  
 max. absorbance of an aqueous sol. 0,2 M in a 1 cm cell at wavelength: . . . . .absorbance:  
 210 nm. . . . .0,05 AU  
 220 nm. . . . .0,03 AU  
 230 nm. . . . .0,02 AU  
 260 nm. . . . .0,02 AU

Art. No.	Volume	Container
AC08010025	25 g	0
AC08010100	100 g	0

## Deuterium oxide

DE0037 Deuterium oxide, deuteration degree min. 99,8%, NMR spectroscopy grade, Spectrosol®



- Synonyms: Heavy water
- $D_2O$
- $M = 20,03$  g/mol
- CAS [7789-20-0]
- EINECS-No.: 232-148-9
- Density: 1,11 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 3,8 °C
- Boiling point: 101 °C
- Tariff number: 2845 10 00 00

- Applications: for nuclear magnetic resonance spectroscopy, for nuclear reactions.

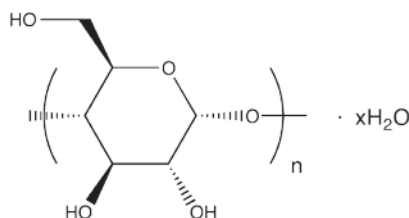
### Specifications:

deuteration degree . . . . .min. 99,8 %  
 performance test (NMR-spectrum) . . . . .passes test

Art. No.	Volume	Container
DE00370010	10 ml	0
DE00370100	100 ml	0

## Dextrin white

DE0040 Dextrin white, extra pure, Pharmpur®, Ph Eur



- $(C_6H_{10}O_5)_n \cdot xH_2O$
- CAS [9004-53-9]
- EINECS-No.: 232-675-4
- Solub. in water: (20 °C): ~ 50 g/l
- Tariff number: 3505 10 10 00
- Applications: desiccant, emulsifier, manufacture of dyes, in explosive compositions, in pharma industry.

### Specifications:

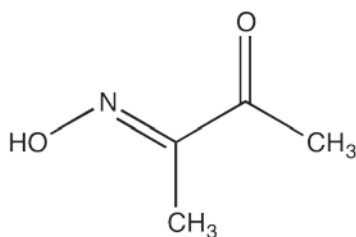
identification . . . . .passes test  
 pH (5 %,  $H_2O$ ) . . . . .2,0 - 8,0  
 chlorides (Cl) . . . . .max. 0,2 %

heavy metals (as Pb) . . . . .max. 0,002 %  
 reducing sugars (as glucose) . . . . .max. 10 %  
 residue on ignition . . . . .max. 0,5 %  
 loss on drying (135 °C) . . . . .max. 13 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
DE00401000	1 kg	0
DE0040005P	5 kg	0
DE0040025P	25 kg	0

## Diacetylmonoxime

## DI0030 Diacetylmonoxime, reagent grade



- $C_4H_7NO_2$
- $M = 101,11$  g/mol
- CAS [57-71-6]
- EINECS-No.: 200-348-5
- Solub. in water: (20 °C): soluble
- Melting point: 74 - 76 °C
- Boiling point: 185 - 186 °C
- Tariff number: 2928 00 90 90
- Applications: analytical chemistry, for spectrophotometric determinations, for gravimetric determinations (for determination of: nickel).

## Specifications:

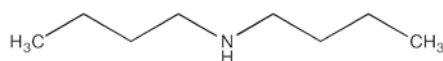
assay (DSC) .....min. 99 %

identity (IR-spectrum) .....passes test  
 insoluble in  $C_2H_5OH$  .....passes test  
 insoluble in water .....passes test  
 sulfates ( $SO_4$ ) .....max. 0,01 %  
 copper (Cu) .....max. 0,001 %  
 iron (Fe) .....max. 0,001 %  
 lead (Pb) .....max. 0,001 %  
 nickel (Ni) .....max. 0,001 %  
 sensitivity to urea .....passes test  
 residue on ignition .....max. 0,05 %

Art. No.	Volume	Container
DI00300100	100 g	0

## Dibutylamine

## DI0300 Dibutylamine, synthesis grade



- Synonyms: N-Butyl-1-butanamine
- $C_8H_{19}N$
- $M = 129,25$  g/mol
- CAS [111-92-2]
- EINECS-No.: 203-921-8
- Density: 0,76 g/cm<sup>3</sup>
- Solub. in water: (25 °C): 4,05 g/l
- Melting point: -62 °C
- Boiling point: 160 - 162 °C
- Flash pt. 39 °C
- Ignition temp.: 260 °C
- Vapour pressure: (20 °C) 2 hPa
- Refraction index: (n 20 °C/D) 1,4168
- LD 50 (oral, rat): 189 mg/kg
- EC-Index-No.: 612-049-00-0 [1]
- ADR: 8 CF1 II UN 2248
- IMDG: 8 II UN 2248
- IATA/ICAO: 8 II UN 2248
- GHS-signal word: Warning

- GHS-H sentences: H226 - H302 - H312 - H332
- GHS-P sentences: P210 - P241 - P261 - P280 - P303 + P361 + P353 - P501a
- Tariff number: 2921 19 80 90
- Applications: analytical chemistry, chromatography, synthesis of organic products.
- Appearance: Clear liquid

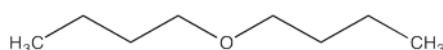
## Specifications:

assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....0,758 - 0,760  
 residue on evaporation .....max. 0,005 %  
 water (K.F.) .....max. 0,2 %

Art. No.	Volume	Container
DI03001000	1 l	0
DI03002500	2,5 l	0

## Dibutyl ether

## ET0060 Dibutyl ether, synthesis grade



- Synonyms: Butyl ether
- $C_8H_{18}O$
- $M = 130,23$  g/mol
- CAS [142-96-1]
- EINECS-No.: 205-575-3
- Density: 0,77 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,3 g/l
- Melting point: -95 °C
- Boiling point: 140 - 143 °C
- Flash pt. 25 °C
- Ignition temp.: 185 °C
- Vapour pressure: (20 °C) 6,4 hPa
- Refraction index: (n 20 °C/D) 1,3992
- Dielectric const.: (25 °C) 3,1
- LD 50 (oral, rat): 7400 mg/kg
- EC-Index-No.: 603-054-00-9
- ADR: 3 F1 III UN 1149
- IMDG: 3 III UN 1149
- IATA/ICAO: 3 III UN 1149

- GHS-signal word: Warning
- GHS-H sentences: H226 - H315 - H319 - H335 - H412
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2909 19 00 90
- Applications: synthesis of organic products, solvents. Separation and identification of: metals.

## Specifications:

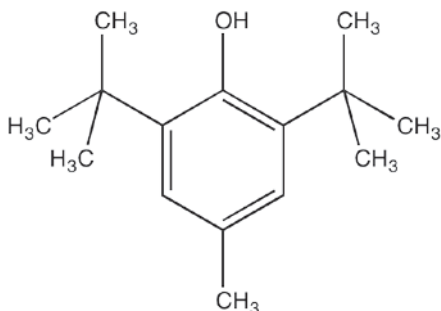
assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....0,766 - 0,769  
 peroxides (as  $H_2O_2$ ) .....max. 0,005 %  
 water (K.F.) .....max. 0,1 %

Art. No.	Volume	Container
ET00601000	1 l	0

# Ditert

## 2,6-Di-tert-butyl-4-methylphenol

DI0315 2,6-Di-tert-butyl-4-methylphenol, synthesis grade



- Synonyms: 2,6-Di-tert-butyl-p-cresol, BHT, Butylhydroxytoluene, Ionol
- $C_{15}H_{24}O$
- $M = 220,36 \text{ g/mol}$
- CAS [128-37-0]
- EINECS-No.: 204-881-4
- Solub. in water: (20 °C): < 0,01 g/l
- Melting point: 69 - 70 °C
- Boiling point: 265 °C
- Flash pt. 127 °C
- Ignition temp.: 345 °C
- Vapour pressure: (20 °C) 0,02 hPa
- LD 50 (oral, rat): 890 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302 - H315 - H319 - H413
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a

- Tariff number: 2907 19 00 90
- Applications: analytical chemistry, oxidizing agent.

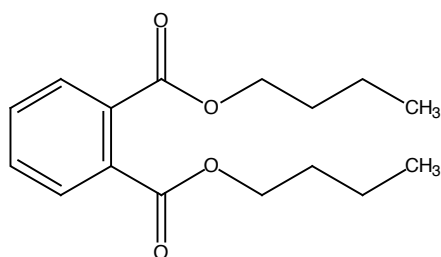
### Specifications:

assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 arsenic (As) .....max. 0,0003 %  
 heavy metals (as Pb) .....max. 0,001 %  
 iron (Fe) .....max. 0,0005 %  
 residue on ignition .....max. 0,005 %

Art. No.	Volume	Container
DI03150250	250 g	Ⓟ
DI03150500	500 g	Ⓟ
DI03151000	1 kg	Ⓟ

## Dibutyl phthalate

FT0035 Dibutyl phthalate, synthesis grade



- Synonyms: Phthalic acid dibutyl ester, DBP
- $C_{16}H_{22}O_4$
- $M = 278,35 \text{ g/mol}$
- CAS [84-74-2]
- EINECS-No.: 201-557-4
- Density: 1,05 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,4 g/l
- Boiling point: ~ 340 °C
- Flash pt. 171 °C
- Ignition temp.: ~ 370 °C
- LD 50 (oral, rat): 8000 mg/kg
- ADR: 9 M6 III UN 3082
- IMDG: 9 III UN 3082
- IATA/ICAO: 9 III UN 3082
- GHS-signal word: Danger
- GHS-H sentences: H360Df - H400

- GHS-P sentences: P281 - P273 - P308 + P313 - P391 - P405 - P501a
- Tariff number: 2917 31 00 00
- Applications: synthesis of organic products, insect repellent.
- Appearance: Colourless to yellowish liquid

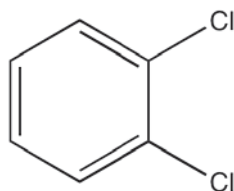
### Specifications:

assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....1,045 - 1,048  
 residue on ignition .....max. 0,01 %

Art. No.	Volume	Container
FT00351000	1 l	Ⓟ
FT0035025P	25 l	Ⓟ

## 1,2-Dichlorobenzene

DI0382 1,2-Dichlorobenzene, synthesis grade



- Synonyms: o-Chlorobenzene
- $C_6H_4Cl_2$
- $M = 147,00 \text{ g/mol}$
- CAS [95-50-1]
- EINECS-No.: 202-425-9
- Density: 1,31 g/cm<sup>3</sup>
- Solub. in water: (20 °C): ~ 0,13 g/l
- Melting point: -17 °C
- Boiling point: 180 °C
- Flash pt. 66 °C
- Ignition temp.: 640 °C
- Vapour pressure: (20 °C) ~ 1,3 hPa
- Dielectric const.: (25 °C) 9,9
- EC-Index-No.: 602-034-00-7
- ADR: 6.1 T1 III UN 1591
- IMDG: 6.1 III UN 1591
- IATA/ICAO: 6.1 III UN 1591
- GHS-signal word: Warning
- GHS-H sentences: H410 - H302 - H315 - H319 - H335

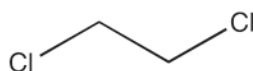
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2903 91 00 00
- Applications: solvents, degreasing agent, manufacture of dyes.

### Specifications:

assay (G.C.) .....min. 99,5 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....1,305 - 1,307  
 residue on ignition .....max. 0,05 %  
 water (K.F.) .....max. 0,05 %

Art. No.	Volume	Container
DI03821000	1 l	Ⓟ
DI03822500	2,5 l	Ⓟ
DI0382005P	5 l	Ⓟ

## 1,2-Dichloroethane



- Synonyms: Ethylene chloride, Ethylene dichloride
- $C_2H_4Cl_2$
- $M = 98,97 \text{ g/mol}$
- CAS [107-06-2]
- EINECS-No.: 203-458-1
- Density: 1,25 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,80 g/l
- Melting point: -35,5 °C
- Boiling point: 83,5 - 84,1 °C
- Flash pt. 13 °C
- Ignition temp.: 412,6 - 440 °C
- Vapour pressure: (20 °C) 87 hPa
- LD 50 (oral, rat): 670 mg/kg

- EC-Index-No.: 602-012-00-7
- ADR: 3 FT1 II UN 1184
- IMDG: 3 II UN 1184
- IATA/ICAO: 3 II UN 1184
- GHS-signal word: Danger
- GHS-H sentences: H225 - H350 - H302 - H315 - H319 - H335 -
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2903 15 00 00
- Applications: solvents, synthesis of organic products, fumigant.

## DI0407 1,2-Dichloroethane, reagent grade, ACS



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,246 - 1,255  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0003 meq/g  
 free chlorine (as Cl) . . . . . max. 0,00003 %  
 aluminium (Al) . . . . . max. 0,000005 %  
 barium (Ba) . . . . . max. 0,000005 %  
 cadmium (Cd) . . . . . max. 0,000002 %  
 calcium (Ca) . . . . . max. 0,00002 %

chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,000002 %  
 magnesium (Mg) . . . . . max. 0,000005 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 potassium (K) . . . . . max. 0,00002 %  
 sodium (Na) . . . . . max. 0,00005 %  
 strontium (Sr) . . . . . max. 0,000002 %

zinc (Zn) . . . . . max. 0,00001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,002 %  
 water (K.F.) . . . . . max. 0,01 %

Art. No.	Volume	Container
DI04071000	1 l	0
DI04072500	2,5 l	0

## DI0409 1,2-Dichloroethane, HPLC grade



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,246 - 1,255  
 appearance . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 residue on evaporation . . . . . max. 0,0002 %  
 water (K.F.) . . . . . max. 0,01 %

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 T(%) A (AU)  
 230 nm . . . . . 20 % 0,699 AU  
 235 nm . . . . . 50 % 0,301 AU  
 245 nm . . . . . 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
DI04091000	1 l	0
DI04092500	2,5 l	0

DI0411 1,2-Dichloroethane, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O)

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,246 - 1,255  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0003 meq/g  
 free chlorine (as Cl) . . . . . max. 0,00003 %  
 aluminium (Al) . . . . . max. 0,000005 %  
 barium (Ba) . . . . . max. 0,000005 %  
 cadmium (Cd) . . . . . max. 0,000002 %  
 calcium (Ca) . . . . . max. 0,00002 %

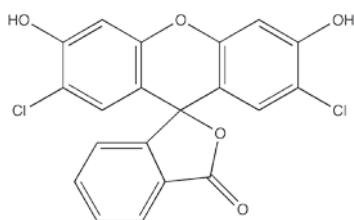
chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,000002 %  
 magnesium (Mg) . . . . . max. 0,000005 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 potassium (K) . . . . . max. 0,00002 %  
 sodium (Na) . . . . . max. 0,00005 %  
 strontium (Sr) . . . . . max. 0,000002 %

zinc (Zn) . . . . . max. 0,00001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
DI04110100	100 ml	0
DI04111000	1 l	0

## 2',7'-Dichlorofluorescein

## DI0425 2',7'-Dichlorofluorescein, indicator



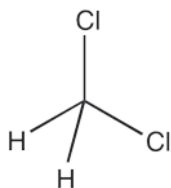
- Synonyms: 2',7'-Dichloro-3',6'-dihydroxyspiro[isobenzofuran-1(3H),9'-(9H)xanthen]-3-one
- C<sub>20</sub>H<sub>10</sub>Cl<sub>2</sub>O<sub>5</sub>
- M = 401,21 g/mol
- CAS [76-54-0]
- EINECS-No.: 200-968-6
- Solub. in water: (20 °C): slightly soluble
- Tariff number: 3204 90 00 00
- Applications: analytical chemistry, for microbiology.

## Specifications:

suitability as fluorescence indicator . . . . . passes test

Art. No.	Volume	Container
DI04250005	5 g	0

## Dichloromethane



- Synonyms: Methylene chloride, Chloromethylene
- CH<sub>2</sub>Cl<sub>2</sub>
- M = 84,93 g/mol
- CAS [75-09-2]
- EINECS-No.: 200-838-9
- Density: 1,32 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 20 g/l
- Melting point: ~ -95 °C
- Boiling point: 40 °C
- Ignition temp.: 605 °C
- Vapour pressure: (20 °C) 475 hPa
- Dielectric const.: (20 °C) 9,1

- LD 50 (oral, rat): 1600 mg/kg
- EC-Index-No.: 602-004-00-3
- ADR: 6.1 T1 III UN 1593
- IMDG: 6.1 III UN 1593
- IATA/ICAO: 6.1 III UN 1593
- GHS-signal word: Warning
- GHS-H sentences: H351
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2903 12 00 00
- Applications: solvents, analytical chemistry.

## CL0329 Dichloromethane, synthesis grade, stabilized with approx. 50 ppm of amylene



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,323 - 1,327  
 residue on evaporation . . . . . max. 0,003 %  
 water (K.F.) . . . . . max. 0,03 %

Art. No.	Volume	Container
CL03291000	1 l	0
CL03292500	2,5 l	0
CL0329005P	5 l	0
CL0329025B	25 l	0
CL0329025L	25 l	0
CL0329025P	25 l	0
CL0329200E	200 l	0

# Dichlo

## CL0331 Dichloromethane, extra pure, stabilized with approx. 50 ppm of amylene, Pharpur®, Ph Eur, BP, NF

assay (G.C.) . . . . .	min. 99,9 %	water (K.F.) . . . . .	max. 0,02 %
identification . . . . .	.passes test	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	
density (20°/20°) . . . . .	1,320 - 1,332		
density (25°/25°) . . . . .	1,318 - 1,322		
appearance . . . . .	clear and colourless		
refractive index n <sub>20</sub> /D . . . . .	1,423 - 1,425		
acidity . . . . .	.passes test		
free chlorine . . . . .	.passes test		
heavy metals (as Pb) . . . . .	max. 0,0001 %		
residue on evaporation . . . . .	max. 0,001 %		

Art. No.	Volume	Container
CL03311000	1 l	
CL03312500	2,5 l	
CL0331005L	5 l	
CL0331005P	5 l	
CL0331007E	7 l	
CL0331025A	25 l	
CL0331025B	25 l	

## CL0332 Dichloromethane, reagent grade, stabilized with ethanol

assay (G.C.) . . . . .	min. 99,5 %	cobalt (Co) . . . . .	max. 0,000002 %
identity (IR-spectrum) . . . . .	.passes test	copper (Cu) . . . . .	max. 0,000002 %
density (20°/4°) . . . . .	1,323 - 1,327	iron (Fe) . . . . .	max. 0,00001 %
appearance . . . . .	clear	lead (Pb) . . . . .	max. 0,00001 %
acidity . . . . .	max. 0,0005 meq/g	magnesium (Mg) . . . . .	max. 0,00001 %
free chlorine (as Cl) . . . . .	max. 0,00003 %	manganese (Mn) . . . . .	max. 0,000002 %
colour (Hazen) . . . . .	max. 10	nickel (Ni) . . . . .	max. 0,000002 %
aluminium (Al) . . . . .	max. 0,00005 %	tin (Sn) . . . . .	max. 0,00001 %
barium (Ba) . . . . .	max. 0,00001 %	zinc (Zn) . . . . .	max. 0,00001 %
boron (B) . . . . .	max. 0,000002 %	carbon tetrachloride (G.C.) . . . . .	max. 0,01 %
cadmium (Cd) . . . . .	max. 0,000005 %	chloroform (G.C.) . . . . .	max. 0,01 %
calcium (Ca) . . . . .	max. 0,00005 %	ethanol (G.C.) . . . . .	max. 0,3 %
chromium (Cr) . . . . .	max. 0,000002 %	methanol (G.C.) . . . . .	max. 0,01 %

formaldehyde . . . . .	max. 0,0005 %
substances darkened by H <sub>2</sub> SO <sub>4</sub> . . . . .	.passes test
residue on evaporation . . . . .	max. 0,0005 %
water (K.F.) . . . . .	max. 0,02 %

Art. No.	Volume	Container
CL03321000	1 l	
CL03322500	2,5 l	
CL0332007E	7 l	
CL0332025B	25 l	

## CL0342 Dichloromethane, reagent grade, ACS, ISO, Reag. Ph Eur, stabilized with approx. 50 ppm of amylene

assay (G.C.) . . . . .	min. 99,9 %	cobalt (Co) . . . . .	max. 0,000002 %
identity (IR-spectrum) . . . . .	.passes test	copper (Cu) . . . . .	max. 0,000002 %
density (20°/4°) . . . . .	1,323 - 1,327	iron (Fe) . . . . .	max. 0,00001 %
appearance . . . . .	clear	lead (Pb) . . . . .	max. 0,00001 %
colour (Hazen) . . . . .	max. 10	magnesium (Mg) . . . . .	max. 0,00001 %
acidity . . . . .	max. 0,0002 meq/g	manganese (Mn) . . . . .	max. 0,000002 %
alkalinity . . . . .	max. 0,0002 meq/g	molybdenum (Mo) . . . . .	max. 0,000002 %
free chlorine (as Cl) . . . . .	max. 0,00002 %	nickel (Ni) . . . . .	max. 0,000002 %
chlorides (Cl) . . . . .	max. 0,0001 %	tin (Sn) . . . . .	max. 0,00001 %
aluminium (Al) . . . . .	max. 0,00005 %	zinc (Zn) . . . . .	max. 0,00001 %
barium (Ba) . . . . .	max. 0,00001 %	carbon tetrachloride (G.C.) . . . . .	max. 0,005 %
boron (B) . . . . .	max. 0,000002 %	chloroform (G.C.) . . . . .	max. 0,005 %
cadmium (Cd) . . . . .	max. 0,000005 %	ethanol (G.C.) . . . . .	max. 0,02 %
calcium (Ca) . . . . .	max. 0,00005 %	methanol (G.C.) . . . . .	max. 0,01 %
chromium (Cr) . . . . .	max. 0,000002 %	formaldehyde . . . . .	max. 0,0005 %

residue on evaporation . . . . .	max. 0,001 %
water (K.F.) . . . . .	max. 0,01 %

Art. No.	Volume	Container
CL03421000	1 l	
CL03422500	2,5 l	
CL0342005P	5 l	
CL0342007E	7 l	
CL0342025A	25 l	
CL0342025B	25 l	
CL0342025P	25 l	

## CL0338 Dichloromethane, dried (max. 0,005% H<sub>2</sub>O), reagent grade, stabilized with approx. 50 ppm of amylene

assay (G.C.) . . . . .	min. 99,9 %	chromium (Cr) . . . . .	max. 0,000002 %
identity (IR-spectrum) . . . . .	.passes test	cobalt (Co) . . . . .	max. 0,000002 %
density (20°/4°) . . . . .	1,323 - 1,327	copper (Cu) . . . . .	max. 0,000002 %
colour (Hazen) . . . . .	max. 10	iron (Fe) . . . . .	max. 0,00001 %
acidity . . . . .	max. 0,0005 meq/g	lead (Pb) . . . . .	max. 0,00001 %
alkalinity . . . . .	max. 0,0002 meq/g	magnesium (Mg) . . . . .	max. 0,00001 %
free chlorine (as Cl) . . . . .	max. 0,00003 %	manganese (Mn) . . . . .	max. 0,000002 %
aluminium (Al) . . . . .	max. 0,00005 %	nickel (Ni) . . . . .	max. 0,000002 %
barium (Ba) . . . . .	max. 0,00001 %	tin (Sn) . . . . .	max. 0,00001 %
boron (B) . . . . .	max. 0,000002 %	zinc (Zn) . . . . .	max. 0,00001 %
cadmium (Cd) . . . . .	max. 0,000005 %	carbon tetrachloride (G.C.) . . . . .	max. 0,01 %
calcium (Ca) . . . . .	max. 0,00005 %	chloroform (G.C.) . . . . .	max. 0,01 %

ethanol (G.C.) . . . . .	max. 0,02 %
methanol (G.C.) . . . . .	max. 0,01 %
formaldehyde . . . . .	max. 0,0005 %
residue on evaporation . . . . .	max. 0,0005 %
water (K.F.) . . . . .	max. 0,005 %

Art. No.	Volume	Container
CL03381000	1 l	
CL03382500	2,5 l	

## CL0347 Dichloromethane, stabilized with approx. 50 ppm of amylene, Multisolvent® HPLC grade ACS ISO UV-VIS

assay (G.C.) . . . . .	min. 99,9 %	lead (Pb) . . . . .	max. 0,00001 %
identity (IR-spectrum) . . . . .	.passes test	magnesium (Mg) . . . . .	max. 0,00001 %
density (20°/4°) . . . . .	1,323 - 1,327	manganese (Mn) . . . . .	max. 0,000001 %
appearance . . . . .	clear	nickel (Ni) . . . . .	max. 0,000002 %
colour (Hazen) . . . . .	max. 10	tin (Sn) . . . . .	max. 0,00001 %
acidity . . . . .	max. 0,0002 meq/g	zinc (Zn) . . . . .	max. 0,000001 %
alkalinity . . . . .	max. 0,0002 meq/g	carbon tetrachloride (G.C.) . . . . .	max. 0,005 %
free chlorine (as Cl) . . . . .	max. 0,00002 %	chloroform (G.C.) . . . . .	max. 0,005 %
chlorides (Cl) . . . . .	max. 0,0001 %	ethanol (G.C.) . . . . .	max. 0,02 %
aluminium (Al) . . . . .	max. 0,00001 %	methanol (G.C.) . . . . .	max. 0,01 %
barium (Ba) . . . . .	max. 0,000001 %	formaldehyde . . . . .	max. 0,0005 %
boron (B) . . . . .	max. 0,000002 %	residue on evaporation . . . . .	max. 0,0002 %
cadmium (Cd) . . . . .	max. 0,000001 %	water (K.F.) . . . . .	max. 0,01 %
calcium (Ca) . . . . .	max. 0,00003 %	liquid chromatography suitability	
chromium (Cr) . . . . .	max. 0,000002 %	absorbance . . . . .	.passes test
cobalt (Co) . . . . .	max. 0,000002 %	min. transmission/max. absorbance in a 1,0 cm cell at wavelength:	
copper (Cu) . . . . .	max. 0,000002 %	235 nm . . . . .	20 % 0,699 AU
iron (Fe) . . . . .	max. 0,000002 %		

240 nm . . . . .	50 % 0,301 AU
245 nm . . . . .	80 % 0,097 AU
248 nm . . . . .	90 % 0,046 AU
255 nm . . . . .	98 % 0,009 AU
Microfiltered through membranes of pore diameter 0,22 µm	

Art. No.	Volume	Container
CL03471000	1 l	
CL03472500	2,5 l	
CL03474000	4 l	
CL0347007E	7 l	
CL0347020S	20 l	
CL0347025B	25 l	

## CL0335 Dichloromethane, HPLC grade, stabilized with ethanol



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,323 - 1,327  
 ethanol (G.C.) . . . . . max. 0,3 %  
 alkalinity . . . . . max. 0,0002 meq/g  
 residue on evaporation . . . . . max. 0,0003 %  
 acidity . . . . . max. 0,0002 meq/g

water (K.F.) . . . . . max. 0,01 %  
 min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 235 nm. . . . . 20 % 0,699 AU  
 238 nm. . . . . 50 % 0,301 AU  
 247 nm. . . . . 90 % 0,046 AU

Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
CL03351000	1 l	0
CL03352500	2,5 l	0

## CL0340 Dichloromethane, for GC residue analysis, stabilized with ethanol



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,323 - 1,327  
 ethanol (G.C.) . . . . . max. 0,2 %  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,02 %

Suitable for organohalogenated pesticide and dioxins,  
 furans and PCBs residue analysis. ECD, from 1,2,4-tri-  
 chlorobenzene to decachlorobiphenyl, no peaks are  
 obtained greater than 3 pg/ml as lindane. No peaks  
 are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
CL03401000	1 l	0
CL03402500	2,5 l	0
CL0340007E	7 l	0

## CL0345 Dichloromethane, for GC residue analysis, stabilized with approx. 50 ppm of amylene



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,323 - 1,327  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,02 %  
 Suitable for organohalogenated pesticide and dioxins,  
 furans and PCBs residue analysis. ECD, from 1,2,4-tri-  
 chlorobenzene to decachlorobiphenyl, no peaks are  
 obtained greater than 3 pg/ml as lindane. No peaks  
 are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Suitable for pesticide and polycyclic aromatic  
 hydrocarbons residue analysis. FID, from 1-octanol  
 to 1-tetradecanol, no peaks are obtained greater than  
 5 ng/ml as 1-tetradecanol. No peaks are obtained in  
 vicinity of pyrene.

Art. No.	Volume	Container
CL03451000	1 l	0
CL03452500	2,5 l	0

## CL0341 Dichloromethane, GC ultra-trace analysis grade, stabilized with ethanol



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,323 - 1,327  
 ethanol (G.C.) . . . . . max. 0,2 %  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,02 %

Suitable for organohalogenated pesticide and dioxins,  
 furans and PCBs residue analysis. ECD, from 1,2,4-tri-  
 chlorobenzene to decachlorobiphenyl, no peaks are  
 obtained greater than 3 pg/ml as lindane. No peaks  
 are obtained in vicinity of 2,4,5-trichlorobiphenyl.  
 Suitable for pesticide and polycyclic aromatic  
 hydrocarbons residue analysis. FID, from 1-octanol  
 to 1-tetradecanol, no peaks are obtained greater than  
 5 ng/ml as 1-tetradecanol. No peaks are obtained in  
 vicinity of pyrene.

Art. No.	Volume	Container
CL03411000	1 l	0
CL03412500	2,5 l	0

## CL0349 Dichloromethane, 99,9%, anhydrous (max. 0,003% H<sub>2</sub>O), stabilized with approx. 50 ppm of amylene



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,323 - 1,327  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 free chlorine (as Cl) . . . . . max. 0,00002 %  
 chlorides (Cl) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 molybdenum (Mo) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 carbon tetrachloride (G.C.) . . . . . max. 0,005 %

chloroform (G.C.) . . . . . max. 0,005 %  
 ethanol (G.C.) . . . . . max. 0,02 %  
 methanol (G.C.) . . . . . max. 0,01 %  
 formaldehyde . . . . . max. 0,0005 %  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,003 %

Art. No.	Volume	Container
CL03490100	100 ml	0
CL03490500	500 ml	0
CL03491000	1 l	0

## CL0350 Dichloromethane, 99,9%, anhydrous (max. 0,003% H<sub>2</sub>O), with molecular sieves



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 1,325 - 1,329  
 acidity or alkalinity . . . . . passes test  
 free chlorine . . . . . passes test

chlorides (Cl) . . . . . max. 0,0001 %  
 copper (Cu) . . . . . max. 0,00002 %  
 heavy metals (as Pb) . . . . . max. 0,0001 %  
 iron (Fe) . . . . . max. 0,00002 %  
 lead (Pb) . . . . . max. 0,00002 %

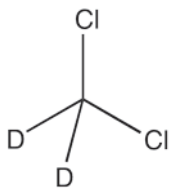
nickel (Ni) . . . . . max. 0,00002 %  
 water (K.F.) . . . . . max. 0,003 %

Art. No.	Volume	Container
CL03501000	1 l	0

# Dichlo

## Dichloromethane-d2

CL0337 Dichloromethane-d2, deuteration degree min. 99,5%, NMR spectroscopy grade, Spectrosol®



- Synonyms: Methylene chloride-d2, Dideuteromethylene chloride, Dideuterodichloromethane
- $CCl_2D_2$
- M = 86,95 g/mol
- CAS [1665-00-5]
- EINECS-No.: 216-776-0
- Density: 1,36 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 20 g/l
- Melting point: -97 °C
- Boiling point: 39 °C
- Ignition temp.: 605 °C
- Vapour pressure: (20°C) ~ 450 hPa
- LD 50 (oral, rat): 1600 mg/kg
- EC-Index-No.: 602-004-00-3
- ADR: 6.1 T1 III UN 1593
- IMDG: 6.1 III UN 1593
- IATA/ICAO: 6.1 III UN 1593
- GHS-signal word: Warning

- GHS-H sentences: H351
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2845 90 10 00
- Applications: for nuclear magnetic resonance spectroscopy.

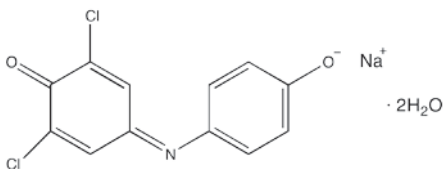
### Specifications:

deuteration degree ..... min. 99,5 %  
 water (K.F., H<sub>2</sub>O + D<sub>2</sub>O) ..... max. 0,03 %  
 performance test  
 (NMR-spectrum) ..... passes test

Art. No.	Volume	Container
CL03370010	10 ml	♻️

## 2,6-Dichlorophenol-indophenol, sodium salt dihydrate

DI0415 2,6-Dichlorophenol-indophenol, sodium salt dihydrate, indicator, reagent grade, ACS



- Synonyms: 2,6-Dichloroindophenol sodium, 2,6-Dichloro-1,4-benzoquinone-4-(4-hydroxyanil) sodium
- $C_{12}H_6Cl_2NNaO_2 \cdot 2H_2O$
- M = 326,11 g/mol
- CAS [620-45-1]
- EINECS-No.: 210-640-4
- Solub. in water: (20 °C): slightly soluble
- Tariff number: 2925 29 00 90
- Applications: analytical chemistry, indicator.

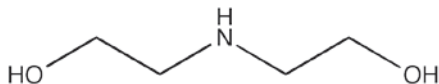
referred to dried sample) ..... min. 98 %  
 identity (IR-spectrum) ..... passes test  
 TLC test ..... passes test  
 loss on drying (120 °C) ..... max. 12 %  
 interfering dyes ..... passes test

Art. No.	Volume	Container
DI04150005	5 g	♻️
DI04150025	25 g	♻️

### Specifications:

assay (titration with HClO<sub>4</sub>,

## Diethanolamine



- Synonyms: 2,2'-Iminodiethanol, Bis(β-hydroxyethyl) amine, 2,2'-Dihydroxydiethylamine
- $C_4H_{11}NO_2$
- M = 105,14 g/mol
- CAS [111-42-2]
- EINECS-No.: 203-868-0
- Density: 1,09 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 28 °C
- Boiling point: 269 - 271 °C
- Flash pt. 177 °C
- Ignition temp.: 370 °C

- Vapour pressure: (20 °C) < 0,01 hPa
- LD 50 (oral, rat): 676 mg/kg
- EC-Index-No.: 603-071-00-1
- GHS-signal word: Danger
- GHS-H sentences: H318 - H373 - H302 - H315
- GHS-P sentences: P260 - P280 - P305 + P351 + P338 - P310 - P321 - P501a
- Tariff number: 2922 12 00 00
- Applications: analytical chemistry, in the rubber industry, cosmetics, for pharmaceuticals synthesizing, in lubricant compositions (in the textile industry), synthesis of organic products, herbicide.

DI0470 Diethanolamine, synthesis grade



assay (acidimetric) ..... min. 98 %  
 identity (IR-spectrum) ..... passes test  
 residue on ignition ..... max. 0,01 %  
 water (K.F.) ..... max. 0,5 %

Art. No.	Volume	Container
DI04701000	1 l	♻️
DI04702500	2,5 l	♻️
DI0470005P	5 l	♻️

DI0472 Diethanolamine, extra pure, Pharpur®, NF



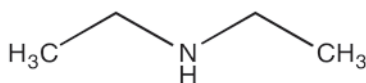
assay (acidimetric, on dried sample) ..... 98,5 - 101 %  
 identity (IR-spectrum) ..... passes test  
 refractive index n<sub>30/D</sub> ..... 1,473 - 1,476  
 triethanolamine ..... max. 1,0 %  
 water (K.F.) ..... max. 0,15 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
DI04720250	250 ml	♻️
DI04721000	1 l	♻️
DI0472005P	5 l	♻️
DI0472025P	25 l	♻️



## Diethylamine



- Synonyms: N-Ethylethanamine
- $C_4H_{11}N$
- M = 73,14 g/mol
- CAS [109-89-7]
- EINECS-No.: 203-716-3
- Density: 0,71 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -48 °C
- Boiling point: 56 °C
- Flash pt. -23 °C
- Ignition temp.: 310 °C
- Vapour pressure: (20 °C) 260 hPa
- Refraction index: (n 20 °C/D) 1,3861
- LD 50 (oral, rat): 540 mg/kg

- EC-Index-No.: 612-003-00-X
- ADR: 3 FC II UN 1154
- IMDG: 3 II UN 1154
- IATA/ICAO: 3 II UN 1154
- GHS-signal word: Danger
- GHS-H sentences: H225 - H314 - H302 - H312 - H332
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2921 19 50 00
- Applications: analytical chemistry, synthesis of organic products, in the rubber industry, for pharmaceuticals synthesizing, manufacture of dyes, resins, in the petroleum industry.

## DI0485 Diethylamine, extra pure



assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,703 - 0,705  
 chlorides (Cl) . . . . .max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
 heavy metals (as Pb) . . . . .max. 0,001 %

iron (Fe) . . . . .max. 0,001 %  
 residue on evaporation . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
DI04851000	1 l	Ø
DI04852500	2,5 l	Ø
DI0485005P	5 l	⊞
DI0485025P	25 l	⊞

## DI0486 Diethylamine, reagent grade, ACS, Reag. Ph Eur



assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,703 - 0,705  
 density (20°/20°) . . . . .0,704 - 0,706  
 colour (Hazen) . . . . .max. 20  
 boiling point . . . . .54 - 56 °C  
 chlorides (Cl) . . . . .max. 0,0005 %  
 ammonium (NH<sub>4</sub>) . . . . .max. 0,02 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %

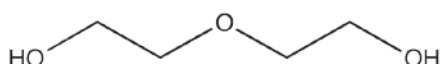
cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 heavy metals (as Pb) . . . . .max. 0,00005 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 ethanol (G.C.) . . . . .max. 0,05 %  
 monoethylamine (G.C.) . . . . .max. 0,2 %

triethylamine (G.C.) . . . . .max. 0,2 %  
 residue on evaporation . . . . .max. 0,0005 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
DI04860250	250 ml	Ø
DI04861000	1 l	Ø
DI0486025P	25 l	⊞

## Diethylene glycol

## DI0562 Diethylene glycol, synthesis grade



- Synonyms: 2,2'-Oxydiethanol, 2,2'-Dihydroxydiethyl ether, Diglycol
- $C_4H_{10}O_3$
- M = 106,12 g/mol
- CAS [111-46-6]
- EINECS-No.: 203-872-2
- Density: 1,12 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ -10 °C
- Boiling point: 244 - 252 °C
- Flash pt. > 135 °C
- Ignition temp.: ~ 230 °C
- Vapour pressure: (20 °C) 0,013 hPa
- Refraction index: (n 20 °C/D) 1,4475
- Dielectric const.: (20 °C) 32
- LD 50 (oral, rat): 12565 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302

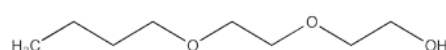
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2909 41 00 00
- Applications: analytical chemistry, synthesis of organic products, in antifreeze compositions, solvents.

## Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,115 - 1,117  
 residue on ignition . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,3 %

Art. No.	Volume	Container
DI05621000	1 l	Ø
DI05622500	2,5 l	Ø
DI0562005P	5 l	⊞

## Diethylene glycol monobutyl ether



- Synonyms: Butyl diglycol, 2-(2-Butoxyethoxy)ethanol, Butyl carbitol
- $C_8H_{18}O_3$
- M = 162,23 g/mol
- CAS [112-34-5]
- EINECS-No.: 203-961-6
- Density: 0,95 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -68 °C
- Boiling point: 226 - 234 °C
- Flash pt. 105 °C
- Ignition temp.: 225 °C

- Vapour pressure: (20 °C) 0,1 hPa
- Refraction index: (n 20 °C/D) 1,4316
- Dielectric const.: (20 °C) 9,7
- LD 50 (oral, rat): 5660 mg/kg
- EC-Index-No.: 603-096-00-8
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2909 43 00 00
- Applications: synthesis of organic products, solvents.

## DI0572 Diethylene glycol monobutyl ether, synthesis grade



assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,951 - 0,954  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . .max. 0,05 %

residue on ignition . . . . .max. 0,01 %  
 water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
DI05721000	1 l	Ø
DI0572005P	5 l	⊞

# Diethy

## DI0573 Diethylene glycol monobutyl ether, reagent grade

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,951 - 0,954  
 free acid (as CH<sub>3</sub>COOH) . . . . .max. 0,005 %  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %

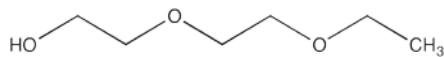
chromium (Cr) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %

aldehydes (as CH<sub>3</sub>CHO) . . . . .max. 0,001 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . .max. 0,0003 %  
 residue on ignition . . . . .max. 0,1 %  
 water (K.F.) . . . . .max. 0,03 %

Art. No.	Volume	Container
DI05731000	1 l	Ⓒ

## Diethylene glycol monoethyl ether

### DI0580 Diethylene glycol monoethyl ether, synthesis grade



- Synonyms: Ethyl diglycol, 2-(2-Ethoxyethoxy)-ethanol, Carbitol
- C<sub>8</sub>H<sub>18</sub>O<sub>3</sub>
- M = 134,18 g/mol
- CAS [111-90-0]
- EINECS-No.: 203-919-7
- Density: 0,99 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -80 °C
- Boiling point: 207 °C
- Flash pt. 94 °C
- Ignition temp.: 190 °C
- Vapour pressure: (20 °C) 0,13 hPa
- Refraction index: (n 20 °C/D) 1,427
- Dielectric const.: (20 °C) 12,6
- LD 50 (oral, rat): 8690 mg/kg

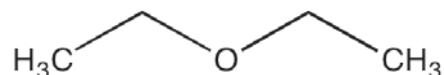
- Tariff number: 2909 44 00 90
- Applications: synthesis of organic products, solvents.

#### Specifications:

assay (G.C.) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,987 - 0,990  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . .max. 0,05 %  
 residue on ignition . . . . .max. 0,01 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
DI05801000	1 l	Ⓒ
DI0580005P	5 l	Ⓒ

## Diethyl ether



- Synonyms: Ethyl ether, Ethyl oxide, Ether
- C<sub>4</sub>H<sub>10</sub>O
- M = 74,12 g/mol
- CAS [60-29-7]
- EINECS-No.: 200-467-2
- Density: 0,71 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 69 g/l
- Melting point: -116,3 °C
- Boiling point: 34,6 °C
- Flash pt. -40 °C
- Ignition temp.: 170 °C
- Vapour pressure: (20 °C) 587 hPa
- Dielectric const.: (20 °C) 4,3
- LD 50 (oral, rat): 1215 mg/kg

- EC-Index-No.: 603-022-00-4
- ADR: 3 F1 | UN 1155
- IMDG: 3 | UN 1155
- IATA/ICAO: 3 | UN 1155
- GHS-signal word: Danger
- GHS-H sentences: H224 - EUH019 - H302 - H336 - EUH066
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2909 11 00 00
- Applications: solvents, synthesis of organic products, solvent for active principles from plant and animal tissues extractions.

### ET0077 Diethyl ether, synthesis grade, stabilized with approx. 7 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,713 - 0,715  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . .max. 0,0003 %  
 residue on evaporation . . . . .max. 0,003 %  
 water (K.F.) . . . . .max. 0,1 %


Art. No.	Volume	Container
ET00771000	1 l	Ⓒ
ET00772500	2,5 l	Ⓒ
ET0077005M	5 l	Ⓒ
ET0077007E	7 l	Ⓒ
ET0077025L	25 l	Ⓒ
ET0077025S	25 l	Ⓒ
ET0077200E	200 l	Ⓒ

### ET0078 Diethyl ether, extra pure, Ph Eur, BP, Pharmpur®, stabilized with approx. 7 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)

assay (G.C.) . . . . .min. 99,5 %  
 identification . . . . .passes test  
 density (20°/20°) . . . . .0,714 - 0,716  
 distillation range . . . . .34,0 - 35,0 °C  
 acidity . . . . .passes test  
 aldehydes . . . . .passes test  
 peroxides . . . . .passes test  
 low-boiling hydrocarbons . . . . .max. 0,2 %  
 substances with a foreign odour . . . . .passes test  
 residue on evaporation . . . . .max. 0,002 %

water (K.F.) . . . . .max. 0,05 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.








Art. No.	Volume	Container
ET00781000	1 l	Ⓒ
ET00782500	2,5 l	Ⓒ
ET0078005M	5 l	Ⓒ
ET0078007E	7 l	Ⓒ
ET0078025A	25 l	Ⓒ
ET0078025S	25 l	Ⓒ
ET0078200L	200 l	Ⓒ


**ET0079 Diethyl ether, reagent grade, ACS, ISO, Reag. Ph Eur, stabilized with approx. 7 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)**  

assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,713 - 0,715  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity. . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 chlorides (Cl) . . . . . max. 0,00003 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,00003 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %

cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 acetone (G.C.) . . . . . max. 0,005 %  
 ethanol (G.C.) . . . . . max. 0,02 %  
 methanol (G.C.) . . . . . max. 0,02 %  
 aldehydes (as HCHO) . . . . . passes test  
 carbonyl compounds (as CH<sub>3</sub>CHO) . . . . . max. 0,001 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,000015 %

sulfur compounds (as S) . . . . . max. 0,00006 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,008 %

Art. No.	Volume	Container
ET00791000	1 l	
ET00792500	2,5 l	
ET0079005M	5 l	
ET0079007E	7 l	
ET0079025A	25 l	
ET0079025S	25 l	
ET0079200L	200 l	

**ET0080 Diethyl ether, dried (max. 0,0075% H<sub>2</sub>O), reagent grade, stabilized with approx. 7 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)**  

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,713 - 0,715  
 colour (Hazen) . . . . . max. 10  
 appearance . . . . . clear  
 acidity. . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %

chromium (Cr) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 acetone (G.C.) . . . . . max. 0,005 %  
 ethanol (G.C.) . . . . . max. 0,02 %  
 methanol (G.C.) . . . . . max. 0,02 %

aldehydes (as CH<sub>3</sub>CHO) . . . . . max. 0,001 %  
 carbonyl compounds (as CO) . . . . . max. 0,001 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,00003 %  
 sulfur compounds (as S) . . . . . max. 0,00006 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,0075 %







Art. No.	Volume	Container
ET00801000	1 l	
ET00802500	2,5 l	

**ET0082 Diethyl ether, stabilized with approx. 7 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT), Multisolvant® ACS ISO**  

assay (G.C.) . . . . . min. 99,7 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,713 - 0,715  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity. . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 chlorides (Cl) . . . . . max. 0,00003 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,00003 %  
 aluminium (Al) . . . . . max. 0,00001 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000001 %  
 calcium (Ca) . . . . . max. 0,00003 %  
 chromium (Cr) . . . . . max. 0,000002 %

cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00002 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000001 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,000001 %  
 acetone (G.C.) . . . . . max. 0,005 %  
 ethanol (G.C.) . . . . . max. 0,02 %  
 methanol (G.C.) . . . . . max. 0,02 %  
 aldehydes (as HCHO) . . . . . max. 0,00007 %  
 carbonyl compounds (as CH<sub>3</sub>CHO) . . . . . max. 0,001 %  
 carbonyl compounds (as CO) . . . . . max. 0,001 %

peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,000015 %  
 sulfur compounds (as S) . . . . . max. 0,00006 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,03 %




Art. No.	Volume	Container
ET00821000	1 l	
ET00822500	2,5 l	
ET00824000	4 l	
ET0082007E	7 l	
ET0082020S	20 l	
ET0082025S	25 l	



**ET0083 Diethyl ether, 99,7%, anhydrous (max. 0,005% H<sub>2</sub>O), stabilized with approx. 7 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)**  

assay (G.C.) . . . . . min. 99,7 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,713 - 0,715  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity. . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 chlorides (Cl) . . . . . max. 0,00003 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,00003 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000001 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 acetone (G.C.) . . . . . max. 0,005 %  
 ethanol (G.C.) . . . . . max. 0,02 %

methanol (G.C.) . . . . . max. 0,02 %  
 carbonyl compounds (as CH<sub>3</sub>CHO) . . . . . max. 0,001 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,002 %  
 sulfur compounds (as S) . . . . . max. 0,00006 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
ET00830100	100 ml	
ET00830500	500 ml	
ET00831000	1 l	

**ET0074 Diethyl ether, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O), with molecular sieves, stabilized with approx. 7 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)**  

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,713 - 0,715  
 acidity. . . . . max. 0,001 meq/g  
 aldehydes . . . . . passes test  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00005 %

lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 acetone (G.C.) . . . . . max. 0,01 %  
 ethanol (G.C.) . . . . . max. 0,1 %  
 methanol (G.C.) . . . . . max. 0,05 %  
 substances with a foreign odour . . . . . passes test

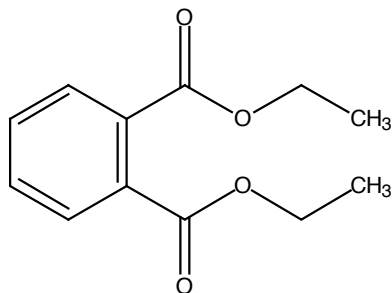
substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
ET00741000	1 l	

# Diethy

## Diethyl phthalate

### FT0045 Diethyl phthalate, synthesis grade



- Synonyms: Ethyl phthalate, DEP, Phthalic acid diethyl ester
- $C_{12}H_{14}O_4$
- $M = 222,24$  g/mol
- CAS [84-66-2]
- EINECS-No.: 201-550-6
- Density: 1,12 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: -3 °C
- Boiling point: 296 - 298 °C
- Flash pt. 156 °C
- Ignition temp.: 430 °C
- Vapour pressure: (20 °C) 0,002 hPa
- Refraction index: (n 20 °C/D) 1,5022
- LD 50 (oral, rat): 8200 mg/kg
- Tariff number: 2917 34 00 90

- Applications: analytical chemistry, perfumery, synthesis of organic products.

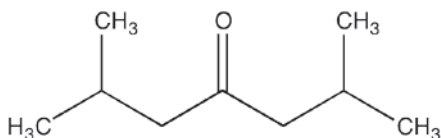
#### Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,117 - 1,119  
 free acid [as  $C_6H_4(COOH)_2$ ] . . . . .max. 0,05 %  
 residue on ignition . . . . .max. 0,01 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
FT00451000	1 l	0
FT00452500	2,5 l	0

## Diisobutyl ketone

### DI0810 Diisobutyl ketone, extra pure



- Synonyms: 2,6-Dimethyl-4-heptanone, Isobutyl ketone
- $C_9H_{18}O$
- $M = 142,24$  g/mol
- CAS [108-83-8]
- EINECS-No.: 203-620-1
- Density: 0,81 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,5 g/l
- Melting point: -46 °C
- Boiling point: 168 °C
- Flash pt. 49 °C
- Ignition temp.: 345 °C
- Vapour pressure: (20 °C) 2,6 hPa
- Refraction index: (n 20 °C/D) 1,4143
- LD 50 (oral, rat): 5750 mg/kg
- EC-Index-No.: 606-005-00-X
- ADR: 3 F1 III UN 1157
- IMDG: 3 III UN 1157
- IATA/ICAO: 3 III UN 1157
- GHS-signal word: Warning
- GHS-H sentences: H226 - H335
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P405 - P501a

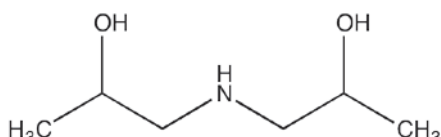
- Tariff number: 2914 19 90 90
- Applications: analytical chemistry, synthesis of organic products.

#### Specifications:

total isomer content (G.C.) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,807 - 0,811  
 free acid (as  $CH_3COOH$ ) . . . . .max. 0,01 %  
 copper (Cu) . . . . .max. 0,00002 %  
 iron (Fe) . . . . .max. 0,00005 %  
 lead (Pb) . . . . .max. 0,00002 %  
 nickel (Ni) . . . . .max. 0,00002 %  
 residue on evaporation . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
DI08101000	1 l	0
DI08102500	2,5 l	0
DI0810200L	200 l	0

## Diisopropanolamine



- Synonyms: 1,1-Iminodi-2-propanol, Bis(2-hydroxypropyl)amine
- $C_6H_{15}NO_2$
- $M = 133,19$  g/mol
- CAS [110-97-4]
- EINECS-No.: 203-820-9
- Density: 0,99 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 870 g/l
- Melting point: 36 - 42 °C
- Boiling point: 249 °C
- Flash pt. 130 °C
- Ignition temp.: 290 °C

- Vapour pressure: (20 °C) 0,02 hPa
- Refraction index: (n 16 °C/D) 1,4702
- LD 50 (oral, rat): 6720 mg/kg
- EC-Index-No.: 603-083-00-7
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2922 19 80 90
- Applications: synthesis of organic products, for pharmaceuticals synthesizing.

### DI0825 Diisopropanolamine, synthesis grade

assay (G.C.) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 insoluble in water . . . . .max. 0,01 %  
 heavy metals (as Pb) . . . . .max. 0,001 %

iron (Fe) . . . . .max. 0,001 %  
 residue on ignition . . . . .max. 0,05 %  
 water (K.F.) . . . . .max. 0,5 %

Art. No.	Volume	Container
DI08251000	1 kg	0
DI082525P	25 kg	0

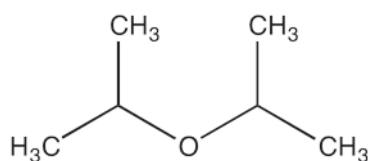
### DI0827 Diisopropanolamine, extra pure, Pharmpur®, NF

assay (acidimetric) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 insoluble in water . . . . .max. 0,01 %  
 triisopropanolamine . . . . .max. 0,5 %

water (K.F.) . . . . .max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
DI08271000	1 kg	0
DI0827025P	25 kg	0

## Diisopropyl ether



- Synonyms: Isopropyl ether, 2,2'-Oxybis[propane], 2,2-Propoxypropane
- $C_6H_{14}O$
- $M = 102,18 \text{ g/mol}$
- CAS [108-20-3]
- EINECS-No.: 203-560-6
- Density:  $0,72 \text{ g/cm}^3$
- Solub. in water: ( $20^\circ\text{C}$ ):  $12 \text{ g/l}$
- Melting point:  $-86^\circ\text{C}$
- Boiling point:  $67 - 70^\circ\text{C}$
- Flash pt.  $-28^\circ\text{C}$
- Ignition temp.:  $405^\circ\text{C}$
- Vapour pressure: ( $20^\circ\text{C}$ )  $175 \text{ hPa}$

- Dielectric const.: ( $25^\circ\text{C}$ )  $3,8$
- LD 50 (oral, rat):  $8470 \text{ mg/kg}$
- EC-Index-No.: 603-045-00-X [2]
- ADR: 3 F1 II UN 1159
- IMDG: 3 II UN 1159
- IATA/ICAO: 3 II UN 1159
- GHS-signal word: Danger
- GHS-H sentences: H225 - EUH019 - H336 - EUH066
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2909 19 00 90
- Applications: analytical chemistry, solvents.

## ET0085 Diisopropyl ether, synthesis grade, stabilized with approx. 10 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)



assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density ( $20^\circ/4^\circ$ ) . . . . . $0,722 - 0,724$   
 acidity . . . . .max.  $0,0008 \text{ meq/g}$   
 peroxides (as  $\text{H}_2\text{O}_2$ ) . . . . .max.  $0,005 \%$

residue on evaporation . . . . .max.  $0,005 \%$   
 water (K.F.) . . . . .max.  $0,1 \%$

Art. No.	Volume	Container
ET00851000	1 l	0
ET00852500	2,5 l	0

## ET0086 Diisopropyl ether, extra pure, stabilized with approx. 10 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)



assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density ( $20^\circ/4^\circ$ ) . . . . . $0,722 - 0,724$   
 acidity . . . . .max.  $0,0008 \text{ meq/g}$   
 copper (Cu) . . . . .max.  $0,00002 \%$   
 iron (Fe) . . . . .max.  $0,00005 \%$

lead (Pb) . . . . .max.  $0,00002 \%$   
 nickel (Ni) . . . . .max.  $0,00002 \%$   
 acetone (G.C.) . . . . .max.  $0,1 \%$   
 2-propanol (G.C.) . . . . .max.  $0,5 \%$   
 peroxides (as  $\text{H}_2\text{O}_2$ ) . . . . .max.  $0,005 \%$   
 substances darkened by  $\text{H}_2\text{SO}_4$  . . . . .passes test

residue on evaporation . . . . .max.  $0,005 \%$   
 water (K.F.) . . . . .max.  $0,05 \%$

Art. No.	Volume	Container
ET00861000	1 l	0

## ET0087 Diisopropyl ether, reagent grade, ACS, stabilized with approx. 50 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)



assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density ( $20^\circ/4^\circ$ ) . . . . . $0,722 - 0,724$   
 appearance . . . . .clear  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max.  $0,0005 \text{ meq/g}$   
 alkalinity . . . . .max.  $0,0002 \text{ meq/g}$   
 aluminium (Al) . . . . .max.  $0,00005 \%$   
 barium (Ba) . . . . .max.  $0,00001 \%$   
 boron (B) . . . . .max.  $0,000002 \%$   
 cadmium (Cd) . . . . .max.  $0,000005 \%$

calcium (Ca) . . . . .max.  $0,00005 \%$   
 chromium (Cr) . . . . .max.  $0,000002 \%$   
 cobalt (Co) . . . . .max.  $0,000002 \%$   
 copper (Cu) . . . . .max.  $0,000002 \%$   
 iron (Fe) . . . . .max.  $0,00001 \%$   
 lead (Pb) . . . . .max.  $0,00001 \%$   
 lithium (Li) . . . . .max.  $0,00001 \%$   
 magnesium (Mg) . . . . .max.  $0,00001 \%$   
 manganese (Mn) . . . . .max.  $0,000002 \%$   
 nickel (Ni) . . . . .max.  $0,000002 \%$   
 tin (Sn) . . . . .max.  $0,00001 \%$

zinc (Zn) . . . . .max.  $0,00001 \%$   
 peroxides (as  $\text{C}_6\text{H}_{10}\text{O}_2$ ) . . . . .max.  $0,001 \%$   
 residue on evaporation . . . . .max.  $0,005 \%$   
 water (K.F.) . . . . .max.  $0,05 \%$

Art. No.	Volume	Container
ET00871000	1 l	0
ET00872500	2,5 l	0
ET0087025A	25 l	0

ET0089 Diisopropyl ether, 99,5%, anhydrous (max. 0,005%  $\text{H}_2\text{O}$ ), stabilized with approx. 10 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density ( $20^\circ/4^\circ$ ) . . . . . $0,722 - 0,724$   
 appearance . . . . .clear  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max.  $0,0005 \text{ meq/g}$   
 alkalinity . . . . .max.  $0,0002 \text{ meq/g}$   
 aluminium (Al) . . . . .max.  $0,00005 \%$   
 barium (Ba) . . . . .max.  $0,00001 \%$   
 boron (B) . . . . .max.  $0,000002 \%$   
 cadmium (Cd) . . . . .max.  $0,000005 \%$

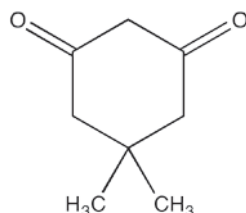
calcium (Ca) . . . . .max.  $0,00005 \%$   
 chromium (Cr) . . . . .max.  $0,000002 \%$   
 cobalt (Co) . . . . .max.  $0,000002 \%$   
 copper (Cu) . . . . .max.  $0,000002 \%$   
 iron (Fe) . . . . .max.  $0,00001 \%$   
 lead (Pb) . . . . .max.  $0,00001 \%$   
 lithium (Li) . . . . .max.  $0,00001 \%$   
 magnesium (Mg) . . . . .max.  $0,00001 \%$   
 manganese (Mn) . . . . .max.  $0,000002 \%$   
 nickel (Ni) . . . . .max.  $0,000002 \%$   
 tin (Sn) . . . . .max.  $0,00001 \%$

zinc (Zn) . . . . .max.  $0,00001 \%$   
 peroxides (as  $\text{H}_2\text{O}_2$ ) . . . . .max.  $0,0005 \%$   
 residue on evaporation . . . . .max.  $0,005 \%$   
 water (K.F.) . . . . .max.  $0,005 \%$

Art. No.	Volume	Container
ET00890100	100 ml	0
ET00890500	500 ml	0
ET00891000	1 l	0

## Dimedone

## DI0840 Dimedone, reagent grade (reagent for aldehydes)



- Synonyms: 5,5-Dimethyl-1,3-cyclohexanedione, 5,5-Dimethylidihydroresorcinol, 5,5-Dimethyl-1,3-dioxocyclohexane, Methone
- $C_8H_{12}O_2$
- $M = 140,18 \text{ g/mol}$
- CAS [126-81-8]
- EINECS-No.: 204-804-4
- Solub. in water: ( $25^\circ\text{C}$ ):  $4,01 \text{ g/l}$
- Melting point:  $148 - 150^\circ\text{C}$  (decomposes)
- Tariff number: 2914 29 00 90
- Applications: Separation and identification of aldehydes; synthesis of organic products, analytical chemistry.

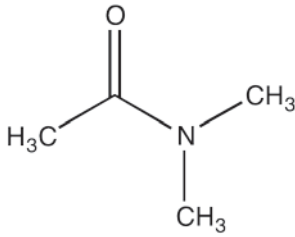
## Specifications:

assay (acidimetric, on dried sample) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 insoluble in  $\text{C}_2\text{H}_5\text{OH}$  . . . . .passes test  
 residue on ignition . . . . .max.  $0,1 \%$   
 suitability for determination of formaldehyde . . . . .passes test  
 loss on drying . . . . .max.  $1 \%$

Art. No.	Volume	Container
DI08400025	25 g	0

# Dimeth

## N,N-Dimethylacetamide



- Synonyms: Acetic acid dimethylamide
- $C_4H_9NO$
- $M = 87,12 \text{ g/mol}$
- CAS [127-19-5]
- EINECS-No.: 204-826-4
- Density:  $0,94 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point:  $-20 \text{ °C}$
- Boiling point:  $165 - 166 \text{ °C}$
- Flash pt.  $70 \text{ °C}$
- Ignition temp.:  $320 \text{ °C}$
- Vapour pressure: (20 °C)  $1,76 \text{ hPa}$

- Refraction index: (n 20 °C/D)  $1,4230$
- Dielectric const.: (25 °C)  $37,8$
- LD 50 (oral, rat):  $4300 \text{ mg/kg}$
- EC-Index-No.: 616-011-00-4
- GHS-signal word: Danger
- GHS-H sentences: H360D - H312 - H332
- GHS-P sentences: P261 - P280 - P281 - P322 - P405 - P501a
- Tariff number: 2924 19 00 90
- Applications: laboratory reagent, solvents (synthesis of organic products).

### DI0855 N,N-Dimethylacetamide, synthesis grade

assay (G.C.)	min. 99,5 %
identity (IR-spectrum)	passes test
density (20°/4°)	0,940 - 0,942
residue on evaporation	max. 0,01 %
water (K.F.)	max. 0,2 %

Art. No.	Volume	Container
DI08551000	1 l	
DI08552500	2,5 l	
DI0855005P	5 l	
DI0855200L	200 l	

### DI0856 N,N-Dimethylacetamide, reagent grade

assay (G.C.)	min. 99,5 %
identity (IR-spectrum)	passes test
density (20°/4°)	0,940 - 0,942
acidity	max. 0,0005 meq/g
pH (20 %, H <sub>2</sub> O)	4,0 - 7,0
chlorides (Cl)	max. 0,001 %
sulfates (SO <sub>4</sub> )	max. 0,001 %
cadmium (Cd)	max. 0,000005 %

calcium (Ca)	max. 0,00005 %
chromium (Cr)	max. 0,00002 %
cobalt (Co)	max. 0,00002 %
copper (Cu)	max. 0,00002 %
heavy metals (as Pb)	max. 0,00005 %
iron (Fe)	max. 0,00001 %
lead (Pb)	max. 0,00001 %
magnesium (Mg)	max. 0,00001 %

manganese (Mn)	max. 0,000002 %
nickel (Ni)	max. 0,000002 %
zinc (Zn)	max. 0,00001 %
residue on evaporation	max. 0,0005 %
water (K.F.)	max. 0,05 %

Art. No.	Volume	Container
DI08561000	1 l	

### DI0860 N,N-Dimethylacetamide, HPLC grade

assay (G.C.)	min. 99,8 %
identity (IR-spectrum)	passes test
density (20°/4°)	0,940 - 0,942
acidity	max. 0,0005 meq/g
alkalinity	max. 0,003 meq/g
residue on evaporation	max. 0,0002 %
water (K.F.)	max. 0,05 %

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:	T(%)	A (AU)
275 nm.	20 %	0,699 AU
285 nm.	50 %	0,301 AU
310 nm.	90 %	0,046 AU
Microfiltered through membranes of pore diameter 0,22 µm		

Art. No.	Volume	Container
DI08601000	1 l	
DI08602500	2,5 l	

### DI0862 N,N-Dimethylacetamide, GC head space grade

assay (G.C.)	min. 99,99 %
refractive index n <sub>20</sub> /D	1,438 - 1,439
water (K.F.)	max. 0,03 %
Packed under inert gas. Suitable for residual solvents analysis. Residual solvents are analysed according to guideline CPMP/ICH/283/95. Class 1 solvents excluded by production process. Class 2 and class 3 solvents likely to be present below following limits:	
dichloromethane	0,6 mg/l
tert-Butyl methyl ether	1 mg/l
acetone	1 mg/l
methanol	1 mg/l
tetrahydrofuran	0,7 mg/l

n-Hexane	0,3 mg/l
ethyl acetate	1 mg/l
ethanol	1 mg/l
cyclohexane	1 mg/l
acetonitrile	0,4 mg/l
2-propanol	1 mg/l
isopropyl acetate	1 mg/l
n-Propanol	1 mg/l
n-Heptane	1 mg/l
methylcyclohexane	1 mg/l
1,4-Dioxane	0,4 mg/l
toluene	0,9 mg/l
pyridine	1 mg/l

n-Butanol	1 mg/l
butyl acetate	1 mg/l
ethylbenzene	1 mg/l
p-Xylene	1 mg/l
m-Xylene	1 mg/l
o-Xylene	1 mg/l
benzene (G.C.)	absence

Art. No.	Volume	Container
DI08621000	1 l	
DI08622500	2,5 l	

### DI0861 N,N-Dimethylacetamide, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O)

assay (G.C.)	min. 99,5 %
identity (IR-spectrum)	passes test
density (20°/4°)	0,940 - 0,942
free acid (as CH <sub>3</sub> COOH)	max. 0,01 %
free alkali (as (CH <sub>3</sub> ) <sub>2</sub> NH)	max. 0,01 %
chlorides (Cl)	max. 0,001 %
sulfates (SO <sub>4</sub> )	max. 0,001 %
cadmium (Cd)	max. 0,000005 %

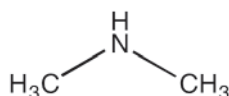
calcium (Ca)	max. 0,00005 %
chromium (Cr)	max. 0,00002 %
cobalt (Co)	max. 0,00002 %
copper (Cu)	max. 0,00002 %
heavy metals (as Pb)	max. 0,00005 %
iron (Fe)	max. 0,00001 %
lead (Pb)	max. 0,00001 %
magnesium (Mg)	max. 0,00001 %

manganese (Mn)	max. 0,000002 %
nickel (Ni)	max. 0,000002 %
residue on evaporation	max. 0,0005 %
water (K.F.)	max. 0,005 %

Art. No.	Volume	Container
DI08610100	100 ml	

## Dimethylamine, solution 40%

## DI0870 Dimethylamine, solution 40% in water, w/w, synthesis grade



- Synonyms: N-Methylmethanamine
- $C_2H_7N$
- $M = 45,09$  g/mol
- CAS [124-40-3]
- EINECS-No.: 204-697-4
- Density: 0,89 g/cm<sup>3</sup>
- Melting point: -37 °C
- Boiling point: 54 °C
- Flash pt. -18 °C
- Ignition temp.: 415 °C
- Vapour pressure: (20 °C) 263 hPa
- Refraction index: (n 20 °C/D) 1,3700
- LD 50 (oral, rat): 698 mg/kg (pure substance)
- EC-Index-No.: 612-001-00-9
- ADR: 3 FC II UN 1160
- IMDG: 3 II UN 1160
- IATA/ICAO: 3 II UN 1160

- GHS-signal word: Danger
- GHS-H sentences: H225 - H318 - H335 - H315
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2921 11 00 00
- Applications: analytical chemistry, in the rubber industry, cosmetics, detergent, laboratory reagent (magnesium).
- Appearance: Colourless clear liquid

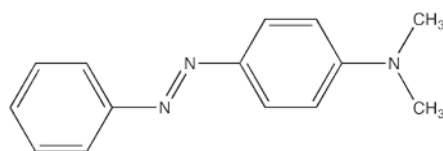
## Specifications:

assay (acidimetric) . . . . . approx. 40 %

Art. No.	Volume	Container
DI08701000	1 l	0

## 4-(Dimethylamino)-azobenzene

## DI0900 4-(Dimethylamino)-azobenzene, reagent grade



- Synonyms: Methyl yellow, Dimethyl yellow, Solvent yellow 2
- $C_{14}H_{15}N_3$
- $M = 225,30$  g/mol
- CAS [60-11-7]
- EINECS-No.: 200-455-7
- Solub. in water: (20 °C): almost insoluble
- Melting point: 113 - 117 °C
- LD 50 (oral, rat): 200 mg/kg
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H301 - H351 - H317
- GHS-P sentences: P261 - P280 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2927 00 00 90

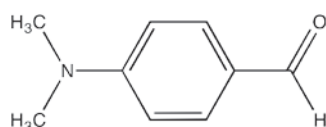
- Applications: indicator, analytical chemistry.
- Appearance: Orange-orange brown powder

## Specifications:

identity (IR-spectrum) . . . . . passes test  
 pH range (red to yellow) . . . . . 3,0 - 4,0  
 Absorption max  $\lambda_1$  (buffer pH 3,0) . . . . . 508 - 511 nm  
 Absorption max  $\lambda_2$  (buffer pH 4,0) . . . . . 455 - 460 nm  
 Absorption max  $\lambda_3$  (ethanol) . . . . . 403 - 407 nm  
 Absorptivity (A1%/1 cm;  $\lambda_3$ , 0,0005%; ethanol, on dried sample) . . . . . 1100 - 1300  
 loss on drying (105 °C) . . . . . max. 5 %

Art. No.	Volume	Container
DI09000010	10 g	0
DI09000100	100 g	0

## 4-(Dimethylamino)-benzaldehyde



- Synonyms: p-Formyldimethylaniline, Ehrlich's reagent
- $C_9H_{11}NO$
- $M = 149,19$  g/mol
- CAS [100-10-7]
- EINECS-No.: 202-819-0
- Solub. in water: (20 °C): 0,3 g/l
- Melting point: 72 - 75 °C
- Boiling point: (23 hPa) 176 - 177 °C
- Flash pt. > 100 °C

- LD 50 (oral, rat): > 6400 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2922 39 00 90
- Applications: analytical chemistry, manufacture of dyes and for pharmaceuticals synthesizing.

## DI0935 4-(Dimethylamino)-benzaldehyde, synthesis grade



assay (G.C.) . . . . . min. 98 %  
 identity (IR-spectrum) . . . . . passes test  
 residue on ignition . . . . . max. 0,2 %

Art. No.	Volume	Container
DI09350100	100 g	0
DI09350250	250 g	0

## DI0937 4-(Dimethylamino)-benzaldehyde, reagent grade, ACS



assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 melting point . . . . . 73 - 75 °C  
 colour (Hazen) of alcohol solution . . . . . max. 60  
 colour of hydrochloric acid solution . . . . . passes test

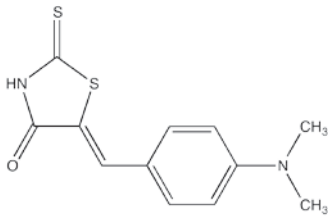
iron (Fe) . . . . . max. 0,001 %  
 solubility in alcohol . . . . . passes test  
 solubility in HCl . . . . . passes test  
 substances darkened by  $H_2SO_4$  . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %

Art. No.	Volume	Container
DI09370025	25 g	0
DI09370100	100 g	0

# Dimeth

## 5-(4-Dimethylaminobenzylidene)-rhodanine

### DI0920 5-(4-Dimethylaminobenzylidene)-rhodanine, reagent grade



- Synonyms: p-Dimethylaminobenzalrhodanine
- $C_{12}H_{12}N_2OS_2$
- $M = 264,37$  g/mol
- CAS [536-17-4]
- EINECS-No.: 208-625-2
- Solub. in water: (20 °C): almost insoluble
- Tariff number: 2934 10 00 90
- Applications: for the detection of: metals.

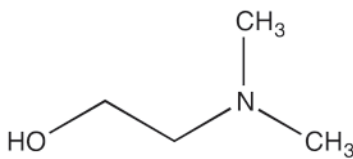
#### Specifications:

assay .....min. 98 %  
 identity (IR-spectrum) .....passes test  
 insoluble in acetone .....passes test  
 residue on ignition .....max. 0,1 %  
 suitability for determination of Ag .....passes test

Art. No.	Volume	Container
DI09200005	5 g	0

## 2-(Dimethylamino)-ethanol

### DI0950 2-(Dimethylamino)-ethanol, synthesis grade



- Synonyms: N,N-Dimethylethanolamine
- $C_4H_{11}NO$
- $M = 89,14$  g/mol
- CAS [108-01-0]
- EINECS-No.: 203-542-8
- Density: 0,89 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: < -70 °C
- Boiling point: 132 - 135 °C
- Flash pt. 39 °C
- Ignition temp.: 220 °C
- Vapour pressure: (20 °C) 5,6 hPa
- Refraction index: (n 20 °C/D) 1,4294
- LD 50 (oral, rat): 1180 mg/kg
- EC-Index-No.: 603-047-00-0
- ADR: 8 CF1 II UN 2051
- IMDG: 8 II UN 2051
- IATA/ICAO: 8 II UN 2051
- GHS-signal word: Danger

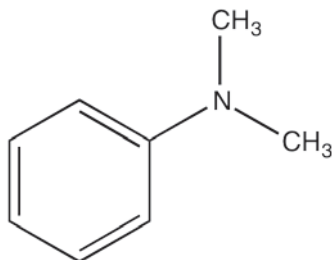
- GHS-H sentences: H314 - H226 - H302 - H312 - H332
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2922 19 80 90
- Applications: synthesis of organic products, laboratory reagent.
- Appearance: Colourless liquid

#### Specifications:

assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....0,886 - 0,887  
 residue on ignition .....max. 0,005 %  
 water (K.F.) .....max. 0,1 %

Art. No.	Volume	Container
DI09501000	1 l	0

## N,N-Dimethylaniline



- Synonyms: Dimethylaminobenzene
- $C_8H_{11}N$
- $M = 121,18$  g/mol
- CAS [121-69-7]
- EINECS-No.: 204-493-5
- Density: 0,96 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 1,2 g/l
- Melting point: 2,45 °C
- Boiling point: 194,2 °C
- Flash pt. 63 °C
- Ignition temp.: 370 °C
- Vapour pressure: (20 °C) 0,53 hPa
- Refraction index: (n 20°/D) 1,5581
- LD 50 (oral, rat): 1120 mg/kg

- EC-Index-No.: 612-016-00-0
- ADR: 6.1 T1 II UN 2253
- IMDG: 6.1 II UN 2253
- IATA/ICAO: 6.1 II UN 2253
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H331 - H226 - H351 - H411
- GHS-P sentences: P210 - P301 + P310 - P303 + P361 + P353 - P361 - P405 - P501a
- Tariff number: 2921 42 90 00
- Applications: synthesis of organic products, solvents, manufacture of dyes, laboratory reagent, in food industry.

### DI0972 N,N-Dimethylaniline, synthesis grade



assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....0,955 - 0,957  
 residue on ignition .....max. 0,01 %

Art. No.	Volume	Container
DI09721000	1 l	0

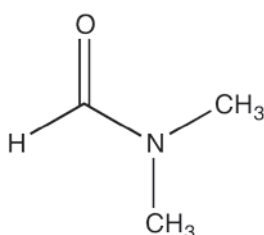
### DI0975 N,N-Dimethylaniline, reagent grade



assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....0,955 - 0,956  
 copper (Cu) .....max. 0,0002 %  
 heavy metals (as Pb) .....max. 0,0001 %  
 iron (Fe) .....max. 0,00005 %  
 lead (Pb) .....max. 0,00002 %  
 nickel (Ni) .....max. 0,00002 %  
 aniline (G.C.) .....max. 0,005 %  
 n-methylaniline (G.C) .....max. 0,4 %  
 residue on ignition .....max. 0,005 %  
 water (K.F.) .....max. 0,1 %

Art. No.	Volume	Container
DI09750250	250 ml	0
DI09751000	1 l	0

## N,N-Dimethylformamide



- Synonyms: DMF, Formic acid dimethylamide
- $C_3H_7NO$
- $M = 73,10$  g/mol
- CAS [68-12-2]
- EINECS-No.: 200-679-5
- Density: 0,94 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -61 °C
- Boiling point: 153 °C
- Flash pt. 58 °C
- Ignition temp.: 410 °C
- Vapour pressure: (20 °C) 3,77 hPa
- Refraction index: (n 20 °C/D) 1,4305

- Dielectric const.: (20 °C) 36,7
- LD 50 (oral, rat): 2800 mg/kg
- EC-Index-No.: 616-001-00-X
- ADR: 3 F1 III UN 2265
- IMDG: 3 III UN 2265
- IATA/ICAO: 3 III UN 2265
- GHS-signal word: Danger
- GHS-H sentences: H360D - H226 - H312 - H332 - H319
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2924 19 00 90
- Applications: solvents, synthesis of organic products.



## DI1061 N,N-Dimethylformamide, synthesis grade



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,948 - 0,950  
 free alkali (as CH<sub>3</sub>NH) . . . . . max. 0,1 %  
 residue on evaporation . . . . . max. 0,02 %  
 water (K.F.) . . . . . max. 0,2 %

Art. No.	Volume	Container
DI10611000	1 l	Ø
DI10612500	2,5 l	Ø
DI1061005P	5 l	Ø
DI1061025P	25 l	Ø

## DI1062 N,N-Dimethylformamide, extra pure



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,948 - 0,950  
 acidity . . . . . max. 0,0005 meq/g  
 alkalinity . . . . . max. 0,003 meq/g  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00005 %

lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 dimethylamine (G.C.) . . . . . max. 0,1 %  
 diethylamine (G.C.) . . . . . max. 0,1 %  
 methanol (G.C.) . . . . . max. 0,1 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,2 %

Art. No.	Volume	Container
DI10621000	1 l	Ø
DI10622500	2,5 l	Ø
DI1062005P	5 l	Ø
DI1062025A	25 l	Ø

## DI1065 N,N-Dimethylformamide, reagent grade, ACS, ISO, Reag. Ph Eur



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,948 - 0,950  
 density (20°/20°) . . . . . 0,949 - 0,952  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 boiling point . . . . . 152 - 154 °C  
 acidity . . . . . max. 0,0005 meq/g  
 alkalinity . . . . . max. 0,003 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %

boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %

tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
DI10651000	1 l	Ø
DI10652500	2,5 l	Ø
DI1065005P	5 l	Ø
DI1065025A	25 l	Ø

## DI1071 N,N-Dimethylformamide, dried (max. 0,01% H<sub>2</sub>O), reagent grade



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,948 - 0,950  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0005 meq/g  
 alkalinity . . . . . max. 0,003 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %

boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %

manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,01 %

Art. No.	Volume	Container
DI10711000	1 l	Ø

## DI1072 N,N-Dimethylformamide, Multisolvent® HPLC grade ACS ISO UV-VIS



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,948 - 0,950  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0005 meq/g  
 alkalinity . . . . . max. 0,003 meq/g  
 aluminium (Al) . . . . . max. 0,00001 %  
 barium (Ba) . . . . . max. 0,000001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000001 %  
 calcium (Ca) . . . . . max. 0,00003 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %

iron (Fe) . . . . . max. 0,000002 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000001 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,000001 %  
 residue on evaporation . . . . . max. 0,0002 %  
 water (K.F.) . . . . . max. 0,05 %  
 liquid chromatography suitability  
 absorbance . . . . . passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 268 nm . . . . . 15 % 0,824 AU  
 275 nm . . . . . 50 % 0,301 AU

290 nm . . . . . 80 % 0,097 AU  
 300 nm . . . . . 90 % 0,046 AU  
 330 nm . . . . . 98 % 0,009 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
DI10721000	1 l	Ø
DI10722500	2,5 l	Ø
DI10724000	4 l	Ø
DI1072020S	20 l	Ø
DI1072025S	25 l	Ø

## DI1068 N,N-Dimethylformamide, for GC residue analysis



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,948 - 0,950  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,05 %

Suitable for organohalogenated pesticide and dioxins,  
 furans and PCBs residue analysis. ECD, from 1,2,4-tri-  
 chlorobenzene to decachlorobiphenyl, no peaks are  
 obtained greater than 3 pg/ml as lindane. No peaks  
 are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
DI10681000	1 l	Ø
DI10682500	2,5 l	Ø

## DI1074 N,N-Dimethylformamide, GC head space grade



assay (G.C.) . . . . . min. 99,99 %  
 refractive index n<sub>20</sub>/D . . . . . 1,430 - 1,440  
 water (K.F.) . . . . . max. 0,03 %  
 Packed under inert gas. Suitable for residual solvents  
 analysis Residual solvents are analysed according  
 to guideline CPMP/ICH/283/95. Class 1 solvents  
 excluded by production process Class 2 and class 3  
 solvents likely to be present below following limits  
 dichloromethane . . . . . 0,6 mg/l  
 tert-Butyl methyl ether . . . . . 1 mg/l  
 acetone . . . . . 1 mg/l  
 methanol . . . . . 1 mg/l  
 tetrahydrofuran . . . . . 0,7 mg/l

n-Hexane . . . . . 0,3 mg/l  
 ethyl acetate . . . . . 1 mg/l  
 ethanol . . . . . max. 1 mg/l  
 cyclohexane . . . . . 1 mg/l  
 acetonitrile . . . . . 0,4 mg/l  
 2-propanol . . . . . 1 mg/l  
 isopropyl acetate . . . . . 1 mg/l  
 n-Propanol . . . . . 1 mg/l  
 n-Heptane . . . . . 1 mg/l  
 methylcyclohexane . . . . . 1 mg/l  
 1,4-Dioxane . . . . . 0,4 mg/l  
 toluene . . . . . 0,9 mg/l  
 pyridine . . . . . 1 mg/l

n-Butanol . . . . . 1 mg/l  
 butyl acetate . . . . . 1 mg/l  
 ethylbenzene . . . . . 1 mg/l  
 p-Xylene . . . . . 1 mg/l  
 m-Xylene . . . . . 1 mg/l  
 o-Xylene . . . . . 1 mg/l  
 benzene (G.C.) . . . . . absence

Art. No.	Volume	Container
DI10741000	1 l	Ø
DI10742500	2,5 l	Ø

# Dimeth

## DI1063 N,N-Dimethylformamide, 99,8%, anhydrous (max. 0,005% H<sub>2</sub>O)

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 0,949 - 0,952  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0005 meq/g  
 alkalinity . . . . . max. 0,003 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %

cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %

tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
DI10630100	100 ml	
DI10630500	500 ml	
DI10631000	1 l	

## DI1073 N,N-Dimethylformamide, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O), with molecular sieves

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,948 - 0,950  
 acidity . . . . . max. 0,0005 meq/g  
 alkalinity . . . . . max. 0,003 meq/g  
 copper (Cu) . . . . . max. 0,00002 %

heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,00005 %  
 lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 dimethylamine (G.C.) . . . . . max. 0,1 %  
 diethylamine (G.C.) . . . . . max. 0,1 %

methanol (G.C.) . . . . . max. 0,1 %  
 iron (Fe) . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
DI10731000	1 l	

## DI1070 N,N-Dimethylformamide, peptide synthesis grade

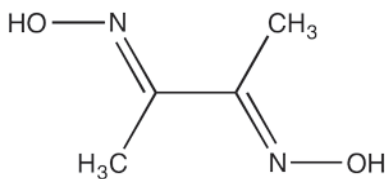
assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,948 - 0,950  
 free acid (as HCOOH) . . . . . max. 0,001 %

free alkali (as (CH<sub>3</sub>)<sub>2</sub>NH) . . . . . max. 0,0005 %  
 residue on evaporation . . . . . max. 0,0003 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
DI10701000	1 l	
DI10702500	2,5 l	

## Dimethylglyoxime

### DI1080 Dimethylglyoxime, reagent grade, ACS



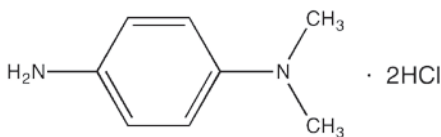
- Synonyms: 2,3-Butanedionedioxime, Diacetyldioxime
- C<sub>4</sub>H<sub>8</sub>N<sub>2</sub>O<sub>2</sub>
- M = 116,12 g/mol
- CAS [95-45-4]
- EINECS-No.: 202-420-1
- Solub. in water: (20 °C): almost insoluble
- Melting point: 240 - 241 °C
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2928 00 90 90
- Applications: analytical chemistry, synthesis of organic products, for spectrophotometric determinations, for determination of: nickel.

#### Specifications:

assay (gravimetric) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 melting point . . . . . 238 - 242 °C  
 insoluble in C<sub>2</sub>H<sub>5</sub>OH . . . . . max. 0,02 %  
 residue on ignition . . . . . max. 0,05 %  
 suitability for precipitation of Ni . . . . . passes test

Art. No.	Volume	Container
DI10800100	100 g	
DI10800500	500 g	
DI10801000	1 kg	

## N,N-Dimethyl-p-phenylenediamine dihydrochloride



- Synonyms: 4-Amino-N,N-dimethylaniline dihydrochloride, Oxidase reagent
- C<sub>8</sub>H<sub>12</sub>N<sub>2</sub> · 2HCl
- M = 209,12 g/mol
- CAS [536-46-9]
- EINECS-No.: 208-635-7
- Solub. in water: (20 °C): soluble
- Melting point: 208 - 212 °C (decomposes)
- LD 50 (oral, rat): < 90 mg/kg
- ADR: 6.1 T2 II UN 2811

- IMDG: 6.1 II UN 2811
- IATA/ICAO: 6.1 II UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H330
- GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2921 51 90 00
- Applications: analytical chemistry, laboratory reagent.
- Appearance: White-grey crystalline powder

## DI1010 N,N-Dimethyl-p-phenylenediamine dihydrochloride, reagent grade

assay (acidimetric) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 store below 4 °C

sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
 residue on ignition . . . . . max. 0,05 %

Art. No.	Volume	Container
DI10100025	25 g	

## RE0065 N,N-Dimethyl-p-phenylenediamine dihydrochloride, for microbiology, according to Gordon & McLeod

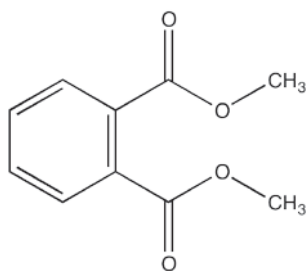
assay (acidimetric) . . . . . min. 99 %  
 turbidity . . . . . max. 3,5 N.T.U.  
 store below 4 °C

oxidase test . . . . . passes test

Art. No.	Volume	Container
RE00650005	5 g	

## Dimethyl phthalate

## FT0055 Dimethyl phthalate, synthesis grade



- Synonyms: Phthalic acid dimethyl ester
- $C_{10}H_{10}O_4$
- M = 194,19 g/mol
- CAS [131-11-3]
- EINECS-No.: 205-011-6
- Density: 1,19 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: 4 - 6 °C
- Boiling point: (5 hPa) 134 - 138 °C
- Flash pt. 150 °C
- Ignition temp.: 556 °C
- Vapour pressure: (20 °C) 0,008 hPa
- Refraction index: (n 25°C/D) 1,5137
- LD 50 (oral, rat): 6800 mg/kg

- Tariff number: 2917 34 00 90
- Applications: analytical chemistry, synthesis of organic products, in the cellulose industry, insect repellent.

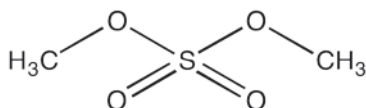
## Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,188 - 1,191  
 free acid [as  $C_6H_4(COOH)_2$ ] . . . . .max. 0,03 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
FT00551000	1 l	

## Dimethyl sulfate

## SU0119 Dimethyl sulfate, synthesis grade



- Synonyms: Sulfuric acid dimethyl ester, Methyl sulfate
- $C_2H_6O_4S$
- M = 126,13 g/mol
- CAS [77-78-1]
- EINECS-No.: 201-058-1
- Density: 1,33 g/cm<sup>3</sup>
- Solub. in water: (18 °C): 28 g/l (hydrolysis reaction)
- Melting point: -32 °C
- Boiling point: 188,5 °C (decomposes)
- Flash pt. 83 °C
- Ignition temp.: 188 °C
- Vapour pressure: (30 °C) 0,35 hPa
- Refraction index: (n 20 °C/D) 1,3865
- LD 50 (oral, rat): 205 mg/kg
- EC-Index-No.: 016-023-00-4
- ADR: 6.1 TC1 I UN 1595
- IMDG: 6.1 I UN 1595
- IATA/ICAO: Forbidden UN 1595
- GHS-signal word: Danger

- GHS-H sentences: H301 - H330 - H350 - H341 - H314 - H317
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P405 - P501a
- Tariff number: 2920 90 10 90
- Applications: analytical chemistry, synthesis of organic products, in biochemistry.

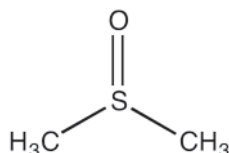
## Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,325 - 1,327  
 residue on ignition (as  $SO_3$ ) . . . . .max. 0,01 %  
 water (K.F.) . . . . .max. 0,05 %

Art. No.	Volume	Container
SU01191000	1 l	

## Dimethyl sulfoxide

## SU0150 Dimethyl sulfoxide, synthesis grade



- Synonyms: DMSO, Sulfinyl bis(methane), Methylsulfoxide, Methylsulfinylmethane
- $C_2H_6OS$
- M = 78,13 g/mol
- CAS [67-68-5]
- EINECS-No.: 200-664-3
- Density: 1,10 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 18,5 °C
- Boiling point: (33 hPa) 85 - 87 °C
- Flash pt. 95 °C

- Ignition temp.: 300 - 302 °C
- Vapour pressure: (20 °C) 0,6 hPa
- Refraction index: (n 20 °C/D) 1,48
- LD 50 (oral, rat): 14500 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2930 90 99 99
- Applications: analytical chemistry, solvents, synthesis of organic products.

## SU0150 Dimethyl sulfoxide, synthesis grade

Art. No.	Volume	Container
SU01501000	1 l	
SU01502500	2,5 l	
SU0150005P	5 l	
SU0150025P	25 l	

Art. No.	Volume	Container
SU01501000	1 l	
SU01512500	2,5 l	
SU0151005P	5 l	
SU0151025A	25 l	
SU0151200L	200 l	

## SU0151 Dimethyl sulfoxide, extra pure, Pharpur®, Ph Eur, USP



Art. No.	Volume	Container
SU01511000	1 l	
SU01512500	2,5 l	
SU0151005P	5 l	
SU0151025A	25 l	
SU0151200L	200 l	

Art. No.	Volume	Container
SU01511000	1 l	
SU01512500	2,5 l	
SU0151005P	5 l	
SU0151025A	25 l	
SU0151200L	200 l	

## SU0153 Dimethyl sulfoxide, reagent grade, ACS



Art. No.	Volume	Container
SU01531000	1 l	
SU01532500	2,5 l	
SU0153005P	5 l	

Art. No.	Volume	Container
SU01531000	1 l	
SU01532500	2,5 l	
SU0153005P	5 l	

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,099 - 1,101  
 residue on evaporation . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,1 %

assay (G.C.) . . . . .min. 99,9 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/20°) . . . . .1,100 - 1,104  
 density (25°/25°) . . . . .1,095 - 1,101  
 refractive index n<sub>25</sub>/D . . . . .1,4755 - 1,4775  
 refractive index n<sub>20</sub>/D . . . . .1,4750 - 1,4790  
 acidity . . . . .passes test  
 related substances . . . . .passes test  
 residue on evaporation . . . . .max. 0,01 %

water (K.F.) . . . . .max. 0,2 %  
 max. absorbance in a 1,0 cm cell at wavelength: A (AU)  
 275 nm . . . . .0,20  
 285 nm . . . . .0,20  
 295 nm . . . . .0,20  
 absorbance ratio 285/275 nm . . . . .max. 0,65  
 absorbance ratio 295/275 nm . . . . .max. 0,45  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

assay (G.C.) . . . . .min. 99,9 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,099 - 1,101  
 appearance . . . . .clear  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,0002 meq/g

heavy metals (as Pb) . . . . .max. 0,0001 %  
 iron (Fe) . . . . .max. 0,0001 %  
 substances darkened by  $H_2SO_4$  . . . . .passes test  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,1 %

# Dimeth

## SU0157 Dimethyl sulfoxide, dried (max. 0,01% H<sub>2</sub>O), reagent grade

assay (G.C.) . . . . . min. 99,9 %	heavy metals (as Pb) . . . . . max. 0,0001 %
identity (IR-spectrum) . . . . . passes test	iron (Fe) . . . . . max. 0,0001 %
density (20°/4°) . . . . . 1,099 - 1,101	substances darkened by H <sub>2</sub> SO <sub>4</sub> . . . . . passes test
appearance . . . . . clear	residue on evaporation . . . . . max. 0,001 %
acidity . . . . . max. 0,0002 meq/g	water (K.F.) . . . . . max. 0,01 %
colour (Hazen) . . . . . max. 10	

Art. No.	Volume	Container
SU01571000	1 l	0
SU01572500	2,5 l	0

## SU0155 Dimethyl sulfoxide, HPLC grade

assay (G.C.) . . . . . min. 99,8 %	min. transmission/max. absorbance in a 1,0 cm cell at
identity (IR-spectrum) . . . . . passes test	wavelength:
density (20°/4°) . . . . . 1,099 - 1,101	T(%) A (AU)
acidity . . . . . max. 0,0005 meq/g	268 nm. . . . . 20 % 0,699 AU
alkalinity . . . . . max. 0,0002 meq/g	280 nm. . . . . 50 % 0,301 AU
residue on evaporation . . . . . max. 0,0003 %	320 nm. . . . . 90 % 0,046 AU
water (K.F.) . . . . . max. 0,1 %	Microfiltered through membranes of pore diameter
	0,22 µm

Art. No.	Volume	Container
SU01551000	1 l	0
SU01552500	2,5 l	0

## SU0165 Dimethyl sulfoxide, GC head space grade

assay (G.C.) . . . . . min. 99,99 %	tetrahydrofuran . . . . . 0,7 mg/l	toluene . . . . . 0,9 mg/l
refractive index n <sub>20</sub> /D . . . . . 1,477 - 1,480	n-Hexane . . . . . 0,3 mg/l	pyridine . . . . . 1 mg/l
water (K.F.) . . . . . max. 0,04 %	ethyl acetate . . . . . 1 mg/l	n-Butanol . . . . . 1 mg/l
Packed under inert gas. Suitable for residual solvents	ethanol . . . . . 1 mg/l	butyl acetate . . . . . 1 mg/l
analysis Residual solvents are analysed according	cyclohexane . . . . . 1 mg/l	ethylbenzene . . . . . 1 mg/l
to guideline CPMP/ICH/283/95. Class 1 solvents	acetonitrile . . . . . 0,4 mg/l	p-Xylene . . . . . 1 mg/l
excluded by production process Class 2 and class 3	2-propanol . . . . . 1 mg/l	m-Xylene . . . . . 1 mg/l
solvents likely to be present below following limits	isopropyl acetate . . . . . 1 mg/l	o-Xylene . . . . . 1 mg/l
dichloromethane . . . . . 0,6 mg/l	n-Propanol . . . . . 1 mg/l	benzene (G.C.) . . . . . absence
tert-Butyl methyl ether . . . . . 1 mg/l	n-Heptane . . . . . 1 mg/l	
acetone . . . . . 1 mg/l	methylcyclohexane . . . . . 1 mg/l	
methanol . . . . . 1 mg/l	1,4-Dioxane . . . . . 0,4 mg/l	

Art. No.	Volume	Container
SU01651000	1 l	0

## SU0152 Dimethyl sulfoxide, 99,9%, anhydrous (max. 0,005% H<sub>2</sub>O)

assay (G.C.) . . . . . min. 99,9 %	heavy metals (as Pb) . . . . . max. 0,0001 %
identity (IR-spectrum) . . . . . passes test	iron (Fe) . . . . . max. 0,0001 %
density (20°/4°) . . . . . 1,099 - 1,101	substances darkened by H <sub>2</sub> SO <sub>4</sub> . . . . . passes test
appearance . . . . . clear	residue on evaporation . . . . . max. 0,001 %
colour (Hazen) . . . . . max. 10	water (K.F.) . . . . . max. 0,005 %
acidity . . . . . max. 0,0002 meq/g	

Art. No.	Volume	Container
SU01520100	100 ml	0
SU01520500	500 ml	0
SU01521000	1 l	0

## SU0158 Dimethyl sulfoxide, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O), with molecular sieves

assay (G.C.) . . . . . min. 99,5 %	acidity . . . . . passes test
identity (IR-spectrum) . . . . . passes test	dimethyl sulfone (G.C.) . . . . . passes test
density (20°/20°) . . . . . 1,100 - 1,104	water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
SU01581000	1 l	0

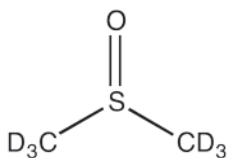
## SU0159 Dimethyl sulfoxide, molecular biology grade

assay (G.C.) . . . . . min. 99,8 %	residue on evaporation . . . . . max. 0,001 %
identity (IR-spectrum) . . . . . passes test	water (K.F.) . . . . . max. 0,1 %
density (20°/4°) . . . . . 1,099 - 1,101	DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
SU01590250	250 ml	0

## Dimethyl sulfoxide-d<sub>6</sub>

### SU0161 Dimethyl sulfoxide-d<sub>6</sub>, deuteration degree min. 99,8%, NMR spectroscopy grade, Spectrosol®



- Synonyms: Methylsulfoxide deuterated, DMSO deuterated, Hexadeuterodimethyl sulfoxide
- C<sub>2</sub>D<sub>6</sub>OS
- M = 84,17 g/mol
- CAS [2206-27-1]
- EINECS-No.: 218-617-0
- Density: 1,19 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 20,2 °C
- Boiling point: 190 °C
- Flash pt. 88 °C
- Ignition temp.: 270 °C
- Vapour pressure: (20 °C) 2,5 hPa
- Refraction index: (20 °C) 1,48
- LD 50 (oral, rat): 17500 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2845 90 10 00
- Applications: for nuclear magnetic resonance spectroscopy.

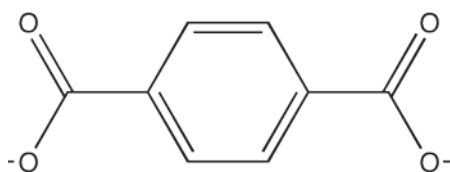
#### Specifications:

deuteration degree . . . . . min. 99,8 %
water (K.F., H <sub>2</sub> O + D <sub>2</sub> O) . . . . . max. 0,03 %
performance test
(NMR-spectrum) . . . . . passes test

Art. No.	Volume	Container
SU01610010	10 ml	0
SU0161.750	x10x0,75ml	0

## Dimethyl terephthalate

## TE0080 Dimethyl terephthalate, synthesis grade



- Synonyms: DMT, Terephthalic acid dimethyl ester, Dimethyl-1,4-benzenedicarboxylate
- $C_{10}H_{10}O_4$
- $M = 194,19$  g/mol
- CAS [120-61-6]
- EINECS-No.: 204-411-8
- Solub. in water: (20 °C): 0,036 g/l
- Melting point: 139 - 141 °C
- Boiling point: 282 °C
- Flash pt. 141 °C
- Ignition temp.: 520 °C
- Vapour pressure: (20 °C) < 1 hPa
- LD 50 (oral, rat): 14400 mg/kg
- Tariff number: 2917 37 00 00

- Applications: synthesis of organic products (herbicide), analytical chemistry, manufacture of adhesives, painting, manufacturing of inks, in the textile industry, manufacturing of synthetic resins.
- Appearance: White crystals

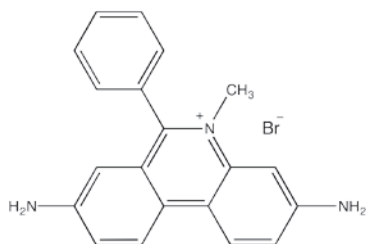
**Specifications:**

assay (G.C.) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test

Art. No.	Volume	Container
TE00801000	1 kg	☐

## Dimidium bromide

## DI1115 Dimidium bromide, for determination of tensioactives



- Synonyms: 3,8-Diamino-5-methyl-6-phenylphenanthridinium bromide
- $C_{20}H_{18}BrN_3$
- $M = 380,30$  g/mol
- CAS [518-67-2]
- EINECS-No.: 208-256-7
- Solub. in water: (20 °C): soluble
- Melting point: 242 °C
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2933 99 90 90

- Applications: analytical chemistry, for determination of: tensioactive substances.

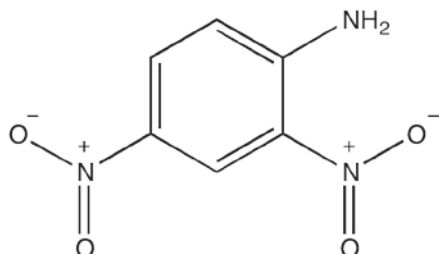
**Specifications:**

assay (titration with  $HClO_4$ ) . . . . .min. 98 %  
Absorptivity ( $A_{1\%}^{1\text{ cm}}$ ;  $\lambda$  max; methanol) . . . . .155 - 175  
Absorption maximum (in methanol) . . . . .523 - 520 nm  
loss on drying (110 °C) . . . . .max. 5 %

Art. No.	Volume	Container
DI11150001	1 g	☐
DI11150005	5 g	☐

## 2,4-Dinitroaniline

## DI1155 2,4-Dinitroaniline, extra pure



- Synonyms: 2,4-Dinitrobenzenamine
- $C_6H_5N_2O_4$
- $M = 183,12$  g/mol
- CAS [97-02-9]
- EINECS-No.: 202-553-5
- Solub. in water: (20 °C): 1 g/l
- Melting point: 177 - 180 °C
- Flash pt. 224 °C
- Vapour pressure: (20 °C) 13 hPa
- LD 50 (oral, rat): 285 mg/kg
- EC-Index-No.: 612-040-00-1
- ADR: 6.1 T2 II UN 1596
- IMDG: 6.1 II UN 1596
- IATA/ICAO: 6.1 II UN 1596
- GHS-signal word: Danger
- GHS-H sentences: H300 - H310 - H330 - H373 - H411

- GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2921 42 10 90
- Applications: synthesis of organic products and manufacture of dyes.

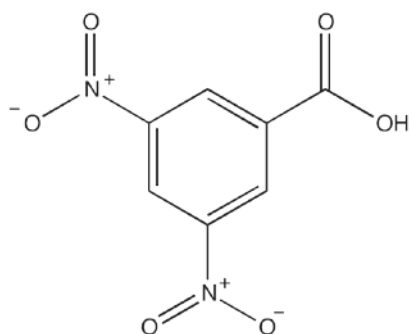
**Specifications:**

assay (G.C.) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test  
residue on ignition . . . . .max. 0,05 %

Art. No.	Volume	Container
DI11550025	25 g	☐
DI11550100	100 g	☐

## 3,5-Dinitrobenzoic acid

## AC0890 3,5-Dinitrobenzoic acid, synthesis grade



- $C_7H_4N_2O_6$
- $M = 212,12$  g/mol
- CAS [99-34-3]
- EINECS-No.: 202-751-1
- Solub. in water: (20 °C): sparingly soluble
- Melting point: 205 - 207 °C
- GHS-signal word: Warning
- GHS-H sentences: H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P304 + P340 - P405 - P501a
- Tariff number: 2916 39 00 90
- Applications: for the identification of: alcohols, alkyl halides; chromatography, synthesis of organic products.

**Specifications:**

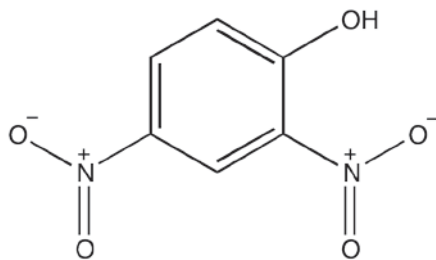
assay (acidimetric) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test  
heavy metals (as Pb) . . . . .max. 0,001 %  
residue on ignition . . . . .max. 0,02 %

Art. No.	Volume	Container
AC08900250	250 g	☐

# Dinitr

## 2,4-Dinitrophenol

DI1245 2,4-Dinitrophenol, synthesis grade



- Synonyms: 1-Hydroxy-2,4-dinitrobenzene, a-Dinitrophenol
- $C_6H_4N_2O_5$
- $M = 184,10$  g/mol
- CAS [51-28-5]
- EINECS-No.: 200-087-7
- Solub. in water: (20 °C): 5,6 g/l
- Melting point: 114 - 115 °C
- LD 50 (oral, rat): 30 mg/kg
- EC-Index-No.: 609-016-00-8
- ADR: 4.1 DT I UN 1320
- IMDG: 4.1 I UN 1320
- IATA/ICAO: 4.1 I UN 1320
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H331 - H373 - H400

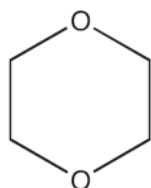
- GHS-P sentences: P260 - P301 + P310 - P361 - P321 - P405 - P501a
- Tariff number: 2908 90 00 90
- Applications: manufacture of dyes, insecticide, indicator, preservative agent (wood), for the detection of potassium and ammonium.
- Appearance: Yellow-brown solid

### Specifications:

assay (G.C., on dried sample) . . . . .min. 98 %  
identity (IR-spectrum) . . . . .passes test

Art. No.	Volume	Container
DI12450250	250 g	
DI12451000	1 kg	

## 1,4-Dioxane



- Synonyms: Glycoethylether, 1,4-Diethylene dioxide, 1,4-Dioxacyclohexane
- $C_4H_8O_2$
- $M = 88,11$  g/mol
- CAS [123-91-1]
- EINECS-No.: 204-661-8
- Density: 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 12 °C
- Boiling point: 101,5 °C
- Flash pt. 11 °C
- Ignition temp.: 300 °C
- Vapour pressure: (20 °C) 41 hPa

- Dielectric const.: (25 °C) 2,2
- LD 50 (oral, rat): 5200 mg/kg
- EC-Index-No.: 603-024-00-5
- ADR: 3 F1 II UN 1165
- IMDG: 3 II UN 1165
- IATA/ICAO: 3 II UN 1165
- GHS-signal word: Danger
- GHS-H sentences: H225 - EUH019 - H351 - H319 - EUH066 - H335
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2932 99 00 90
- Applications: solvents, analytical chemistry.

DI1287 1,4-Dioxane, extra pure, stabilized with 2,5 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)



assay (G.C.) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test  
density (20°/4°) . . . . .1,032 - 1,034  
density (20°/20°) . . . . .max. 0,001 meq/g  
copper (Cu) . . . . .max. 0,00002 %  
iron (Fe) . . . . .max. 0,00005 %  
lead (Pb) . . . . .max. 0,00002 %

nickel (Ni) . . . . .max. 0,00002 %  
acetal (G.C.) . . . . .max. 0,1 %  
acetaldehyde (G.C.) . . . . .max. 0,01 %  
carbonyl compounds (as HCHO) . . . . .max. 0,1 %  
peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . .max. 0,005 %  
residue on evaporation . . . . .max. 0,002 %  
water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
DI12871000	1 l	
DI12872500	2,5 l	
DI1287005L	5 l	
DI1287025A	25 l	

DI1289 1,4-Dioxane, reagent grade, ACS, ISO, Reag. Ph Eur, stabilized with 2,5 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)



assay (G.C.) . . . . .min. 99,5 %  
identity (IR-spectrum) . . . . .passes test  
density (20°/4°) . . . . .1,032 - 1,034  
density (20°/20°) . . . . .1,034 - 1,036  
colour (Hazen) . . . . .max. 10  
melting point . . . . .min. 11,0 °C  
acidity . . . . .max. 0,0008 meq/g  
aluminium (Al) . . . . .max. 0,00005 %  
barium (Ba) . . . . .max. 0,00001 %  
boron (B) . . . . .max. 0,00002 %  
cadmium (Cd) . . . . .max. 0,00005 %  
calcium (Ca) . . . . .max. 0,00005 %

chromium (Cr) . . . . .max. 0,000002 %  
cobalt (Co) . . . . .max. 0,000002 %  
copper (Cu) . . . . .max. 0,000002 %  
iron (Fe) . . . . .max. 0,00001 %  
lead (Pb) . . . . .max. 0,00001 %  
magnesium (Mg) . . . . .max. 0,00001 %  
manganese (Mn) . . . . .max. 0,000002 %  
nickel (Ni) . . . . .max. 0,000002 %  
tin (Sn) . . . . .max. 0,00001 %  
zinc (Zn) . . . . .max. 0,00001 %  
acetaldehyde (G.C.) . . . . .max. 0,005 %  
formaldehyde (G.C.) . . . . .max. 0,05 %

peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . .max. 0,005 %  
carbonyl compounds (as HCHO) . . . . .max. 0,01 %  
residue on evaporation . . . . .max. 0,001 %  
water (K.F.) . . . . .max. 0,05 %

Art. No.	Volume	Container
DI12891000	1 l	
DI12892500	2,5 l	
DI1289005L	5 l	

DI1290 1,4-Dioxane, dried (max. 0,005% H<sub>2</sub>O), reagent grade, stabilized with 2,5 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)



assay (G.C.) . . . . .min. 99,5 %  
identity (IR-spectrum) . . . . .passes test  
density (20°/4°) . . . . .1,032 - 1,034  
colour (Hazen) . . . . .max. 10  
acidity . . . . .max. 0,0008 meq/g  
melting point . . . . .min. 11,0 °C  
aluminium (Al) . . . . .max. 0,00005 %  
barium (Ba) . . . . .max. 0,00001 %  
boron (B) . . . . .max. 0,00002 %  
cadmium (Cd) . . . . .max. 0,00005 %

calcium (Ca) . . . . .max. 0,00005 %  
chromium (Cr) . . . . .max. 0,000002 %  
cobalt (Co) . . . . .max. 0,000002 %  
copper (Cu) . . . . .max. 0,000002 %  
iron (Fe) . . . . .max. 0,00001 %  
lead (Pb) . . . . .max. 0,00001 %  
magnesium (Mg) . . . . .max. 0,00001 %  
manganese (Mn) . . . . .max. 0,000002 %  
nickel (Ni) . . . . .max. 0,000002 %  
tin (Sn) . . . . .max. 0,00001 %

zinc (Zn) . . . . .max. 0,00001 %  
acetaldehyde (G.C.) . . . . .max. 0,005 %  
formaldehyde (G.C.) . . . . .max. 0,05 %  
peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . .max. 0,005 %  
carbonyl compounds (as HCHO) . . . . .max. 0,01 %  
residue on evaporation . . . . .max. 0,001 %  
water (K.F.) . . . . .max. 0,005 %

Art. No.	Volume	Container
DI12901000	1 l	

DI1292 1,4-Dioxane, HPLC grade, stabilized with 1 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)



assay (G.C.) . . . . .min. 99,8 %  
identity (IR-spectrum) . . . . .passes test  
density (20°/4°) . . . . .1,032 - 1,034  
acidity . . . . .max. 0,0005 meq/g  
alkalinity . . . . .max. 0,0002 meq/g  
residue on evaporation . . . . .max. 0,0005 %  
water (K.F.) . . . . .max. 0,02 %

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
T(%) A (AU)  
215 nm. . . . .20 % 0,699 AU  
230 nm. . . . .50 % 0,301 AU  
275 nm. . . . .90 % 0,046 AU  
Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
DI12921000	1 l	
DI12922500	2,5 l	

**DI1288 1,4-Dioxane, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O), stabilized with 2,5 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)**

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 1,034 - 1,036  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0008 meq/g  
 melting point . . . . . min. 11,0 °C  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %

chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 acetaldehyde (G.C.) . . . . . max. 0,005 %

formaldehyde (G.C.) . . . . . max. 0,05 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,005 %  
 carbonyl compounds (as HCHO) . . . . . max. 0,01 %  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
DI12880100	100 ml	
DI12880500	500 ml	
DI12881000	1 l	

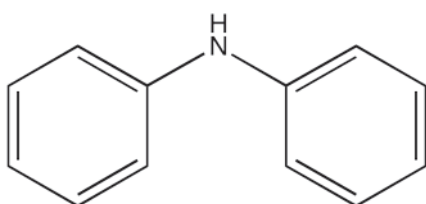
**DI1294 1,4-Dioxane, 99%, anhydrous (max. 0,005% H<sub>2</sub>O), with molecular sieves, stabilized with 2,5 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)**

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,032 - 1,034  
 acidity . . . . . max. 0,001 meq/g  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00005 %

lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 acetal (G.C.) . . . . . max. 0,1 %  
 acetaldehyde (G.C.) . . . . . max. 0,01 %  
 carbonyl compounds (as HCHO) . . . . . max. 0,1 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,005 %

water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
DI12941000	1 l	

**Diphenylamine**

- Synonyms: N-Phenylbenzeneamine, N-Phenylaniline
- C<sub>12</sub>H<sub>11</sub>N
- M = 169,23 g/mol
- CAS [122-39-4]
- EINECS-No.: 204-539-4
- Solub. in water: (25 °C): ~ 0,05 g/l
- Melting point: 53 - 54 °C
- Boiling point: (13,3 hPa) ~ 159 °C
- Flash pt. ~ 153 °C
- Ignition temp.: ~ 630 °C
- Vapour pressure: (20 °C) 0,0003 hPa
- LD 50 (oral, rat): 2000 mg/kg
- EC-Index-No.: 612-026-00-5

- ADR: 6.1 T2 II UN 2811
- IMDG: 6.1 II UN 2811
- IATA/ICAO: 6.1 II UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H331 - H373 - H410
- GHS-P sentences: P260 - P301 + P310 - P361 - P321 - P405 - P501a
- Tariff number: 2921 44 00 20
- Applications: analytical chemistry, synthesis of organic products, for determination of: oxidizing agents, manufacture of dyes.
- Appearance: White to light yellow flakes

**DI0630 Diphenylamine, synthesis grade**

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %

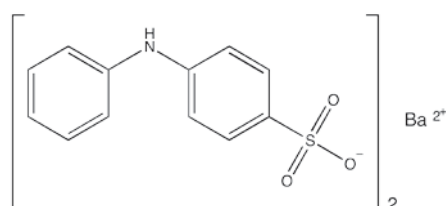
Art. No.	Volume	Container
DI06301000	1 kg	

**DI0633 Diphenylamine, redox indicator, reagent grade, ACS**

assay (titration with HClO<sub>4</sub>) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 insoluble in C<sub>2</sub>H<sub>5</sub>OH . . . . . max. 0,01 %  
 melting point . . . . . 52,5 - 54,0 °C  
 nitrates (NO<sub>3</sub>) . . . . . passes test

iron (Fe) . . . . . max. 0,001 %  
 aniline (TLC) . . . . . max. 0,1 %  
 sensitivity to nitrates . . . . . passes test  
 residue on ignition . . . . . max. 0,03 %

Art. No.	Volume	Container
DI06330100	100 g	
DI06330250	250 g	

**Diphenylamine-4-sulfonic acid, barium salt****BA0060 Diphenylamine-4-sulfonic acid, barium salt, redox indicator, reagent grade**

- Synonyms: Bariumdiphenylamine-4-sulfonate, 4-Anilinobenzene sulfonic acid barium salt
- C<sub>20</sub>H<sub>16</sub>N<sub>2</sub>O<sub>3</sub>S<sub>2</sub>Ba
- M = 633,90 g/mol
- CAS [6211-24-1]
- EINECS-No.: 228-278-0
- Solub. in water: (20 °C): almost insoluble
- EC-Index-No.: 056-002-00-7
- ADR: 6.1 T5 III UN 1564
- IMDG: 6.1 III UN 1564
- IATA/ICAO: 6.1 III UN 1564
- GHS-signal word: Warning
- GHS-H sentences: H302 - H332
- GHS-P sentences: P261 - P264 - P301 + P312 - P304 + P340 - P312 - P501a

- Tariff number: 2921 44 00 90
- Applications: analytical chemistry, indicator, for determination of: nitrates.

**Specifications:**

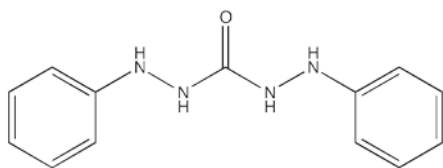
identity (IR-spectrum) . . . . . passes test  
 Absorption maximum λ (in H<sub>2</sub>O) . . . . . 290 - 295 nm  
 Absorptivity (A1%/1 cm; 1 max; 0,001 %, H<sub>2</sub>O, on dried sample) . . . . . 600 - 700  
 suitability as redox indicator . . . . . passes test  
 loss on drying (105 °C) . . . . . max. 5 %

Art. No.	Volume	Container
BA00600005	5 g	

# Diphen

## 1,5-Diphenylcarbazide

### DI0650 1,5-Diphenylcarbazide, reagent grade, ACS



- Synonyms: 1,5-Diphenylcarboic dihydrazide
- $C_{13}H_{14}N_4O$
- $M = 242,28 \text{ g/mol}$
- CAS [140-22-7]
- EINECS-No.: 205-403-7
- Solub. in water: (20 °C): slightly soluble
- Melting point: 170 - 172 °C
- Tariff number: 2928 00 90 90
- Applications: analytical chemistry, reagent for metals detection.

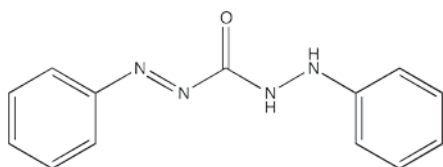
**Specifications:**  
assay (HPLC) ..... approx. 98 %

identity (IR-spectrum) ..... passes test  
melting point ..... 173 - 176 °C  
solubility in aqueous acetone ..... passes test  
insoluble in  $C_2H_5OH$  ..... passes test  
sensitivity to chromates ..... passes test  
residue on ignition ..... max. 0,05 %

Art. No.	Volume	Container
DI06500025	25 g	0
DI06500100	100 g	0

## 1,5-Diphenylcarbazone

### DI0660 1,5-Diphenylcarbazone, reagent grade



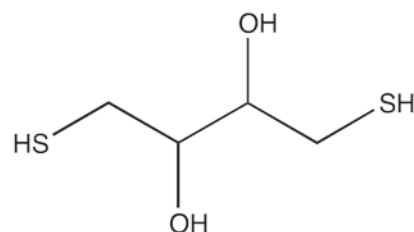
- Synonyms: Phenyl diazenecarboxylic acid 2-phenylhydrazide, Phenylazoformic acid 2-phenylhydrazide
- $C_{13}H_{12}N_4O$
- $M = 240,27 \text{ g/mol}$
- CAS [538-62-5]
- EINECS-No.: 208-698-0
- Solub. in water: (20 °C): insoluble
- Melting point: 153 - 158 °C (decomposes)
- Tariff number: 2928 00 90 90
- Applications: analytical chemistry, laboratory reagent, for the detection of: mercury.

**Specifications:**  
assay (HPLC) ..... 35 - 40 %  
identity (IR-spectrum) ..... passes test  
melting point ..... 153 - 158 °C  
solubility in acetone ..... passes test  
insoluble in  $C_2H_5OH$  ..... passes test  
residue on ignition ..... max. 0,1 %  
suitability for determination of Hg ..... passes test

Art. No.	Volume	Container
DI06600005	5 g	0
DI06600025	25 g	0

## 1,4-Dithiothreitol

### DI1360 1,4-Dithiothreitol, molecular biology grade



- Synonyms: DTT, Cleland's reagent
- $C_4H_{10}O_2S_2$
- $M = 154,24 \text{ g/mol}$
- CAS [3483-12-3]
- EINECS-No.: 222-468-7
- Solub. in water: (20 °C): soluble
- Melting point: 40 - 43 °C
- LD 50 (oral, rat): 400 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302 - H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2930 90 99 99
- Applications: for microbiology.

**Specifications:**  
assay (iodometric) ..... min. 99 %  
identity (IR-spectrum) ..... passes test  
absorbance of an aqueous solution  
0,1 M in a 1 cm cell at 260 nm ..... max. 0,5 AU  
absorbance of an aqueous solution  
0,1 M in a 1 cm cell at 280 nm ..... max. 0,1 AU  
heavy metals (as Pb) ..... max. 0,001 %  
iron (Fe) ..... max. 0,0005 %  
DNases, RNases, Proteases ..... non detected

Art. No.	Volume	Container
DI13600001	1 g	0
DI13600010	10 g	0

## Doctor solution (sodium plumbite)

### S01012 Doctor solution (sodium plumbite), according to ASTM D235, reagent for sulfides

- Density: 1,15 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C5 II UN 3266
- IMDG: 8 II UN 3266
- IATA/ICAO: 8 II UN 3266
- GHS-signal word: Danger
- GHS-H sentences: H360Df - H373 - H314 - H411
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 3822 00 00 00
  - Applications: analytical chemistry, for the detection of: sulfides.
- Specifications:**  
alkaline aqueous solution saturated with PbO. composition (in 1 l. distilled water):  
sodium hydroxide (NaOH) ..... 125 g  
lead (II) oxide (PbO) ..... saturated

chlorides (Cl) ..... max. 0,001 %  
sulfates ( $SO_4$ ) ..... max. 0,005 %  
iron (Fe) ..... max. 0,001 %

Art. No.	Volume	Container
S010121000	1 l	0
S01012005P	5 l	0
S01012010C	10 l	0



## 1-Dodecanol

## AL0330 1-Dodecanol, synthesis grade



- Synonyms: Dodecyl alcohol, Lauryl alcohol
- $C_{12}H_{26}O$
- $M = 186,34$  g/mol
- CAS [112-53-8]
- EINECS-No.: 203-982-0
- Density: 0,83 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: 22 - 24 °C
- Boiling point: 258 - 265 °C
- Flash pt. 119 °C
- Ignition temp.: 275 °C
- LD 50 (oral, rat): 12800 mg/kg
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning

- GHS-H sentences: H400 - H315
- GHS-P sentences: P280 - P273 - P321 - P362 - P332 + P313 - P501a
- Tariff number: 2905 17 00 00
- Applications: laboratory reagent, synthesis of organic products.

**Specifications:**

assay (G.C.) .....min. 98 %  
 identity (IR-spectrum) .....passes test  
 residue on ignition .....max. 0,005 %

Art. No.	Volume	Container
AL03301000	1 l	0

## DPX

## DP0050 DPX, mounting medium for histology



- Flash pt. 8 °C
- Refraction index: (n 20 °C/D) 1,52
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger
- GHS-H sentences: H225 - H360Df - H304 - H373 - H315 - H336

- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: for histology, microscopy.
- Appearance: Clear, dense liquid

**Specifications:**

Synthetic balsam for inclusion in histology and microscopy techniques.

Art. No.	Volume	Container
DP00500100	100 ml	0
DP00500500	500 ml	0

# Eosinm

## Eosin methylene blue, according to May-Grünwald

### E00055 Eosin methylene blue, according to May-Grünwald

- CAS [68988-92-1]
- EINECS-No.: 273-541-5
- Solub. in water: (20 °C): slightly soluble
- LD 50 (oral, rat): 1180 mg/kg (toxic component)
- Tariff number: 3204 19 00 90
- Applications: microscopy, colouring agent.

#### Specifications:

Absorption maximum  $\lambda_1$  . . . . . 645 - 651 nm  
 Absorption maximum  $\lambda_2$  . . . . . 520 - 525 nm  
 Absorptivity (A1%/1 cm;  $\lambda_1$  max; in methanol, 0,0005 %, on dried sample) . . . . . 1100 - 1350  
 Absorptivity (A1%/1 cm;  $\lambda_2$  max; in methanol, 0,0005 %, on dried sample) . . . . . 600 - 800  
 related substances (TLC) . . . . . passes test

suitability for microscopy . . . . . passes test  
 loss on drying (105 °C) . . . . . max. 10 %

Art. No.	Volume	Container
E000550025	25 g	0
E000550100	100 g	0

## Eosin methylene blue, according to Wright

### E00057 Eosin methylene blue, according to Wright

- Synonyms: Wright's eosin methylene blue
- CAS [68988-92-1]
- EINECS-No.: 273-541-5
- Solub. in water: (20 °C): insoluble
- LD 50 (oral, rat): 1180 mg/kg (toxic component)
- Tariff number: 3204 19 00 90
- Applications: analytical chemistry, for spectrophotometric determinations (for determination of: silver), for biology, indicator, microscopy.

#### Specifications:

pH (0,01 %, methanol, 50 %) . . . . . 6 - 7  
 Absorption maximum  $\lambda_1$  (in methanol) . . . . . 648 - 651 nm  
 Absorption maximum  $\lambda_2$  (in methanol) . . . . . 521 - 524 nm  
 Absorptivity (A1%/1 cm;  $\lambda_1$ , 0,0005% methanol, on dried sample) . . . . . 1200 - 1400  
 Absorptivity (A1%/1 cm;  $\lambda_2$ , 0,0005% methanol, on dried sample) . . . . . 650 - 850  
 loss on drying (105 °C) . . . . . max. 10 %

suitability for microscopy . . . . . passes test  
 TLC test . . . . . passes test

Art. No.	Volume	Container
E000570025	25 g	0
E000570050	50 g	0
E000570100	100 g	0

## Eosin methylene blue solutions

### E00050 Eosin methylene blue, solution according to Leishman

- Density: 0,79 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. ~ 11 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992

- GHS-signal word: Danger
- GHS-H sentences: H225 - H331 - H370
- GHS-P sentences: P210 - P241 - P260 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3204 19 00 90

#### Specifications:

suitability for microscopy . . . . . passes test

Art. No.	Volume	Container
E000501000	1 l	0

### E00056 Eosin methylene blue, solution according to May-Grünwald

- Synonyms: May-Grünwald's eosin methylene blue solution
- Density: 0,791 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: ~ 65 °C
- Flash pt. ~ 12 °C
- Ignition temp.: ~ 455 °C
- Vapour pressure: (20 °C) ~ 125 hPa
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992

- GHS-signal word: Danger
- GHS-H sentences: H225 - H331 - H370
- GHS-P sentences: P210 - P241 - P260 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3204 19 00 90
- Applications: microscopy.
- Appearance: Blue with red shades liquid

Absorbance (0,25 %  $\lambda_1$ , 1 cm) . . . . . 0,50 - 0,80  
 Absorbance (0,25 %  $\lambda_2$ , 1 cm) . . . . . 0,30 - 0,40  
 suitability for microscopy . . . . . passes test

Art. No.	Volume	Container
E000560500	500 ml	0
E000562500	2,5 l	0

### E00058 Eosin methylene blue, solution according to Wright

- Synonyms: Wright's eosin methylene blue solution
- Density: 0,80 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 5 °C
- LD 50 (oral, rat): 5628 mg/kg
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992

- GHS-signal word: Danger
- GHS-H sentences: H225 - H331 - H370
- GHS-P sentences: P210 - P241 - P260 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3204 19 00 90
- Applications: microscopy, manufacture of dyes, analytical chemistry.

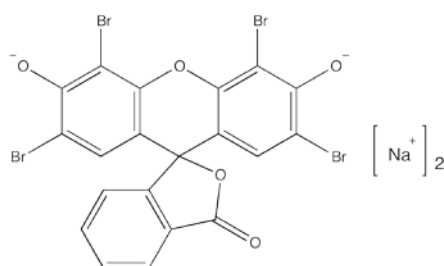
#### Specifications:

suitability for histological stain . . . . . passes test

Art. No.	Volume	Container
E000580500	500 ml	0
E000582500	2,5 l	0

## Eosin yellowish, C.I. 45380

### E00025 Eosin yellowish, C.I. 45380, for microscopy



- Synonyms: 2',4',5',7'-Tetrabromofluorescein, Eosin Y
- C<sub>20</sub>H<sub>6</sub>Br<sub>4</sub>Na<sub>2</sub>O<sub>5</sub>
- M = 691,86 g/mol
- CAS [17372-87-1]
- EINECS-No.: 241-409-6
- Solub. in water: (20 °C): 300 g/l
- LD 50 (oral, rat): 4700 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332
- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a
- Tariff number: 3204 12 00 90
- Applications: analytical chemistry, indicator, for spectrophotometric determinations (for determination of: silver), for biology, microscopy.

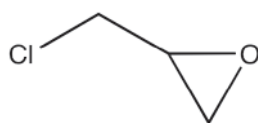
#### Specifications:

assay (gravimetric) . . . . . min. 88 %  
 Absorption maximum I (in H<sub>2</sub>O) . . . . . 515 - 518 nm  
 Absorptivity (A1%/1 cm; 0,0005 % I max, H<sub>2</sub>O) . . . . . 1200 - 1400  
 related substances (TLC) . . . . . passes test  
 suitability for microscopy . . . . . passes test  
 loss on drying (110 °C) . . . . . max. 8 %

Art. No.	Volume	Container
E000250025	25 g	0
E000250100	100 g	0
E000250500	500 g	0

## Epichlorohydrine

## EP0030 Epichlorohydrine, synthesis grade



- Synonyms: 1-Chloro-2,3-epoxypropane, 2,3-Epoxypropyl chloride, 2-Chloromethyl oxirane
- $C_3H_5ClO$
- $M = 92,53 \text{ g/mol}$
- CAS [106-89-8]
- EINECS-No.: 203-439-8
- Density:  $1,18 \text{ g/cm}^3$
- Solub. in water: (20 °C):  $60 \text{ g/l}$
- Melting point:  $-57,2 \text{ °C}$
- Boiling point:  $116,5 \text{ °C}$
- Flash pt.  $28 \text{ °C}$
- Ignition temp.:  $385 \text{ °C}$
- Vapour pressure: (20 °C)  $16,5 \text{ hPa}$
- Refraction index: (n 20 °C/D)  $1,4375$
- LD 50 (oral, rat):  $90 \text{ mg/kg}$
- EC-Index-No.: 603-026-00-6
- ADR: 6.1 TF1 II UN 2023
- IMDG: 6.1 II UN 2023
- IATA/ICAO: 6.1 II UN 2023
- GHS-signal word: Danger

- GHS-H sentences: H301 - H311 - H331 - H350 - H314 - H226 - H317 -
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2910 30 00 00
- Applications: synthesis of organic products, manufacturing of synthetic resins, painting, manufacturing of lacquers.

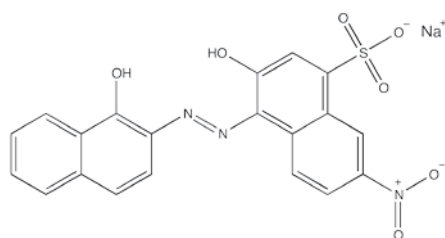
**Specifications:**

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,178 - 1,182  
 residue on evaporation . . . . .max. 0,01 %

Art. No.	Volume	Container
EP00301000	1 l	0
EP00302500	2,5 l	0

## Eriochrome black T, C.I. 14645

## NE0045 Eriochrome black T, C.I. 14645, indicator for metal titration



- Synonyms: Chrome black T, 2-Hydroxy-1-(1-hydroxy-2-naphthylazo)-6-nitronaphthalene-4-sulfonic acid sodium salt
- $C_{20}H_{12}N_2NaO_7S$
- $M = 461,38 \text{ g/mol}$
- CAS [1787-61-7]
- EINECS-No.: 217-250-3
- Solub. in water: (20 °C):  $50 \text{ g/l}$
- LD 50 (oral, rat):  $17590 \text{ mg/kg}$
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning
- GHS-H sentences: H319 - H411
- GHS-P sentences: P280 - P273 - P264 - P305 + P351 + P338 - P337 + P313 - P501a

- Tariff number: 3204 19 00 90
- Applications: analytical chemistry, indicator (metals), indicator of the hardness of water.

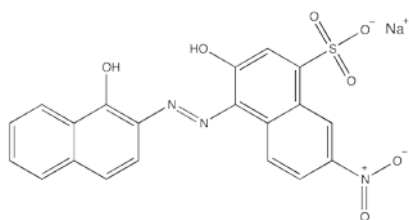
**Specifications:**

Absorption maximum  $\lambda$  (pH + 10,0) . . . . 619 - 624 nm  
 Absorptivity (A 1 %/1 cm;  $\lambda$  max;  
 pH 10,0; on dried sample) . . . . .270 - 370  
 suitability as metal indicator . . . . .passes test  
 loss on drying . . . . .max. 7 %

Art. No.	Volume	Container
NE00450025	25 g	0
NE00450100	100 g	0

## Eriochrome black T, solution 1%

## NE0048 Eriochrome black T, solution 1%, for complexometry



- $C_{20}H_{12}N_2NaO_7S$
- $M = 461,38 \text{ g/mol}$
- CAS [1787-61-7]
- EINECS-No.: 217-250-3
- GHS-H sentences: EUH210
- Tariff number: 3204 19 00 90
- Applications: analytical chemistry, indicator of the hardness of water.

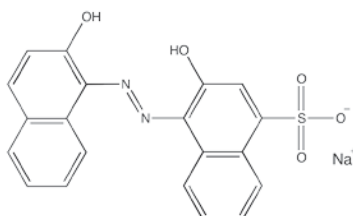
**Specifications:**

composition of 100 ml:  
 eriochrome black T . . . . .1 g  
 ethanol absolute . . . . .25 ml  
 triethanolamine . . . . .75 ml  
 suitability for complexometry . . . . .passes test

Art. No.	Volume	Container
NE00480100	100 ml	0

## Eriochrome blue-black R, C.I. 15705

## NE0035 Eriochrome blue-black R, C.I. 15705



- Synonyms: 2-Hydroxy-1-(2-hydroxy-1-naphthylazo)-naphthalene-4-sulfonic acid sodium salt
- $C_{20}H_{13}N_2NaO_5S$
- $M = 416,39 \text{ g/mol}$
- CAS [2538-85-4]
- EINECS-No.: 219-810-2
- Solub. in water: (20 °C):  $\sim 20 \text{ g/l}$
- Tariff number: 2927 00 00 90
- Applications: analytical chemistry, indicator (metals).

**Specifications:**

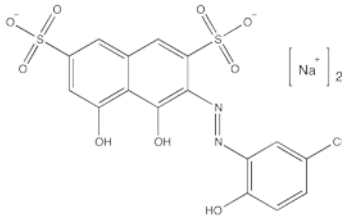
Absorption maximum  $\lambda$  (pH 12,2) . . . . .632 - 636 nm  
 Absorptivity (A1%/1 cm;  $\lambda$  max;  
 0,0015%, pH 12,2 on dried sample) . . . . .200 - 300  
 suitability as indicator for metal  
 titration . . . . .passes test  
 loss on drying (110 °C) . . . . .max. 10 %

Art. No.	Volume	Container
NE00350050	50 g	0

# Erioch

## Eriochrome blue SE, C.I. 16680

### AZ0155 Eriochrome blue SE, C.I. 16680, indicator for metal titration



- Synonyms: 2-(4-Chloro-1-hydroxyphenyl-2-azo)-1,8-dihydroxynaphthalene-3,6-disulfonic acid disodium salt
- $C_{16}H_{10}ClN_2Na_2O_9S_2$
- $M = 518,82 \text{ g/mol}$
- CAS [1058-92-0]
- EINECS-No.: 213-894-4
- Solub. in water: (20 °C): ~ 30 g/l
- LD 50 (oral, rat): 8900 mg/kg
- Tariff number: 3204 19 00 90
- Applications: analytical chemistry, indicator (metals), in biochemistry.

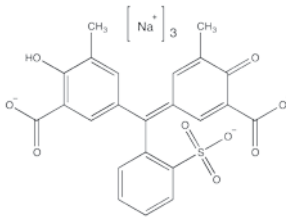
#### Specifications:

Absorption maximum  $\lambda$  (in ethanol) . . . . . 525 - 530 nm  
Absorptivity (A1%/1 cm;  $\lambda$ ,; pH 6,0 on dried sample) . . . . . 200 - 250  
loss on drying (110 °C) . . . . . max. 7 %  
suitability as metal indicator . . . . . passes test

Art. No.	Volume	Container
AZ01550005	5 g	0

## Eriochrome cyanine R, C.I. 43820

### ER0050 Eriochrome cyanine R, C.I. 43820, reagent grade



- $C_{23}H_{15}Na_3O_9S$
- $M = 536,40 \text{ g/mol}$
- CAS [3564-18-9]
- EINECS-No.: 222-641-7
- Solub. in water: (20 °C): ~ 420 g/l
- Tariff number: 3204 19 00 90
- Applications: analytical chemistry, for determination of: aluminium (indicator).

Absorption maximum  $\lambda$  (buffer pH 7,0) . . . 434 - 440 nm  
Absorptivity (A1%/1 cm;  $\lambda$  max.; 0,02 g/l buffer pH 7,0; on dried sample) . . . . . 130 - 200  
suitability for determination of Al . . . . . passes test  
loss on drying (105 °C) . . . . . max. 10 %

Art. No.	Volume	Container
ER00500025	25 g	0
ER00500100	100 g	0

#### Specifications:

identity (IR-spectrum) . . . . . passes test

## Esbach's reagent

### RE0004 Esbach's reagent

- Density: 0,987 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, for determination of: albumin.

#### Specifications:

Suitable for detection of protein.

Art. No.	Volume	Container
RE00040500	500 ml	0

## Ethanol absolute



- Synonyms: Ethyl alcohol, Methylcarbinol, Spirit, Spirit of wine
- $C_2H_5OH$
- $M = 46,07 \text{ g/mol}$
- CAS [64-17-5]
- EINECS-No.: 200-578-6
- Density: 0,79 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -114,5 °C
- Boiling point: 78,3 °C
- Flash pt. 12 °C
- Ignition temp.: 425 °C
- Vapour pressure: (20 °C) 59 hPa
- Dielectric const.: (25 °C) 24,3

- LD 50 (oral, rat): 6200 mg/kg
- EC-Index-No.: 603-002-00-5
- ADR: 3 F1 II UN 1170
- IMDG: 3 II UN 1170
- IATA/ICAO: 3 II UN 1170
- GHS-signal word: Danger
- GHS-H sentences: H225
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2207 10 00 90
- Applications: solvents, disinfectant, for pharmaceuticals synthesizing, synthesis of organic products, perfumery.

### ET0002 Ethanol absolute, synthesis grade

assay (G.C.) (v/v) . . . . . min. 99,9 %  
identity (IR-spectrum) . . . . . passes test  
density (20°/4°) . . . . . 0,789 - 0,790  
residue on evaporation . . . . . max. 0,005 %  
water (v/v) (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
ET00021000	1 l	0
ET00022500	2,5 l	0
ET0002005P	5 l	0
ET0002010C	10 l	0
ET0002025P	25 l	0
ET0002025S	25 l	0

**ET0006 Ethanol absolute, extra pure, Pharpur®, Ph Eur, BP, USP**

assay (G.C.) (v/v)	min. 99,5 %
assay (G.C.) (w/w)	min. 99,2 %
identification	passes test
density (20°/20°)	0,790 - 0,793
appearance	clear and colourless
acidity or alkalinity (as acetic acid)	max. 0,003 %
colour (Hazen)	max. 10
acetaldehyde + acetal (as CH <sub>3</sub> CHO)	max. 0,001 %
benzene (G.C.)	max. 0,0002 %
methanol (G.C.)	max. 0,02 %

total of other impurities (G.C.)	max. 0,03 %
reducing substances	passes test
residue on evaporation	max. 0,001 %
absorbance in a 5,0 cm cell at 240 nm	max. 0,40
between 250 and 260 nm	max. 0,30
between 270 and 340 nm	max. 0,10
Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
ET00061000	1 l	
ET00062500	2,5 l	
ET0006005P	5 l	
ET0006010C	10 l	
ET0006025A	25 l	
ET0006025L	25 l	
ET0006025P	25 l	
ET0006025S	25 l	
ET0006100S	100 l	

**ET0005 Ethanol absolute, reagent grade, ACS, ISO**

assay (G.C.) (v/v)	min. 99,9 %
identity (IR-spectrum)	passes test
density (20°/4°)	0,789 - 0,790
appearance	clear
colour (Hazen)	max. 10
acidity	max. 0,0002 meq/g
solubility in water	passes test
acidity or alkalinity	max. 0,0003 %
chlorides (Cl)	max. 0,00003 %
nitrates (NO <sub>3</sub> )	max. 0,00003 %
phosphates (as PO <sub>4</sub> )	max. 0,00003 %
sulfates (SO <sub>4</sub> )	max. 0,00003 %
aluminium (Al)	max. 0,00005 %
antimony (Sb)	max. 0,00002 %
arsenic (As)	max. 0,00002 %
barium (Ba)	max. 0,00001 %
beryllium (Be)	max. 0,00002 %
bismuth (Bi)	max. 0,00002 %
boron (B)	max. 0,00002 %
cadmium (Cd)	max. 0,00005 %
calcium (Ca)	max. 0,00005 %
chromium (Cr)	max. 0,00002 %
cobalt (Co)	max. 0,00002 %
copper (Cu)	max. 0,00002 %

gallium (Ga)	max. 0,000002 %
gold (Au)	max. 0,000002 %
indium (In)	max. 0,00002 %
iron (Fe)	max. 0,00001 %
lead (Pb)	max. 0,00001 %
lithium (Li)	max. 0,00002 %
magnesium (Mg)	max. 0,00001 %
manganese (Mn)	max. 0,00002 %
molybdenum (Mo)	max. 0,00005 %
nickel (Ni)	max. 0,00002 %
platinum (Pt)	max. 0,00002 %
silver (Ag)	max. 0,00002 %
thallium (Tl)	max. 0,00002 %
tin (Sn)	max. 0,00001 %
titanium (Ti)	max. 0,00002 %
vanadium (V)	max. 0,00002 %
zinc (Zn)	max. 0,00001 %
zirconium (Zr)	max. 0,00002 %
formaldehyde	max. 0,0005 %
furfural	max. 0,00005 %
passes test fusel oil	passes test
acetaldehyde and acetal (G.C.)	max. 0,001 %
acetone (G.C.)	max. 0,001 %
isoamyl alcohol (G.C.)	max. 0,05 %

benzene (G.C.)	max. 0,0002 %
methanol (G.C.)	max. 0,01 %
methylethylketone (G.C.)	max. 0,02 %
2-propanol (G.C.)	max. 0,003 %
higher alcohols (G.C.)	max. 0,01 %
aldehydes (as CH <sub>3</sub> CHO)	max. 0,001 %
carbonyl compounds (as CO)	max. 0,003 %
substances darkened by H <sub>2</sub> SO <sub>4</sub>	passes test
UV spectroscopy	passes test
substances reducing KMnO <sub>4</sub>	passes test
residue on evaporation	max. 0,0005 %
water (v/v) (K.F.)	max. 0,1 %

Art. No.	Volume	Container
ET00051000	1 l	
ET00052500	2,5 l	
ET0005005P	5 l	
ET0005007E	7 l	
ET0005025A	25 l	
ET0005025P	25 l	
ET0005025S	25 l	
ET0005200L	200 l	

**ET0015 Ethanol absolute, Multisolvant® HPLC grade ACS ISO UV-VIS**

assay (G.C.) (v/v)	min. 99,9 %
identity (IR-spectrum)	passes test
density (20°/4°)	0,789 - 0,790
appearance	clear
colour (Hazen)	max. 10
solubility in water	passes test
acidity	max. 0,0002 meq/g
alkalinity	max. 0,0002 meq/g
chlorides (Cl)	max. 0,00003 %
nitrates (NO <sub>3</sub> )	max. 0,00003 %
phosphates (as PO <sub>4</sub> )	max. 0,00003 %
sulfates (SO <sub>4</sub> )	max. 0,00003 %
aluminium (Al)	max. 0,00001 %
antimony (Sb)	max. 0,00002 %
arsenic (As)	max. 0,00002 %
barium (Ba)	max. 0,00001 %
beryllium (Be)	max. 0,00002 %
bismuth (Bi)	max. 0,00002 %
boron (B)	max. 0,00002 %
cadmium (Cd)	max. 0,00001 %
calcium (Ca)	max. 0,00003 %
chromium (Cr)	max. 0,00002 %
cobalt (Co)	max. 0,00002 %
copper (Cu)	max. 0,00002 %
gallium (Ga)	max. 0,00002 %
gold (Au)	max. 0,00002 %
indium (In)	max. 0,00002 %

iron (Fe)	max. 0,00001 %
lead (Pb)	max. 0,00001 %
lithium (Li)	max. 0,00002 %
magnesium (Mg)	max. 0,00001 %
manganese (Mn)	max. 0,00001 %
molybdenum (Mo)	max. 0,00002 %
nickel (Ni)	max. 0,00002 %
platinum (Pt)	max. 0,00002 %
silver (Ag)	max. 0,00002 %
thallium (Tl)	max. 0,00002 %
tin (Sn)	max. 0,00001 %
titanium (Ti)	max. 0,00002 %
vanadium (V)	max. 0,00002 %
zinc (Zn)	max. 0,00001 %
zirconium (Zr)	max. 0,00002 %
formaldehyde	max. 0,0005 %
furfural	max. 0,00005 %
passes test fusel oil	passes test
acetone (G.C.)	max. 0,001 %
benzene (G.C.)	max. 0,0002 %
isoamyl alcohol (G.C.)	max. 0,05 %
methanol (G.C.)	max. 0,01 %
methylethylketone (G.C.)	max. 0,02 %
2-propanol (G.C.)	max. 0,003 %
acetaldehyde and acetal (G.C.)	max. 0,001 %
aldehydes (as CH <sub>3</sub> CHO)	max. 0,001 %
carbonyl compounds (as CO)	max. 0,003 %

higher alcohols (G.C.)	max. 0,01 %
substances reducing KMnO <sub>4</sub>	passes test
substances darkened by H <sub>2</sub> SO <sub>4</sub>	passes test
residue on evaporation	max. 0,0004 %
water (v/v) (K.F.)	max. 0,1 %
liquid chromatography suitability	
absorbance	passes test
min. transmission/max. absorbance in a 1,0 cm cell at wavelength:	T(%) A (AU)
220 nm	55 % 0,260 AU
230 nm	72 % 0,143 AU
245 nm	90 % 0,046 AU
270 nm	98 % 0,009 AU
Microfiltered through membranes of pore diameter 0,22 µm	

Art. No.	Volume	Container
ET00151000	1 l	
ET00152500	2,5 l	
ET00154000	4 l	
ET0015007E	7 l	
ET0015025S	25 l	
ET0015100S	100 l	

**ET0010 Ethanol absolute, gradient HPLC grade**

assay (G.C.) (v/v)	min. 99,9 %
identity (IR-spectrum)	passes test
density (20°/4°)	0,789 - 0,790
acidity	max. 0,0002 meq/g
alkalinity	max. 0,0002 meq/g
residue on evaporation	max. 0,0002 %
water (v/v) (K.F.)	max. 0,1 %

gradient grade (254 nm) maximum background absorbance:0,02 AU maximum peak absorbance:0,002 AU	
min. transmission/max. absorbance in a 1,0 cm cell at wavelength:	T(%) A (AU)
205 nm	20 % 0,699 AU
220 nm	50 % 0,301 AU
245 nm	90 % 0,046 AU
260 nm	98 % 0,009 AU
Microfiltered through membranes of pore diameter 0,22 µm	

Suitable for UPLC.

Art. No.	Volume	Container
ET00101000	1 l	
ET00102500	2,5 l	
ET0010007E	7 l	
ET0010025S	25 l	
ET0010030S	30 l	

# Ethano

## ET0011 Ethanol absolute, molecular biology grade

assay (G.C.) (v/v) . . . . . min. 99,9 %	heavy metals (as Pb) . . . . . max. 0,0001 %
identity (IR-spectrum) . . . . . passes test	water (v/v) (K.F.) . . . . . max. 0,1 %
appearance . . . . . clear and colourless	DNases, RNases, Proteases . . . . . non detected
acidity. . . . . max. 0,0002 meq/g	
alkalinity . . . . . max. 0,0002 meq/g	

Art. No.	Volume	Container
ET00110500	500 ml	
ET00111000	1 l	
ET00112500	2,5 l	

## Ethanol, approx. 96%



- Synonyms: Ethyl alcohol, Methylcarbinol, Spirit, Spirit of wine
- C<sub>2</sub>H<sub>5</sub>OH
- M = 46,07 g/mol
- CAS [64-17-5]
- EINECS-No.: 200-578-6
- Density: 0,81 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -117 °C
- Boiling point: 78 °C
- Flash pt. 9 °C
- Ignition temp.: 425 °C
- Vapour pressure: (20 °C) ~ 59 hPa
- Dielectric const.: (25 °C) 24,3
- LD 50 (oral, rat): 6200 mg/kg (anhydrous substance)
- EC-Index-No.: 603-002-00-5
- ADR: 3 F1 II UN 1170
- IMDG: 3 II UN 1170
- IATA/ICAO: 3 II UN 1170
- GHS-signal word: Danger
- GHS-H sentences: H225
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2207 10 00 90
- Applications: solvents, disinfectant, for pharmaceuticals synthesizing, synthesis of organic products, perfumery.

## ET0003 Ethanol 96% v/v, extra pure, Pharmpur®, Ph Eur, BP

assay (G.C.) (v/v) . . . . . 95,1 - 96,9 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95.
assay (G.C.) (w/w) . . . . . 92,6 - 95,2 %	absorbance in a 5,0 cm cell at 240 nm. . . . max. 0,40
identification . . . . . passes test	between 250 and 260 nm . . . . . max. 0,30
density (20°/20°) . . . . . 0,805 - 0,812	between 270 and 340 nm . . . . . max. 0,10
appearance . . . . . clear and colourless	
colour (Hazen) . . . . . max. 10	
acidity (as CH <sub>3</sub> COOH) . . . . . max. 0,003 %	
residue on evaporation . . . . . max. 0,001 %	

Art. No.	Volume	Container
ET00031000	1 l	
ET00032500	2,5 l	
ET0003005P	5 l	
ET0003007E	7 l	
ET0003010C	10 l	
ET0003025A	25 l	
ET0003025P	25 l	
ET0003025S	25 l	

## ET0004 Ethanol 96% v/v, reagent grade, ACS, Reag. Ph Eur

assay (G.C.) (v/v) . . . . . 95,1 - 96,9 %	copper (Cu) . . . . . max. 0,000002 %
identity (IR-spectrum) . . . . . passes test	gallium (Ga) . . . . . max. 0,000002 %
density (20°/4°) . . . . . 0,804 - 0,807	gold (Au) . . . . . max. 0,000002 %
appearance . . . . . clear	indium (In) . . . . . max. 0,000002 %
colour (Hazen) . . . . . max. 10	iron (Fe) . . . . . max. 0,00001 %
solubility in water . . . . . passes test	lead (Pb) . . . . . max. 0,00001 %
acidity. . . . . max. 0,0002 meq/g	lithium (Li) . . . . . max. 0,000002 %
alkalinity . . . . . max. 0,0002 meq/g	magnesium (Mg) . . . . . max. 0,00001 %
chlorides (Cl) . . . . . max. 0,00003 %	manganese (Mn) . . . . . max. 0,000002 %
nitrates (NO <sub>3</sub> ) . . . . . max. 0,00003 %	molybdenum (Mo) . . . . . max. 0,000002 %
phosphates (as PO <sub>4</sub> ) . . . . . max. 0,00003 %	nickel (Ni) . . . . . max. 0,000002 %
sulfates (SO <sub>4</sub> ) . . . . . max. 0,00003 %	platinum (Pt) . . . . . max. 0,000002 %
aluminium (Al) . . . . . max. 0,00005 %	silver (Ag) . . . . . max. 0,000002 %
antimony (Sb) . . . . . max. 0,000002 %	thallium (Tl) . . . . . max. 0,000002 %
arsenic (As) . . . . . max. 0,000002 %	tin (Sn) . . . . . max. 0,00001 %
barium (Ba) . . . . . max. 0,00001 %	vanadium (V) . . . . . max. 0,000002 %
beryllium (Be) . . . . . max. 0,000002 %	zinc (Zn) . . . . . max. 0,00001 %
bismuth (Bi) . . . . . max. 0,000002 %	zirconium (Zr) . . . . . max. 0,000002 %
boron (B) . . . . . max. 0,000002 %	formaldehyde . . . . . max. 0,0005 %
cadmium (Cd) . . . . . max. 0,000005 %	furfural . . . . . passes test
calcium (Ca) . . . . . max. 0,00005 %	fusel oil . . . . . passes test
chromium (Cr) . . . . . max. 0,000002 %	acetaldehyde and acetal (G.C.) . . . . . max. 0,001 %
cobalt (Co) . . . . . max. 0,000002 %	acetone (G.C.) . . . . . max. 0,001 %

benzene (G.C.) . . . . . max. 0,0002 %
isoamyl alcohol (G.C.) . . . . . max. 0,05 %
methanol (G.C.) . . . . . max. 0,01 %
methylethylketone (G.C.) . . . . . max. 0,02 %
2-propanol (G.C.) . . . . . max. 0,003 %
aldehydes (as CH <sub>3</sub> CHO) . . . . . max. 0,001 %
carbonyl compounds (as CO) . . . . . max. 0,003 %
higher alcohols (G.C.) . . . . . max. 0,01 %
substances darkened by H <sub>2</sub> SO <sub>4</sub> . . . . . passes test
substances reducing KMnO <sub>4</sub> . . . . . passes test
residue on evaporation . . . . . max. 0,0005 %
water (v/v) (K.F.) . . . . . 3,1 - 4,9 %

Art. No.	Volume	Container
ET00041000	1 l	
ET00042500	2,5 l	
ET0004005P	5 l	
ET0004007E	7 l	
ET0004025A	25 l	
ET0004025P	25 l	
ET0004025S	25 l	

## ET0013 Ethanol 96% v/v, Multisolvant® HPLC grade ACS UV-VIS

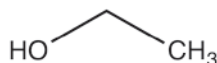


assay (G.C.) (v/v) . . . . .	95,1 - 96,9 %	iron (Fe) . . . . .	max. 0,000002 %	carbonyl compounds (as CO) . . . . .	max. 0,003 %
identity (IR-spectrum) . . . . .	passes test	lead (Pb) . . . . .	max. 0,00001 %	higher alcohols (G.C.) . . . . .	max. 0,01 %
density (20°/4°) . . . . .	0,804 - 0,807	lithium (Li) . . . . .	max. 0,000002 %	substances reducing KMnO <sub>4</sub> . . . . .	passes test
appearance . . . . .	clear	magnesium (Mg) . . . . .	max. 0,00001 %	substances darkened by H <sub>2</sub> SO <sub>4</sub> . . . . .	passes test
colour (Hazen) . . . . .	max. 10	manganese (Mn) . . . . .	max. 0,000002 %	residue on evaporation . . . . .	max. 0,0002 %
acidity . . . . .	max. 0,0002 meq/g	molybdenum (Mo) . . . . .	max. 0,000002 %	water (v/v) (K.F.) . . . . .	3,1- 4,9 %
alkalinity . . . . .	max. 0,0002 meq/g	nickel (Ni) . . . . .	max. 0,000002 %	liquid chromatography suitability	
chlorides (Cl) . . . . .	max. 0,00003 %	platinum (Pt) . . . . .	max. 0,000002 %	absorbance . . . . .	passes test
nitrates (NO <sub>3</sub> ) . . . . .	max. 0,00003 %	silver (Ag) . . . . .	max. 0,000002 %	min. transmission/max. absorbance in a 1,0 cm cell at	
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,00003 %	thallium (Tl) . . . . .	max. 0,000002 %	wavelength: . . . . .	T(%) A (AU)
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,00003 %	tin (Sn) . . . . .	max. 0,00001 %	210 nm. . . . .	35 % 0,456 AU
aluminium (Al) . . . . .	max. 0,00001 %	titanium (Ti) . . . . .	max. 0,000002 %	220 nm. . . . .	55 % 0,260 AU
antimony (Sb) . . . . .	max. 0,000002 %	vanadium (V) . . . . .	max. 0,000002 %	230 nm. . . . .	72 % 0,143 AU
arsenic (As) . . . . .	max. 0,000002 %	zinc (Zn) . . . . .	max. 0,000001 %	250 nm. . . . .	90 % 0,046 AU
barium (Ba) . . . . .	max. 0,000001 %	zirconium (Zr) . . . . .	max. 0,000002 %	270 nm. . . . .	98 % 0,009 AU
beryllium (Be) . . . . .	max. 0,000002 %	formaldehyde . . . . .	max. 0,0005 %	Microfiltered through membranes of pore diameter	
bismuth (Bi) . . . . .	max. 0,000002 %	furfural . . . . .	passes test	0,22 µm	
boron (B) . . . . .	max. 0,000002 %	fusel oil . . . . .	passes test		
cadmium (Cd) . . . . .	max. 0,000001 %	acetaldehyde and acetal (G.C.) . . . . .	max. 0,001 %		
calcium (Ca) . . . . .	max. 0,00003 %	acetone (G.C.) . . . . .	max. 0,001 %		
chromium (Cr) . . . . .	max. 0,000002 %	benzene (G.C.) . . . . .	max. 0,002 %		
cobalt (Co) . . . . .	max. 0,000002 %	isoamyl alcohol (G.C.) . . . . .	max. 0,05 %		
copper (Cu) . . . . .	max. 0,000002 %	methanol (G.C.) . . . . .	max. 0,01 %		
gallium (Ga) . . . . .	max. 0,000002 %	methylethylketone (G.C.) . . . . .	max. 0,002 %		
gold (Au) . . . . .	max. 0,000002 %	2-propanol (G.C.) . . . . .	max. 0,003 %		
indium (In) . . . . .	max. 0,000002 %	aldehydes (as CH <sub>3</sub> CHO) . . . . .	max. 0,001 %		

Art. No.	Volume	Container
ET00131000	1 l	
ET00132500	2,5 l	
ET0013007E	7 l	
ET0013025S	25 l	

## Ethanol, approx. 70%

## ET0001 Ethanol 70% v/v



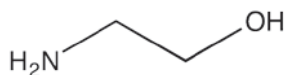
- Synonyms: Ethyl alcohol, Methylcarbinol, Spirit, Spirit of wine
- C<sub>2</sub>H<sub>5</sub>OH
- M = 46,07 g/mol
- CAS [64-17-5]
- EINECS-No.: 200-578-6
- Density: 0,89 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 27 °C
- EC-Index-No.: 603-002-00-5
- ADR: 3 F1 III UN 1170
- IMDG: 3 III UN 1170
- IATA/ICAO: 3 III UN 1170
- GHS-signal word: Warning
- GHS-H sentences: H226
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2208 90 99 11
- Applications: solvents, disinfectant, for pharmaceuticals synthesizing, synthesis of organic products, perfumery.

## Specifications:

assay (in volum) . . . . .	68 - 72 %
solubility in water . . . . .	passes test
acidity . . . . .	max. 0,0005 meq/g
alkalinity . . . . .	max. 0,0005 meq/g
2-propanol, ketones . . . . .	passes test
methanol . . . . .	passes test
aldehydes (as CH <sub>3</sub> CHO) . . . . .	max. 0,005 %
fusel oil . . . . .	passes test
substances reducing KMnO <sub>4</sub> . . . . .	passes test
substances darkened by H <sub>2</sub> SO <sub>4</sub> . . . . .	passes test
residue on evaporation . . . . .	max. 0,001 %
water (v/v) (K.F.) . . . . .	28 - 32 %

Art. No.	Volume	Container
ET0001005P	5 l	
ET0001025P	25 l	

## Ethanolamine



- Synonyms: 2-Aminoethanol, 2-Hydroxyethylamine, Monoethanolamine
- C<sub>2</sub>H<sub>7</sub>NO
- M = 61,08 g/mol
- CAS [141-43-5]
- EINECS-No.: 205-483-3
- Density: 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 10,5 °C
- Boiling point: 171 °C
- Flash pt. 93 °C
- Ignition temp.: 410 °C
- Vapour pressure: (20 °C) 0,5 hPa
- Refraction index: (n 20 °C/D) 1,4539

- LD 50 (oral, rat): 1720 mg/kg
- EC-Index-No.: 603-030-00-8
- ADR: 8 C7 III UN 2491
- IMDG: 8 III UN 2491
- IATA/ICAO: 8 III UN 2491
- GHS-signal word: Danger
- GHS-H sentences: H314 - H302 - H312 - H332
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2922 11 00 00
- Applications: analytical chemistry, synthesis of organic products, for pharmaceuticals synthesizing, emulsifier.
- Appearance: Clear liquid

## ET0027 Ethanolamine, synthesis grade



assay (G.C.) . . . . .	min. 98 %	water (K.F.) . . . . .	max. 0,3 %
identity (IR-spectrum) . . . . .	passes test		
density (20°/4°) . . . . .	1,016 - 1,019		
residue on ignition . . . . .	max. 0,01 %		

Art. No.	Volume	Container
ET00271000	1 l	
ET00272500	2,5 l	

# Ethano

## ET0028 Ethanolamine, reagent grade, ACS

assay (G.C.)	min. 99,5 %
identity (IR-spectrum)	passes test
density (20°/4°)	1,014 - 1,016
colour (Hazen)	max. 15
aluminium (Al)	max. 0,00005 %
boron (B)	max. 0,000002 %
barium (Ba)	max. 0,00001 %
cadmium (Cd)	max. 0,000005 %
calcium (Ca)	max. 0,00005 %

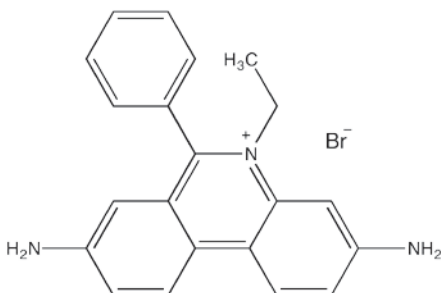
chromium (Cr)	max. 0,000002 %
cobalt (Co)	max. 0,000002 %
copper (Cu)	max. 0,000002 %
heavy metals (as Pb)	max. 0,0005 %
iron (Fe)	max. 0,00001 %
lead (Pb)	max. 0,00001 %
magnesium (Mg)	max. 0,00001 %
manganese (Mn)	max. 0,000002 %
nickel (Ni)	max. 0,000002 %

tin (Sn)	max. 0,00001 %
zinc (Zn)	max. 0,00001 %
diethanolamine (G.C.)	max. 0,1 %
triethanolamine (G.C.)	max. 0,1 %
water (K.F.)	max. 0,2 %

Art. No.	Volume	Container
ET00281000	1 l	

## Ethidium bromide

### ET0108 Ethidium bromide, for biochemical purposes



- Synonyms: 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide, Homidium bromide
- $C_{21}H_{20}BrN_3$
- M = 394,32 g/mol
- CAS [1239-45-8]
- EINECS-No.: 214-984-6
- Solub. in water: (25 °C): ~ 40 g/l
- Melting point: 261 - 264 °C
- Flash pt. > 100 °C
- LD 50 (oral, rat): 1503 mg/kg
- ADR: 6.1 T2 I UN 2811
- IMDG: 6.1 I UN 2811
- IATA/ICAO: 6.1 I UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H330 - H341 - H302
- GHS-P sentences: P260 - P284 - P310 - P320 - P405 - P501a

- Tariff number: 2933 99 90 90
- Applications: in biochemistry, oxidizing agent.
- Appearance: Dark red solid

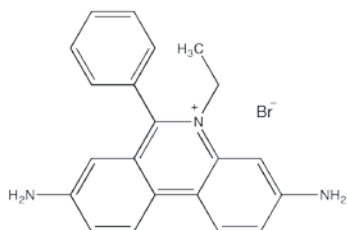
#### Specifications:

assay (titr. with  $HClO_4$ , referred to dried sample) . . . . . min. 98 %  
Absorption maximum  $\lambda$  max (in methanol) 524 - 527 nm Absorptivity (A1%/1 cm;  $\lambda$  max; methanol, 0,0005%, on dried sample) . . . . . 155 - 165  
related substances (TLC) . . . . . passes test  
loss on drying (130 °C, 4 h) . . . . . max. 7 %

Art. No.	Volume	Container
ET01080001	1 g	
ET01080010	10 g	

## Ethidium bromide, solution 10 mg/ml

### ET0109 Ethidium bromide, solution 10 mg/ml



- Synonyms: 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide, Homidium bromide
- $C_{21}H_{20}BrN_3$
- M = 394,32 g/mol
- CAS [1239-45-8]
- EINECS-No.: 214-984-6
- ADR: 6.1 T1 II UN 2810
- IMDG: 6.1 II UN 2810
- IATA/ICAO: 6.1 II UN 2810
- GHS-signal word: Warning
- GHS-H sentences: H341
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a

- Tariff number: 2933 99 90 90
- Applications: for electrophoresis, in biochemistry, for determination of: nucleic acids.

#### Specifications:

Absorption maximum I (in  $H_2O$ ) . . . . . 478 - 482 nm  
Absorptivity (A1%/1 cm;  $\lambda$  max; methanol, on dried sample) . . . . . 140 - 160  
suitability for electrophoresis. . . . . passes test

Art. No.	Volume	Container
ET01090010	10 ml	

## Ethyl acetate

- Synonyms: Acetic acid ethyl ester, Acetic ether
- $C_4H_8O_2$
- M = 88,10 g/mol
- CAS [141-78-6]
- EINECS-No.: 205-500-4
- Density: 0,90 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 85,3 g/l
- Melting point: -83 °C
- Boiling point: 77 °C

- Flash pt. -4 °C
- Ignition temp.: 460 °C
- Vapour pressure: (20 °C) 97hPa
- Refraction index: (n 20 °C/D) 1,3723
- Dielectric const.: (25 °C) 6,0
- LD 50 (oral, rat): 5620 mg/kg
- EC-Index-No.: 607-022-00-5
- ADR: 3 F1 II UN 1173
- IMDG: 3 II UN 1173

- IATA/ICAO: 3 II UN 1173
- GHS-signal word: Danger
- GHS-H sentences: H225 - H319 - EUH066 - H336
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2915 31 00 00
- Applications: solvents, perfumery, photography.

### AC0140 Ethyl acetate, synthesis grade

assay (G.C.)	min. 99,5 %
identity (IR-spectrum)	passes test
density (20°/4°)	0,900 - 0,902
acidity (as $CH_3COOH$ )	max. 0,003 %
residue on evaporation	max. 0,001 %
water (K.F.)	max. 0,05 %

Art. No.	Volume	Container
AC01401000	1 l	
AC01402500	2,5 l	
AC0140005L	5 l	
AC0140005P	5 l	
AC0140007E	7 l	
AC0140025L	25 l	
AC0140025P	25 l	
AC0140025S	25 l	
AC0140030S	30 l	
AC0140200E	200 l	



**AC0143 Ethyl acetate, extra pure, Pharpur®, Ph Eur, BP, NF**

assay (G.C.) . . . . . min. 99,8 %  
 assay (acidimetric) . . . . . 99 - 100,5 %  
 identification . . . . . passes test  
 density (20°/20°) . . . . . 0,898 - 0,902  
 density (25°/25°) . . . . . 0,894 - 0,898  
 refractive index n<sub>20</sub>/D . . . . . 1,370 - 1,373  
 appearance of solution . . . . . clear and colourless  
 acidity . . . . . passes test  
 limit of methyl compounds . . . . . passes test

related substances . . . . . passes test  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,05 %  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.

Art. No.	Volume	Container
AC01431000	1 l	
AC01432500	2,5 l	
AC0143005L	5 l	
AC0143025A	25 l	
AC0143025S	25 l	
AC0143200L	200 l	

**AC0145 Ethyl acetate, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,900 - 0,902  
 density (20°/20°) . . . . . 0,898 - 0,902  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 boiling point . . . . . 76 - 78 °C  
 acidity . . . . . max. 0,0008 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,00002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,00002 %

cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 ethanol (G.C.) . . . . . max. 0,1 %  
 methanol (G.C.) . . . . . max. 0,1 %  
 methyl acetate (G.C.) . . . . . max. 0,1 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %

water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
AC01451000	1 l	
AC01452500	2,5 l	
AC0145005L	5 l	
AC0145005P	5 l	
AC0145007E	7 l	
AC0145025S	25 l	

**AC0155 Ethyl acetate, Multisolvant® HPLC grade ACS ISO UV-VIS**

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,900 - 0,902  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity or alkalinity . . . . . max. 0,0002 meq/g  
 aluminium (Al) . . . . . max. 0,00001 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000001 %  
 calcium (Ca) . . . . . max. 0,00003 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,000002 %  
 lead (Pb) . . . . . max. 0,00001 %

magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000001 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,000001 %  
 ethanol (G.C.) . . . . . max. 0,1 %  
 methanol (G.C.) . . . . . max. 0,1 %  
 methyl acetate (G.C.) . . . . . max. 0,1 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,002 %  
 water (K.F.) . . . . . max. 0,03 %  
 liquid chromatography suitability  
 absorbance . . . . . passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 255 nm . . . . . 20 % 0,699 AU

260 nm . . . . . 50 % 0,301 AU  
 263 nm . . . . . 80 % 0,097 AU  
 265 nm . . . . . 90 % 0,046 AU  
 280 nm . . . . . 98 % 0,009 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
AC01551000	1 l	
AC01552500	2,5 l	
AC01554000	4 l	
AC0155007E	7 l	

**AC0158 Ethyl acetate, LC-MS**

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,900 - 0,902  
 alkalinity . . . . . max. 0,0002 meq/g  
 calcium (Ca) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 potassium (K) . . . . . max. 0,00001 %  
 sodium (Na) . . . . . max. 0,00001 %

residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,03 %  
 suitability for use in LC-MS . . . . . passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 255 nm . . . . . 20 % 0,699 AU  
 258 nm . . . . . 50 % 0,301 AU  
 265 nm . . . . . 90 % 0,046 AU

Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
AC01581000	1 l	
AC01582500	2,5 l	

**AC0148 Ethyl acetate, for GC residue analysis**

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,900 - 0,902  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,02 %  
 Suitable for organohalogenated pesticide and dioxins,  
 furans and PCBs residue analysis. ECD, from 1,2,4-tri-  
 chlorobenzene to decachlorobiphenyl, no peaks are  
 obtained greater than 3 pg/ml as lindane. No peaks  
 are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
AC01481000	1 l	
AC01482500	2,5 l	
AC0148007E	7 l	
AC0148025S	25 l	

**AC0149 Ethyl acetate, GC ultra-trace analysis grade**

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,900 - 0,902  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,02 %

Suitable for organohalogenated pesticide and dioxins,  
 furans and PCBs residue analysis. ECD, from 1,2,4-tri-  
 chlorobenzene to decachlorobiphenyl, no peaks are  
 obtained greater than 3 pg/ml as lindane. No peaks  
 are obtained in vicinity of 2,4,5-trichlorobiphenyl. Suita-  
 ble for highly volatile halogenated hydrocarbons trace  
 analysis. ECD, from dichloromethane to 1,2,4-trichlo-  
 robenzene, no peaks are obtained greater than 1 ng/  
 ml as tetrachloromethane.

Suitable for pesticide and polycyclic aromatic  
 hydrocarbons residue analysis. FID, from 1-octanol  
 to 1-tetradecanol, no peaks are obtained greater than  
 5 ng/ml as 1-tetradecanol. No peaks are obtained in  
 vicinity of pyrene.

Art. No.	Volume	Container
AC01491000	1 l	
AC01492500	2,5 l	

# Ethyla

## AC0144 Ethyl acetate, 99,8%, anhydrous (max. 0,005% H<sub>2</sub>O)



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,900 - 0,902  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0008 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %

chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 ethanol (G.C.) . . . . . max. 0,1 %

methanol (G.C.) . . . . . max. 0,1 %  
 methyl acetate (G.C.) . . . . . max. 0,01 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
AC01440100	100 ml	
AC01440500	500 ml	
AC01441000	1 l	

## AC0141 Ethyl acetate, 99,8%, anhydrous (max. 0,005% H<sub>2</sub>O), with molecular sieves



assay (G.C.) . . . . . min. 99,8 %  
 identification . . . . . passes test  
 density (20°/20°) . . . . . 0,898 - 0,902  
 acidity . . . . . passes test  
 copper (Cu) . . . . . max. 0,00002 %  
 heavy metals (as Pb) . . . . . max. 0,0001 %

iron (Fe) . . . . . max. 0,00005 %  
 lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 ethanol (G.C.) . . . . . max. 0,1 %  
 methanol (G.C.) . . . . . max. 0,1 %  
 methyl acetate (G.C.) . . . . . max. 0,01 %

substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
AC01411000	1 l	

## Ethyl acetoacetate

### AC0287 Ethyl acetoacetate, synthesis grade



- Synonyms: EAA, Acetoacetic acid ethyl ester
- C<sub>6</sub>H<sub>10</sub>O<sub>3</sub>
- M = 130,14 g/mol
- CAS [141-97-9]
- EINECS-No.: 205-516-1
- Density: 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 125 g/l
- Melting point: -40 °C
- Boiling point: (26,6 hPa) 81,8 - 86,4 °C
- Flash pt. 65 °C
- Ignition temp.: 295 °C

- Vapour pressure: (20 °C) 1 hPa
- Refraction index: (n 20 °C/D) 1,4190
- LD 50 (oral, rat): 3980 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2918 30 00 90
- Applications: synthesis of organic products, for decolourization of liquids.

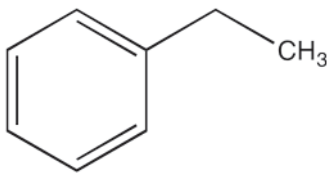
#### Specifications:

assay (G.C.) . . . . . min. 98 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,028 - 1,030  
 residue on ignition . . . . . max. 0,01 %  
 water (K.F.) . . . . . max. 0,2 %

Art. No.	Volume	Container
AC02871000	1 l	
AC0287005P	5 l	

## Ethyl benzene

### ET0110 Ethyl benzene, reagent grade



- Synonyms: Ethylbenzene
- C<sub>8</sub>H<sub>10</sub>
- M = 106,17 g/mol
- CAS [100-41-4]
- EINECS-No.: 202-849-4
- Density: 0,87 g/cm<sup>3</sup>
- Solub. in water: (20 °C): sparingly miscible
- Melting point: -95 °C
- Boiling point: 136 °C
- Flash pt. 15 °C
- Ignition temp.: 430 °C
- Vapour pressure: (20 °C) 4,9 hPa
- Dielectric const.: (30 °C) 2,3
- LD 50 (oral, rat): 3500 mg/kg
- EC-Index-No.: 601-023-00-4
- ADR: 3 F1 II UN 1175
- IMDG: 3 II UN 1175
- IATA/ICAO: 3 II UN 1175
- GHS-signal word: Danger
- GHS-H sentences: H225 - H332
- GHS-P sentences: P210 - P241 - P261 - P280 - P303 + P361 + P353 - P501a
- Tariff number: 2902 60 00 00
- Applications: analytical chemistry, chromatography, solvents.

#### Specifications:

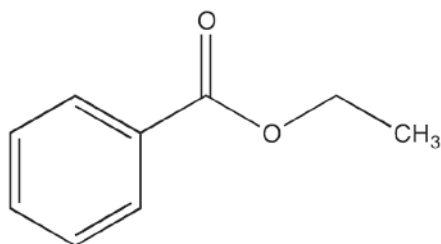
assay (G.C.) . . . . . min. 99,5 %

identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,866 - 0,867  
 acidity . . . . . max. 0,0003 meq/g  
 alkalinity . . . . . max. 0,0003 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000001 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 sulfur compounds (as S) . . . . . max. 0,003 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,03 %

Art. No.	Volume	Container
ET01101000	1 l	

## Ethyl benzoate

## BE0195 Ethyl benzoate, extra pure, Reag. Ph Eur



- Synonyms: Benzoic acid ethyl ester
- $C_9H_{10}O_2$
- M = 150,18 g/mol
- CAS [93-89-0]
- EINECS-No.: 202-284-3
- Density: 1,05 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,5 g/l
- Melting point: -35 °C
- Boiling point: 213 - 215 °C
- Flash pt. 91 °C
- Vapour pressure: (20 °C) 0,24 hPa
- Refraction index: (n 20 °C/D) 1,5057
- LD 50 (oral, rat): 2100 mg/kg
- Tariff number: 2916 31 00 00
- Applications: analytical chemistry, synthesis of organic products, perfumery.

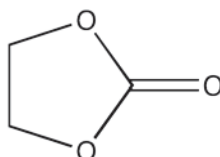
## Specifications:

assay (G.C.)	min. 99 %
identity (IR-spectrum)	passes test
density (20°/4°)	1,046 - 1,047
refractive index n <sub>20</sub> /D	1,504 - 1,506
free acid (as C <sub>6</sub> H <sub>5</sub> COOH)	max. 0,06 %
copper (Cu)	max. 0,00002 %
iron (Fe)	max. 0,00005 %
lead (Pb)	max. 0,00002 %
nickel (Ni)	max. 0,00002 %
ethanol (G.C.)	max. 0,1 %
residue on ignition	max. 0,01 %
water (K.F.)	max. 0,3 %

Art. No.	Volume	Container
BE01950250	250 ml	0
BE01951000	1 l	0

## Ethylene carbonate

## CA0367 Ethylene carbonate, synthesis grade



- Synonyms: 1,3-Dioxolane-2-one, Ethylene glycol carbonate
- $C_3H_4O_3$
- M = 88,06 g/mol
- CAS [96-49-1]
- EINECS-No.: 202-510-0
- Solub. in water: (20 °C): 214 g/l
- Melting point: 35 - 38 °C
- Boiling point: 247 - 249 °C
- Flash pt. 150 °C
- Ignition temp.: 465 °C
- Vapour pressure: (20 °C) 0,21 hPa
- LD 50 (oral, rat): 10000 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H318

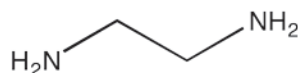
- GHS-P sentences: P280 - P305 + P351 + P338 - P310
- Tariff number: 2920 90 10 90
- Applications: synthesis of organic products, cosmetics, for pharmaceuticals synthesizing.

## Specifications:

assay (G.C.)	min. 99 %
identity (IR-spectrum)	passes test
residue on ignition	max. 0,02 %

Art. No.	Volume	Container
CA03671000	1 kg	0

## Ethylenediamine



- Synonyms: 1,2-Ethanediamine, 1,2-Diaminoethane
- $C_2H_8N_2$
- M = 60,10 g/mol
- CAS [107-15-3]
- EINECS-No.: 203-468-6
- Density: 0,90 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 11 °C
- Boiling point: 116 - 118 °C
- Flash pt. ~ 36 °C
- Ignition temp.: ~ 400 °C
- Vapour pressure: (20 °C) 12 hPa
- Refraction index: (n 20 °C/D) 1,4540
- Dielectric const.: (18 °C) 16

- LD 50 (oral, rat): 76 mg/kg
- EC-Index-No.: 612-006-00-6
- ADR: 8 CF1 II UN 1604
- IMDG: 8 II UN 1604
- IATA/ICAO: 8 II UN 1604
- GHS-signal word: Danger
- GHS-H sentences: H334 - H314 - H226 - H302 - H312 - H317
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2921 21 00 00
- Applications: solvents, emulsifier, in antifreeze compositions, in lubricant compositions, in pharmaceutical industry.

## ET0135 Ethylenediamine, synthesis grade

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,896 - 0,898  
 residue on evaporation . . . . .max. 0,05 %  
 water (K.F.) . . . . .max. 0,5 %

Art. No.	Volume	Container
ET01351000	1 l	0
ET01352500	2,5 l	0
ET0135005P	5 l	0
ET0135025A	25 l	0

## ET0137 Ethylenediamine, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (acidimetric) . . . . .98 - 100,5 %  
 identification . . . . .passes test  
 density (20°/20°) . . . . .0,895 - 0,905  
 appearance of solution . . . . .passes test  
 carbonates . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,01 %  
 ammonium and other bases . . . . .passes test

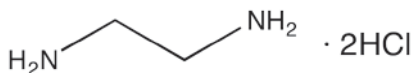
heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %  
 residue on evaporation . . . . .max. 0,3 %  
 water (K.F.) . . . . .max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
ET01370100	100 ml	0
ET01370250	250 ml	0
ET01371000	1 l	0

# Ethyle

## Ethylenediamine dihydrochloride

### ET0145 Ethylenediamine dihydrochloride, extra pure



- Synonyms: 1,2-Diaminoethane dihydrochloride, Ethylenediammonium dichloride
- $C_2H_8N_2 \cdot 2HCl$
- $M = 133,02 \text{ g/mol}$
- CAS [333-18-6]
- EINECS-No.: 206-369-6
- Solub. in water: (20 °C): 300 g/l
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332
- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a
- Tariff number: 2921 21 00 00

- Applications: synthesis of organic products, laboratory reagent, for pharmaceuticals synthesizing, cosmetics.

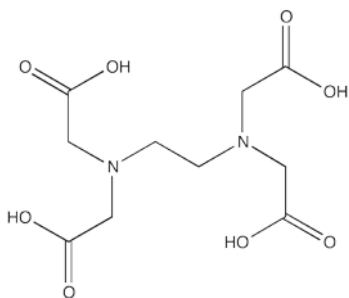
#### Specifications:

assay (argentometric) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 pH (5 %,  $H_2O$ ) .....4 - 5  
 water (K.F.) .....max. 0,05 %

Art. No.	Volume	Container
ET01450250	250 g	Ⓢ
ET01451000	1 kg	Ⓢ

## Ethylenediaminetetraacetic acid, EDTA

### AC0940 Ethylenediaminetetraacetic acid, EDTA, synthesis grade



- Synonyms: Ethylenedinitriolotetraacetic acid, Edetic acid, EDTA
- $C_{10}H_{16}N_2O_8$
- $M = 292,25 \text{ g/mol}$
- CAS [60-00-4]
- EINECS-No.: 200-449-4
- Solub. in water: (20 °C): ~ 0,5 g/l
- Melting point: 220 °C (decomposes)
- Flash pt. > 100 °C
- Ignition temp.: > 200 °C
- Vapour pressure: (20 °C) < 0,013 hPa
- LD 50 (oral, rat): 2580 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2922 49 95 90

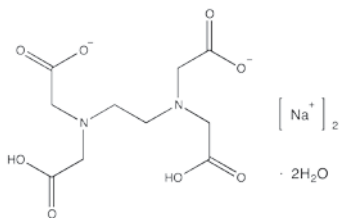
- Applications: analytical chemistry, antioxidant (in food industry), synthesis of organic products, for pharmaceuticals synthesizing.

#### Specifications:

assay (complexometric) .....min. 98 %  
 identity (IR-spectrum) .....passes test  
 residue on ignition .....max. 0,1 %  
 water (K.F.) .....max. 0,5 %

Art. No.	Volume	Container
AC09400100	100 g	Ⓢ
AC09400500	500 g	Ⓢ
AC09401000	1 kg	Ⓢ
AC0940005P	5 kg	Ⓢ

## Ethylenediaminetetraacetic acid, EDTA, disodium salt, dihydrate



- Synonyms: Edetic acid disodium salt, Disodium dihydrogen ethylenediaminetetraacetate
- $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
- $M = 372,24 \text{ g/mol}$
- CAS [6381-92-6]
- EINECS-No.: 205-358-3
- Solub. in water: (20 °C): 100 g/l
- Melting point: 252 °C (decomposes)
- LD 50 (oral, rat): 2000 mg/kg

- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2922 49 95 90
- Applications: analytical chemistry, sequestering agent.

### AC0960 Ethylenediaminetetraacetic acid, EDTA, disodium salt, dihydrate, synthesis grade

assay (complexometric, referred to dried sample) .....min. 98 %  
 pH (5 %,  $H_2O$ ) .....4 - 5  
 chlorides (Cl) .....max. 0,02 %  
 sulfates ( $SO_4$ ) .....max. 0,1 %

heavy metals (as Pb) .....max. 0,005 %  
 iron (Fe) .....max. 0,005 %  
 water (K.F.) .....9 - 10 %

Art. No.	Volume	Container
AC09601000	1 kg	Ⓢ
AC0960005P	5 kg	Ⓢ
AC0960025P	25 kg	Ⓢ

### AC0963 Ethylenediaminetetraacetic acid, EDTA, disodium salt, dihydrate, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (complexometric, referred to dried sample) .....99 - 101 %  
 identification .....passes test  
 appearance of solution .....clear and colourless  
 pH (5 %,  $H_2O$ ) .....4,0 - 5,5  
 calcium (Ca) .....passes test  
 heavy metals (as Pb) .....max. 0,002 %

iron (Fe) .....max. 0,008 %  
 nitrilotriacetic acid  $[(HOCOCH_2)_3N]$  .....max. 0,1 %  
 loss on drying (150°C, 6 h) .....8,7 - 11,4 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC09630250	250 g	Ⓢ
AC09631000	1 kg	Ⓢ
AC0963005P	5 kg	Ⓢ
AC0963025P	25 kg	Ⓢ

### AC0968 Ethylenediaminetetraacetic acid, EDTA, disodium salt, dihydrate, powder, Pharmpur®, Ph Eur, USP, GMP, suitable for use as excipient

assay (complexometric, on dried sample) .....98,5 - 101 %  
 identification .....passes test  
 appearance of solution .....clear and colourless  
 pH (5 %,  $H_2O$ ) .....4,0 - 6,0  
 calcium (Ca) .....passes test  
 heavy metals (as Pb) .....max. 0,005 %

iron (Fe) .....max. 0,008 %  
 nitrilotriacetic acid  $[(HOCOCH_2)_3N]$  .....max. 0,1 %  
 loss on drying (150°C, 6 h) .....8,7 - 11,4 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
 Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
AC09681000	1 kg	Ⓢ
AC0968025P	25 kg	Ⓢ

**AC0965 Ethylenediaminetetraacetic acid, EDTA, disodium salt, dihydrate, reagent grade, ACS, Reag. Ph Eur**

assay (complexometric, referred to dried sample) . . . . . 99,4 - 100,6 %  
 identity . . . . . passes test  
 insoluble in water . . . . . max. 0,003 %  
 appearance . . . . . white, crystalline powder  
 insoluble in diluted ammonium hydroxidemax. 0,005 %  
 pH (5 %, H<sub>2</sub>O, 20 °C) . . . . . 4,0 - 5,0  
 chlorides (Cl) . . . . . max. 0,004 %  
 cyanides (CN) . . . . . max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %

calcium (Ca) . . . . . max. 0,001 %  
 copper (Cu) . . . . . max. 0,0001 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,001 %  
 magnesium (Mg) . . . . . max. 0,0005 %  
 nitrilotriacetic acid [(HOCOCH<sub>2</sub>)<sub>3</sub>N] . . . . . max. 0,05 %  
 loss on drying (150°C, 6 h) . . . . . 8,7 - 11,4 %  
 residue on ignition . . . . . max. 0,2 %

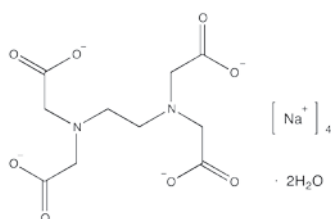
Art. No.	Volume	Container
AC09650100	100 g	
AC09650250	250 g	
AC09650500	500 g	
AC09651000	1 kg	
AC0965005P	5 kg	
AC0965025P	25 kg	

**AC0967 Ethylenediaminetetraacetic acid, EDTA, disodium salt, dihydrate, molecular biology grade**

assay (complexometric, referred to dried sample) . . . . . min. 99 %  
 absorbance of an aqueous solution  
 0,1 M in a 1 cm cell at 280 nm . . . . . max. 0,2 AU  
 absorbance of an aqueous solution  
 0,1 M in a 1 cm cell at 260 nm . . . . . max. 0,2 AU

0,1 M in a 1 cm cell at 280 nm . . . . . max. 0,02 AU  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 loss on drying (150 °C) . . . . . 9,0 - 10,0 %  
 DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
AC09670100	100 g	
AC09671000	1 kg	

**Ethylenediaminetetraacetic acid, EDTA, tetrasodium salt, dihydrate****AC0975 Ethylenediaminetetraacetic acid, EDTA, tetrasodium salt, dihydrate, synthesis grade**

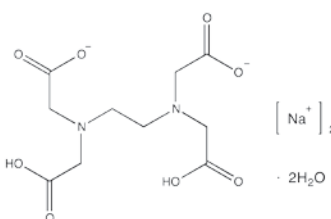
- Synonyms: Edetic acid tetrasodium salt, Tetrasodium ethylenediaminetetraacetate
- C<sub>10</sub>H<sub>12</sub>N<sub>2</sub>Na<sub>4</sub>O<sub>8</sub>·2H<sub>2</sub>O
- M = 416,21 g/mol
- CAS [10378-23-1]
- EINECS-No.: 200-573-9
- Solub. in water: (20 °C): soluble
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2922 49 95 90

- Applications: synthesis of organic products, analytical chemistry, titrant in volumetric analysis.

**Specifications:**

assay (complexometric, referred to dried sample) . . . . . min. 98 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 10,5 - 12  
 water (K.F.) . . . . . 7 - 10 %

Art. No.	Volume	Container
AC09750500	500 g	
AC09751000	1 kg	

**Ethylenediaminetetraacetic acid, EDTA, disodium salt, volumetric solutions****AC0970 Ethylenediaminetetraacetic acid, EDTA, disodium salt, solution 0,1 mol/l (0,2 N)**

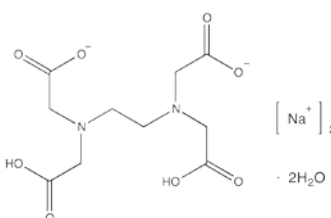
- C<sub>10</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>8</sub>·2H<sub>2</sub>O
- M = 372,24 g/mol
- CAS [6381-92-6]
- EINECS-No.: 205-358-3
- Density: 1,01 g/cm<sup>3</sup>
- LD 50 (oral, rat): 2000 mg/kg (EDTA disodium salt)
- GHS-H sentences: EUH210
- Tariff number: 2922 49 95 90
- Applications: analytical chemistry, sequestering agent, for metals titration.

1 ml = 0,03362 g [CH<sub>2</sub>N(CH<sub>2</sub>COOH)CH<sub>2</sub>COONa]<sub>2</sub>  
 1 ml = 0,03722 g [CH<sub>2</sub>N(CH<sub>2</sub>COOH)CH<sub>2</sub>COONa]<sub>2</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001

Art. No.	Volume	Container
AC09701000	1 l	
AC0970005P	5 l	
AC0970010C	10 l	

**AC0972 Ethylenediaminetetraacetic acid, EDTA, disodium salt, solution 0,05 mol/l (0,1 N)**

- C<sub>10</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>8</sub>·2H<sub>2</sub>O
- M = 372,24 g/mol
- CAS [6381-92-6]
- EINECS-No.: 205-358-3
- Density: 1,01 g/cm<sup>3</sup>
- LD 50 (oral, rat): 2000 mg/kg (EDTA disodium salt)
- GHS-H sentences: EUH210
- Tariff number: 2922 49 95 90
- Applications: analytical chemistry, sequestering agent, for metals titration.

1 ml = 0,01681 g [CH<sub>2</sub>N(CH<sub>2</sub>COOH)CH<sub>2</sub>COONa]<sub>2</sub>  
 1 ml = 0,01861 g [CH<sub>2</sub>N(CH<sub>2</sub>COOH)CH<sub>2</sub>COONa]<sub>2</sub>

This volumetric solution was checked by means of potentiometric methods using Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

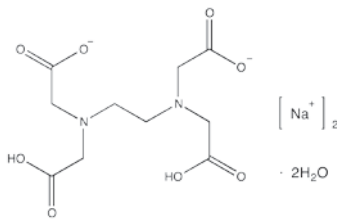
**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001

Art. No.	Volume	Container
AC09721000	1 l	
AC0972010C	10 l	

# Ethyle

## AC0974 Ethylenediaminetetraacetic acid, EDTA, disodium salt, solution 0,025 mol/l (0,05 N)



- $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
- $M = 372,24 \text{ g/mol}$
- CAS [6381-92-6]
- EINECS-No.: 205-358-3
- Density: 0,998  $\text{g/cm}^3$
- LD 50 (oral, rat): 2000 mg/kg (EDTA disodium salt)
- Tariff number: 2922 49 95 90
- Applications: analytical chemistry, sequestering agent, for metals titration.

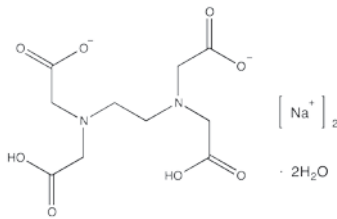
1 ml = 0,008405 g  $[CH_2N(CH_2COOH)CH_2COONa]_2$   
1 ml = 0,009305 g  $[CH_2N(CH_2COOH)CH_2COONa]_2 \cdot 2H_2O$

This volumetric solution was checked by means of potentiometric methods using Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty  $\pm 0,001$

Art. No.	Volume	Container
AC09741000	1 l	

## AC0973 Ethylenediaminetetraacetic acid, EDTA, disodium salt, solution 0,02 mol/l (0,04 N)



- $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
- $M = 372,24 \text{ g/mol}$
- CAS [6381-92-6]
- EINECS-No.: 205-358-3
- Density: 0,99  $\text{g/cm}^3$
- LD 50 (oral, rat): 2000 mg/kg (EDTA disodium salt)
- Tariff number: 2922 49 95 90
- Applications: analytical chemistry, sequestering agent, for metals titration.

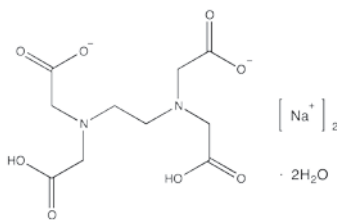
1 ml = 0,006724 g  $[CH_2N(CH_2COOH)CH_2COONa]_2$   
1 ml = 0,007444 g  $[CH_2N(CH_2COOH)CH_2COONa]_2$

This volumetric solution was checked by means of potentiometric methods using Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty  $\pm 0,001$

Art. No.	Volume	Container
AC09731000	1 l	

## AC0971 Ethylenediaminetetraacetic acid, EDTA, disodium salt, solution 0,01 mol/l (0,02 N)



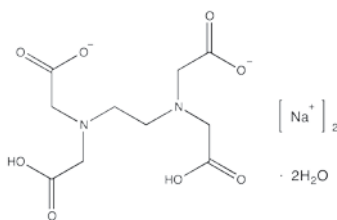
- $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
- $M = 372,24 \text{ g/mol}$
- CAS [6381-92-6]
- EINECS-No.: 205-358-3
- Density: 0,996  $\text{g/cm}^3$
- Tariff number: 2922 49 95 90
- Applications: analytical chemistry, sequestering agent, for metals titration.

This volumetric solution was checked by means of potentiometric methods using a zinc sulfate standard solution, that was also checked against Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty  $\pm 0,001$   
1 ml = 0,003362 g  $[CH_2N(CH_2COOH)CH_2COONa]_2$   
1 ml = 0,003722 g  $[CH_2N(CH_2COOH)CH_2COONa]_2$

Art. No.	Volume	Container
AC09711000	1 l	
AC0971005P	5 l	
AC0971010C	10 l	

## AC0996 Ethylenediaminetetraacetic acid, EDTA, disodium salt, concentrated solution to prepare 1 l of solution 0,1 mol/l (0,2N)

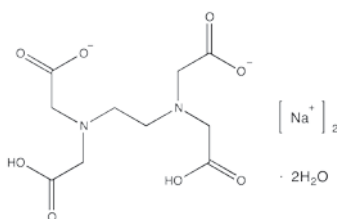


- $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
- $M = 372,24 \text{ g/mol}$
- CAS [6381-92-6]
- EINECS-No.: 205-358-3
- Density: ~ 1,14  $\text{g/cm}^3$
- Solub. in water: (20 °C): miscible
- GHS-H sentences: EUH210
- Tariff number: 2922 49 95 90
- Applications: analytical chemistry, sequestering agent, for metals titration.

**Specifications:**  
amount of substance:  
33,620 g  
 $[CH_2N(CH_2COOH)CH_2COONa]_2$   
37,224 g  
 $[CH_2N(CH_2COOH)CH_2COONa]_2$   
concentrated solution . . . . . 1 mol/l  $\pm 0,1 \%$

Art. No.	Volume	Container
AC099600PA	u.	

## AC0966 Ethylenediaminetetraacetic acid, EDTA, disodium salt, concentrated solution to prepare 1 l of solution 0,01 mol/l (0,02N)

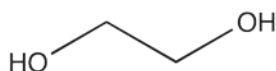


- $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
- $M = 372,24 \text{ g/mol}$
- CAS [6381-92-6]
- EINECS-No.: 205-358-3
- Density: ~ 1,14  $\text{g/cm}^3$
- Solub. in water: (20 °C): miscible
- GHS-H sentences: EUH210
- Tariff number: 2922 49 95 90
- Applications: analytical chemistry, sequestering agent, for metals titration.

**Specifications:**  
amount of substance:  
3,362 g  
 $[CH_2N(CH_2COOH)CH_2COONa]_2$   
3,722 g  
 $[CH_2N(CH_2COOH)CH_2COONa]_2$   
concentrated solution . . . . . 0,1 mol/l  $\pm 0,1 \%$

Art. No.	Volume	Container
AC096600PA	u.	

## Ethylene glycol



- Synonyms: 1,2-Ethanediol, Glycol
- $C_2H_6O_2$
- M = 62,07 g/mol
- CAS [107-21-1]
- EINECS-No.: 203-473-3
- Density: 1,11 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 1000 g/l miscible
- Melting point: -13 °C
- Boiling point: (1013 hPa) 197 °C
- Flash pt. 111 °C
- Ignition temp.: 410 °C

- Vapour pressure: (20 °C) 0,053 hPa
- Dielectric const.: (25 °C) 37,7
- LD 50 (oral, rat): 4700 mg/kg
- EC-Index-No.: 603-027-00-1
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2905 31 00 00
- Applications: analytical chemistry, solvents (in bio-chemistry), synthesis of organic products.

## ET0164 Ethylene glycol, extra pure, packed in HDPE bottles

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 1,113 - 1,115  
 free acid (as CH<sub>3</sub>COOH) . . . . . max. 0,001 %  
 chlorides (Cl) . . . . . max. 0,002 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %

copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00005 %  
 lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 diethyleneglycol (G.C.) . . . . . max. 0,1 %  
 water (K.F.) . . . . . max. 0,2 %

Art. No.	Volume	Container
ET01641000	1 l	Ø
ET01642500	2,5 l	Ø
ET0164005P	5 l	Ø
ET0164025P	25 l	Ø

## ET0166 Ethylene glycol, reagent grade, Reag. Ph Eur

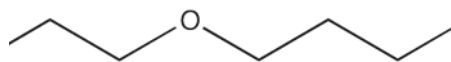
assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 1,113 - 1,115  
 refractive index n<sub>20</sub>/D . . . . . 1,431 - 1,433  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,00002 %

iron (Fe) . . . . . max. 0,00005 %  
 formaldehyde . . . . . max. 0,005 %  
 substances reducing KMnO<sub>4</sub> . . . . . passes test  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on ignition . . . . . max. 0,005 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
ET01661000	1 l	Ø
ET01662500	2,5 l	Ø
ET0166005P	5 l	Ø
ET0166025P	25 l	Ø

## Ethylene glycol monobutyl ether

## ET0175 Ethylene glycol monobutyl ether, synthesis grade



- Synonyms: 2-Butoxyethanol, Butyl glycol
- $C_6H_{14}O_2$
- M = 118,18 g/mol
- CAS [111-76-2]
- EINECS-No.: 203-905-0
- Density: 0,9 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -70 °C
- Boiling point: 170 - 172 °C
- Flash pt. 63 - 64 °C
- Ignition temp.: 230 °C
- Vapour pressure: (20 °C) 0,8 hPa
- Refraction index: (n<sub>20</sub> °C/D) 1,4193
- Dielectric const.: (20 °C) 9,4
- LD 50 (oral, rat): 1480 mg/kg
- EC-Index-No.: 603-014-00-0
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332 - H315 - H319

- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P322 - P501a
- Tariff number: 2909 43 00 00
- Applications: synthesis of organic products, solvents, manufacture of dyes, plasticizer, insecticide.

## Specifications:

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,900 - 0,901  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,005 %  
 water (K.F.) . . . . . max. 0,2 %  
 residue on ignition . . . . . max. 0,01 %

Art. No.	Volume	Container
ET01751000	1 l	Ø

## Ethylene glycol monobutyl ether acetate

## AC0085 Ethylene glycol monobutyl ether acetate, synthesis grade

- Synonyms: 2-Butoxyethyl acetate, 1-Acetoxy-2-butoxyethane, Butyl glycol acetate, Acetic acid 2-butoxyethyl ester
- $C_8H_{16}O_3$
- M = 160,21 g/mol
- CAS [112-07-2]
- EINECS-No.: 203-933-3
- Density: 0,94 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 15 g/l
- Melting point: -64 - -62 °C
- Boiling point: 194 - 196 °C
- Flash pt. 82 °C
- Ignition temp.: 355 °C

- Vapour pressure: (20 °C) 0,31 hPa
- Refraction index: (n<sub>20</sub> °C/D) 1,4138
- Dielectric const.: (20 °C) 6,8
- LD 50 (oral, rat): 2400 mg/kg
- EC-Index-No.: 607-038-00-2
- GHS-signal word: Warning
- GHS-H sentences: H312 - H332
- GHS-P sentences: P261 - P280 - P322 - P304 + P340 - P312 - P501a
- Tariff number: 2915 39 90 90
- Applications: synthesis of organic products, manufacturing of lacquers.

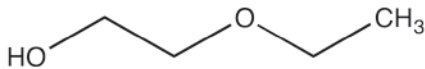
## Specifications:

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,940 - 0,942  
 free acid (as CH<sub>3</sub>COOH) . . . . . max. 0,02 %  
 residue on ignition . . . . . max. 0,01 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
AC00851000	1 l	Ø

# Ethyle

## Ethylene glycol monoethyl ether



- Synonyms: 2-Ethoxyethanol, Ethyl glycol, Ethyl cellosolve
- $C_4H_{10}O_2$
- $M = 90,12 \text{ g/mol}$
- CAS [110-80-5]
- EINECS-No.: 203-804-1
- Density:  $0,93 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point:  $-100 \text{ °C}$
- Boiling point:  $135 \text{ °C}$
- Flash pt.  $\sim 40 \text{ °C}$
- Ignition temp.:  $235 \text{ °C}$
- Vapour pressure: (20 °C)  $\sim 5 \text{ hPa}$
- Refraction index: (n 20 °C/D) 1,4075

- Dielectric const.: (20 °C) 11,9
- LD 50 (oral, rat): 2125 mg/kg
- EC-Index-No.: 603-012-00-X
- ADR: 3 F1 III UN 1171
- IMDG: 3 III UN 1171
- IATA/ICAO: 3 III UN 1171
- GHS-signal word: Danger
- GHS-H sentences: H226 - H302 - H331 - H360FD
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P321 - P405 - P501a
- Tariff number: 2909 44 00 90
- Applications: synthesis of organic products, solvents, manufacturing of synthetic resins, manufacture of dyes.

### ET0180 Ethylene glycol monoethyl ether, synthesis grade



assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,929 - 0,931  
 peroxides (as  $H_2O_2$ ) . . . . .max. 0,005 %  
 residue on evaporation . . . . .max. 0,005 %

water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
ET01801000	1 l	Ø
ET01802500	2,5 l	Ø
ET0180005P	5 l	Ø

### ET0182 Ethylene glycol monoethyl ether, reagent grade, Reag. Ph Eur



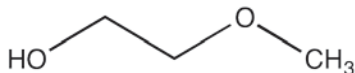
assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,929 - 0,930  
 refractive index  $n_{20/D}$  . . . . .1,405 - 1,407  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,001 meq/g  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %

cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 acetaldehyde ( $CH_3CHO$ ) . . . . .max. 0,001 %

formaldehyde (HCHO) . . . . .max. 0,001 %  
 peroxides (as  $H_2O_2$ ) . . . . .max. 0,0003 %  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
ET01821000	1 l	Ø
ET01822500	2,5 l	Ø

## Ethylene glycol monomethyl ether



- Synonyms: 2-Methoxyethanol, Methyl glycol, Methyl cellosolve
- $C_3H_8O_2$
- $M = 76,10 \text{ g/mol}$
- CAS [109-86-4]
- EINECS-No.: 203-713-7
- Density:  $0,96 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point:  $-85 \text{ °C}$
- Boiling point:  $124,5 \text{ °C}$
- Flash pt.  $38 \text{ °C}$
- Ignition temp.:  $285 \text{ °C}$
- Vapour pressure: (20 °C) 11 hPa
- Refraction index: (n 20 °C/D) 1,4021
- Dielectric const.: (20 °C) 15,4

- LD 50 (oral, rat): 2370 mg/kg
- EC-Index-No.: 603-011-00-4
- ADR: 3 F1 III UN 1188
- IMDG: 3 III UN 1188
- IATA/ICAO: 3 III UN 1188
- GHS-signal word: Danger
- GHS-H sentences: H360FD - H226 - H302 - H312 - H332
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2909 42 00 00
- Applications: analytical chemistry, synthesis of organic products, manufacturing of synthetic resins, manufacture of dyes, for the analysis of: aminoacids.
- Appearance: Clear liquid

### ET0190 Ethylene glycol monomethyl ether, synthesis grade



assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,964 - 0,968  
 peroxides (as  $H_2O_2$ ) . . . . .max. 0,005 %  
 residue on evaporation . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
ET01901000	1 l	Ø
ET01902500	2,5 l	Ø
ET0190005P	5 l	Ø
ET0190025P	25 l	Ø

### ET0192 Ethylene glycol monomethyl ether, reagent grade, ACS



assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,964 - 0,968  
 appearance . . . . .clear  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,001 meq/g  
 alkalinity . . . . .max. 0,0005 meq/g  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %

chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00005 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 aldehydes (as  $CH_3CHO$ ) . . . . .max. 0,003 %  
 formaldehyde . . . . .max. 0,001 %

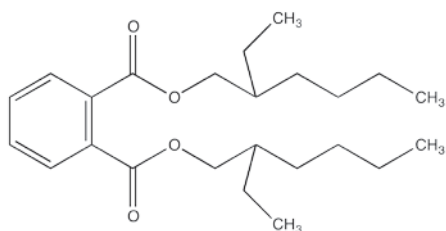
peroxides (as  $H_2O_2$ ) . . . . .max. 0,002 %  
 substances darkened by  $H_2SO_4$  . . . . .passes test  
 residue on evaporation . . . . .max. 0,002 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
ET01921000	1 l	Ø
ET01922500	2,5 l	Ø
ET0192005P	5 l	Ø



## Bis-(2-ethylhexyl) phthalate

## FT0025 Bis-(2-ethylhexyl) phthalate, synthesis grade



- Synonyms: Di-(2-ethylhexyl) phthalate, Dioctyl phthalate, Diisooctyl phthalate, Phthalic acid bis(2-ethylhexyl) ester, DOP
- $C_{24}H_{38}O_4$
- M = 390,57 g/mol
- CAS [117-81-7]
- EINECS-No.: 204-211-0
- Density: 0,98 g/cm<sup>3</sup>
- Solub. in water: (20 °C): < 0,1 g/l
- Melting point: ~ -50 °C
- Boiling point: (5 hPa) 220 - 225 °C
- Flash pt. ~ 200 °C
- Ignition temp.: ~ 400 °C
- Vapour pressure: (20 °C) < 0,01 hPa
- Refraction index: (n 20 °C/D) 1,4862
- LD 50 (oral, rat): 30600 mg/kg
- GHS-signal word: Danger

- GHS-H sentences: H360FD
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2917 34 00 90
- Applications: analytical chemistry, synthesis of organic products.

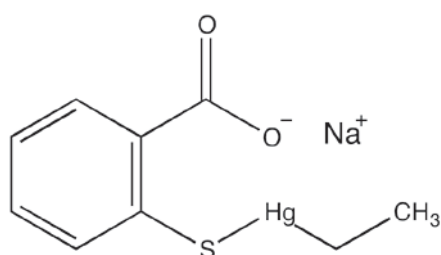
## Specifications:

assay (G.C.) .....min. 98 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....0,983 - 0,985  
 residue on ignition .....max. 0,01 %

Art. No.	Volume	Container
FT00251000	1 l	0

## Ethylmercurithiosalicylic acid, sodium salt

## TI0050 Ethylmercurithiosalicylic acid, sodium salt, synthesis grade



- Synonyms: Thimerosal, Thiomersal, Merthiolate, 2-(Ethylmercury)thiobenzoic acid sodium salt
- $C_9H_9HgNaO_2S$
- M = 404,81 g/mol
- CAS [54-64-8]
- EINECS-No.: 200-210-4
- Solub. in water: (20 °C): soluble
- Melting point: 232 - 233 °C (decomposes)
- LD 50 (oral, rat): 75 mg/kg
- EC-Index-No.: 080-004-00-7
- ADR: 6.1 T5 II UN 2025
- IMDG: 6.1 II UN 2025
- IATA/ICAO: 6.1 II UN 2025
- GHS-signal word: Danger
- GHS-H sentences: H300 - H310 - H330 - H373 - H410

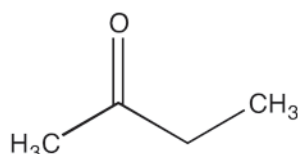
- GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2852 10 00 00
- Applications: synthesis of organic products, for pharmaceuticals synthesizing.

## Specifications:

assay .....min. 97 %  
 mercury ions .....max. 0,7 %

Art. No.	Volume	Container
TI00500025	25 g	0
TI00500100	100 g	0

## Ethyl methyl ketone



- Synonyms: 2-Butanone, Methyl ethyl ketone, MEK
- $C_4H_8O$
- M = 72,11 g/mol
- CAS [78-93-3]
- EINECS-No.: 201-159-0
- Density: 0,80 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 292 g/l
- Melting point: -86 °C
- Boiling point: 79,6 °C
- Flash pt. -4 °C
- Ignition temp.: 505 °C
- Vapour pressure: (20 °C) 105 hPa
- Dielectric const.: (20 °C) 18,5

- LD 50 (oral, rat): 2737 mg/kg
- EC-Index-No.: 606-002-00-3
- ADR: 3 F1 II UN 1193
- IMDG: 3 II UN 1193
- IATA/ICAO: 3 II UN 1193
- GHS-signal word: Danger
- GHS-H sentences: H225 - H319 - EUH066 - H336
- GHS-P sentences: P210 - P241 - P303 + P361 + P533 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2914 12 00 00
- Applications: analytical chemistry, chromatography, synthesis of organic products, in food industry.

## ME0454 Ethyl methyl ketone, synthesis grade



assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....0,804 - 0,846  
 free acid (as  $CH_3COOH$ ) .....max. 0,005 %  
 water (K.F.) .....max. 0,2 %

Art. No.	Volume	Container
ME04541000	1 l	0
ME04542500	2,5 l	0
ME0454005L	5 l	0
ME0454005P	5 l	0
ME0454025L	25 l	0

## ME0457 Ethyl methyl ketone, reagent grade, ACS, Reag. Ph Eur



assay (G.C.) .....min. 99,5 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....0,804 - 0,806  
 density (20°/20°) .....0,805 - 0,807  
 appearance .....clear  
 colour (Hazen) .....max. 10  
 boiling point .....79 - 80 °C  
 acidity .....max. 0,0005 meq/g  
 alkalinity .....max. 0,0002 meq/g  
 aluminium (Al) .....max. 0,00005 %  
 barium (Ba) .....max. 0,00001 %  
 boron (B) .....max. 0,000002 %  
 cadmium (Cd) .....max. 0,000005 %  
 calcium (Ca) .....max. 0,00005 %

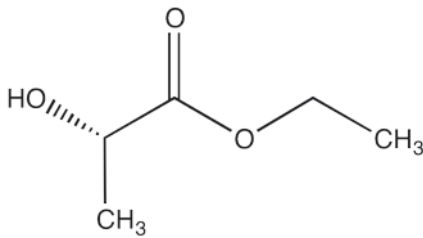
chromium (Cr) .....max. 0,000002 %  
 cobalt (Co) .....max. 0,000002 %  
 copper (Cu) .....max. 0,000002 %  
 iron (Fe) .....max. 0,00001 %  
 lead (Pb) .....max. 0,00001 %  
 magnesium (Mg) .....max. 0,00001 %  
 manganese (Mn) .....max. 0,000002 %  
 nickel (Ni) .....max. 0,000002 %  
 potassium (K) .....max. 0,00001 %  
 strontium (Sr) .....max. 0,000002 %  
 tin (Sn) .....max. 0,00001 %  
 zinc (Zn) .....max. 0,00001 %  
 acetone (G.C.) .....max. 0,05 %  
 2-butanol (G.C.) .....max. 0,05 %

methanol (G.C.) .....max. 0,05 %  
 2-methyl-2-propanol (G.C.) .....max. 0,1 %  
 substances reducing  $KMnO_4$  .....passes test  
 residue on evaporation .....max. 0,0005 %  
 water (K.F.) .....max. 0,05 %

Art. No.	Volume	Container
ME04571000	1 l	0
ME04572500	2,5 l	0
ME0457005L	5 l	0
ME0457025S	25 l	0

# Ethyll

## Ethyl lactate



- Synonyms: L(-)-Lactic acid ethyl ester, (S)-(-)-2-Hydroxypropanoic acid ethyl ester
- $C_5H_{10}O_3$
- $M = 118,14 \text{ g/mol}$
- CAS [687-47-8]
- EINECS-No.: 211-694-1
- Density:  $1,03 \text{ g/cm}^3$
- Solub. in water: (25 °C): miscible
- Melting point: -25 °C
- Boiling point: 154 °C
- Flash pt. 46 °C
- Ignition temp.: 400 °C
- Vapour pressure: (20 °C) 1,6 hPa

- Refraction index: (n 25 °C) 1,411
- LD 50 (oral, rat): > 2000 mg/kg
- EC-Index-No.: 607-129-00-7 [2]
- ADR: 3 F1 III UN 1192
- IMDG: 3 III UN 1192
- IATA/ICAO: 3 III UN 1192
- GHS-signal word: Danger
- GHS-H sentences: H318 - H226 - H335
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2918 11 00 00
- Applications: synthesis of organic products, solvents.
- Appearance: Clear colourless to pale yellow liquid

### LA0045 Ethyl lactate, synthesis grade



assay (G.C.) . . . . .min. 98 %	residue on evaporation . . . . .max. 0,01 %
identity (IR-spectrum) . . . . .passes test	
density (20°/4°) . . . . .1,032 - 1,034	

Art. No.	Volume	Container
LA00451000	1 l	0

### LA0047 Ethyl lactate, reagent grade

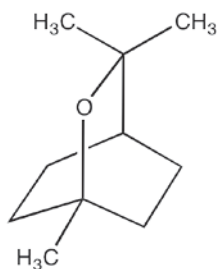


assay (G.C.) . . . . .min. 99 %	calcium (Ca) . . . . .max. 0,00005 %	tin (Sn) . . . . .max. 0,00001 %
identity (IR-spectrum) . . . . .passes test	chromium (Cr) . . . . .max. 0,000002 %	zinc (Zn) . . . . .max. 0,00001 %
density (20°/4°) . . . . .1,032 - 1,034	copper (Cu) . . . . .max. 0,000002 %	substances darkened by $H_2SO_4$ . . . . .passes test
free acid (as lactic acid) . . . . .max. 0,005 %	iron (Fe) . . . . .max. 0,00001 %	residue on evaporation . . . . .max. 0,005%
aluminium (Al) . . . . .max. 0,00005 %	lead (Pb) . . . . .max. 0,00001 %	water (K.F.) . . . . .max. 0,1 %
barium (Ba) . . . . .max. 0,00001 %	magnesium (Mg) . . . . .max. 0,00001 %	
boron (B) . . . . .max. 0,000002 %	manganese (Mn) . . . . .max. 0,000002 %	
cadmium (Cd) . . . . .max. 0,000005 %	nickel (Ni) . . . . .max. 0,000002 %	

Art. No.	Volume	Container
LA00471000	1 l	0

## Eucalyptol

### EU0025 Eucalyptol, synthesis grade



- Synonyms: Cineole, 1,3,3-Trimethyl-2-oxabicyclo(2,2,2)-octane
- $C_{10}H_{18}O$
- $M = 154,3 \text{ g/mol}$
- CAS [470-82-6]
- EINECS-No.: 207-431-5
- Density: 0,922 - 0,927  $\text{g/cm}^3$
- Solub. in water: (20 °C): non-miscible
- Boiling point: 174 - 177 °C
- Flash pt. 49 °C
- LD 50 (oral, rat): 2480 mg/kg
- ADR: 3 F1 III UN 1993
- IMDG: 3 III UN 1993
- IATA/ICAO: 3 III UN 1993
- GHS-signal word: Warning

- GHS-H sentences: H226
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2909 20 00 90
- Applications: analytical chemistry, in food industry, for pharmaceuticals synthesizing.
- Appearance: Colourless to slightly yellow clear liquid

#### Specifications:

assay (G.C.) . . . . .min. 99 %
---------------------------------

Art. No.	Volume	Container
EU00250250	250 ml	0
EU00251000	1 l	0

## Fehling's solution, solution A

## RE0005 Fehling's solution, solution A: copper(II) sulfate, for determination of sugar

- Density: 1,04 g/cm<sup>3</sup>
- ADR: 9 M6 III UN 3082
- IMDG: 9 III UN 3082
- IATA/ICAO: 9 III UN 3082
- GHS-H sentences: H411
- GHS-P sentences: P273 - P391 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for determination of: sugars, in pharma industry.

**Specifications:**  
Suitable for determination of sugar.

Art. No.	Volume	Container
RE00050250	250 ml	0
RE00051000	1 l	0

## Fehling's solution, solution B

## RE0006 Fehling's solution, solution B: potassium sodium tartrate, alkaline, for determination of sugar

- Density: 1,24 g/cm<sup>3</sup>
- ADR: 8 C5 II UN 1719
- IMDG: 8 II UN 1719
- IATA/ICAO: 8 II UN 1719
- GHS-signal word: Danger
- GHS-H sentences: H314

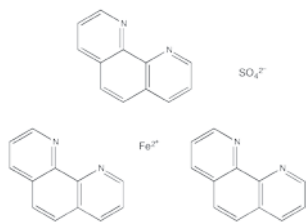
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2918 13 00 90
- Applications: analytical chemistry, laboratory reagent, for determination of: sugars, in pharma industry.
- Appearance: Colourless clear liquid

**Specifications:**  
Suitable for determination of sugar.

Art. No.	Volume	Container
RE00060250	250 ml	0
RE00061000	1 l	0

## Ferroin, solution 0,025 mol/l

## FE0529 Ferroin, solution 0,025 mol/l, redox indicator



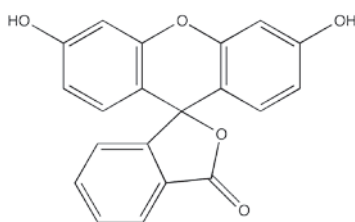
- Synonyms: 1,10-Phenanthroline iron (II) salt, Tris(1,10-phenanthroline) iron (II) sulfate
- C<sub>36</sub>H<sub>24</sub>FeN<sub>6</sub>O<sub>4</sub>S
- M = 692,53 g/mol
- CAS [14634-91-4]
- EINECS-No.: 238-676-6
- Density: 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 613-092-00-8
- GHS-H sentences: H413
- GHS-P sentences: P273 - P501a
- Tariff number: 2933 99 90 90

- Applications: analytical chemistry, indicator, for determination of: metals (i.a.: nickel, silver).

**Specifications:**  
Absorptivity (A 1 %/1 cm; 510 nm; pH= 7,0) . . . . . 260 - 300  
suitability as redox indicator . . . . . passes test

Art. No.	Volume	Container
FE05290100	100 ml	0

## Fluorescein, C.I. 45350



- Synonyms: 3',6'-Dihydroxyspiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one
- C<sub>20</sub>H<sub>12</sub>O<sub>5</sub>
- M = 332,31 g/mol
- CAS [2321-07-5]
- EINECS-No.: 219-031-8
- Solub. in water: (20 °C): insoluble
- Melting point: 320 °C
- GHS-signal word: Warning

- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P338 - P337 + P313
- Tariff number: 3204 90 00 00
- Applications: analytical chemistry, laboratory reagent, indicator, for the detection of: bromine.

## FL0112 Fluorescein, C.I. 45350, synthesis grade

assay . . . . . min. 95 %  
identity (IR-spectrum) . . . . . passes test  
loss on drying (135 °C) . . . . . max. 5 %

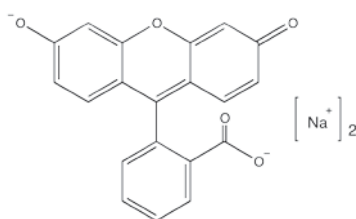
Art. No.	Volume	Container
FL01120100	100 g	0

## FL0113 Fluorescein, C.I. 45350, extra pure

Absorption maximum I (NaOH, 0,1 M) . . 487 - 491 nm  
Absorptivity (A1%/1 cm; λ max.) . . . . . 2200 - 2500  
sensitivity as reagent for bromides . . . . . passes test  
suitability as adsorption indicator . . . . . passes test  
loss on drying (135 °C) . . . . . max. 5 %

Art. No.	Volume	Container
FL01130010	10 g	0
FL01130025	25 g	0

## Fluorescein sodium



- Synonyms: 3',6'-Dihydroxyspiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, Resorcinolphthalein
- C<sub>20</sub>H<sub>10</sub>Na<sub>2</sub>O<sub>5</sub>
- M = 376,28 g/mol
- CAS [518-47-8]
- EINECS-No.: 208-253-0
- Solub. in water: (20 °C): 500 g/l
- Melting point: > 360 °C
- LD 50 (oral, rat): 6721 mg/kg

- GHS-signal word: Warning
- GHS-H sentences: H312 - H332
- GHS-P sentences: P261 - P280 - P322 - P304 + P340 - P312 - P501a
- Tariff number: 3204 90 00 00
- Applications: analytical chemistry, indicator.

# Fluore

## FL0122 Fluorescein sodium, C.I. 45350, pure

assay (on dried sample) . . . . .min. 85 %	copper (Cu) . . . . .max. 0,01 %
identity (IR-spectrum) . . . . .passes test	lead (Pb) . . . . .max. 0,01 %
Absorption maximum I (in H <sub>2</sub> O) . . . . .488 - 491 nm	loss on drying (110 °C) . . . . .max. 10 %
arsenic (As) . . . . .max. 0,005 %	
cadmium (Cd) . . . . .max. 0,05 %	

Art. No.	Volume	Container
FL01220100	100 g	
FL01220250	250 g	
FL01221000	1 kg	

## FL0125 Fluorescein sodium, C.I. 45350, extra pure

assay (titration with HClO <sub>4</sub> ) . . . . .min. 90 %	copper (Cu) . . . . .max. 0,01 %
pH (2 %, H <sub>2</sub> O) . . . . .7,0 - 9,0	lead (Pb) . . . . .max. 0,002 %
Absorption maximum (pH=8,0) . . . . .490 - 492 nm	zinc (Zn) . . . . .max. 0,01 %
Absorptivity (A1%/1 cm; λ max; 0,0005 %, pH 8,0	acriflavine . . . . .passes test
on dried sample) . . . . .1950 - 2150	TLC test . . . . .passes test
arsenic (As) . . . . .max. 0,0002 %	water (K.F.) . . . . .max. 7 %
cadmium (Cd) . . . . .max. 0,001 %	

Art. No.	Volume	Container
FL01250025	25 g	
FL01250100	100 g	
FL01250250	250 g	

## Folin-Ciocalteu phenol reagent

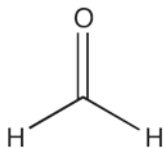
### RE0018 Folin-Ciocalteu, phenol reagent

- Density: ~ 1,24 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313 -
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, reagent for the following substances detection: phenols.
- Appearance: Yellow liquid

**Specifications:**  
suitability for determination of phenol . . . . .passes test

Art. No.	Volume	Container
RE00180250	250 ml	

## Formaldehyde, solution 37%



- Synonyms: Formalin solution, Formol, Methanal solution, Methyl aldehyde solution
- CH<sub>2</sub>O
- M = 30,03 g/mol
- CAS [50-00-0]
- EINECS-No.: 200-001-8
- Density: 1,09 g/cm<sup>3</sup>
- Melting point: < -15 °C
- Boiling point: 93 - 96 °C
- Flash pt. ~ 62 °C
- Ignition temp.: ~ 300 °C (pure substance)
- Vapour pressure: 1,3 hPa (formaldehyde)
- LD 50 (oral, rat): 100 mg/kg (formaldehyde)

- EC-Index-No.: 605-001-00-5
- ADR: 8 C9 III UN 2209
- IMDG: 8 III UN 2209
- IATA/ICAO: 8 III UN 2209
- GHS-signal word: Danger
- GHS-H sentences: H311 - H331 - H370 - H335 - H336 - H351 - H314 - H302 - H317
- GHS-P sentences: P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2912 11 00 00
- Applications: disinfectant, synthesis of organic products, in embalming liquids, analytical chemistry, photography, in pharma industry.

## FO0009 Formaldehyde, solution 37%, synthesis grade

assay (acidimetric) . . . . .approx. 37 %
density (20°/4°) . . . . .1,080 - 1,101

Art. No.	Volume	Container
FO00091000	1 l	
FO0009005P	5 l	
FO0009025P	25 l	

## FO0010 Formaldehyde, solution 37% w/w, extra pure, Pharmpur®, Ph Eur, BP, USP, stabilized with approx. 10% of methanol

assay (acidimetric) . . . . .34,5 - 38,0 %	residue on ignition . . . . .max. 0,1 %
identification . . . . .passes test	Residual solvents are analysed according to guideline CPMP/ICH/283/95.
density (20°/4°) . . . . .1,080 - 1,101	
appearance of solution . . . . .colourless	
acidity . . . . .passes test	
methanol (G.C.) (v/v) . . . . .9 - 15 %	

Art. No.	Volume	Container
FO00101000	1 l	
FO00102500	2,5 l	
FO0010005P	5 l	
FO0010025P	25 l	

## FO0011 Formaldehyde, solution 37% w/w, reagent grade, stabilized with approx. 10% methanol

assay (acidimetric) . . . . .approx. 37 %	sulfates (SO <sub>4</sub> ) . . . . .max. 0,002 %
identity . . . . .passes test	heavy metals (as Pb) . . . . .max. 0,0002 %
density (20°/4°) . . . . .1,080 - 1,101	iron (Fe) . . . . .max. 0,0001 %
colour (Hazen) . . . . .max. 10	methanol (G.C.) . . . . .8 - 12 %
free acid (as HCOOH) . . . . .max. 0,035 %	residue on ignition . . . . .max. 0,002 %
chlorides (Cl) . . . . .max. 0,0001 %	

Art. No.	Volume	Container
FO00111000	1 l	
FO00112500	2,5 l	
FO0011005P	5 l	
FO0011025P	25 l	

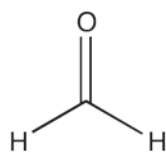
## FO0012 Formaldehyde, solution 37% w/w, molecular biology grade

assay (acidimetric) . . . . .approx. 37 %	absorbance of an aqueous solution
density (20°/4°) . . . . .1,080 - 1,101	2 M in a 1 cm cell at 260 nm . . . . .max. 0,2 AU
free acid (as HCOOH) . . . . .max. 0,035 %	absorbance of an aqueous solution
heavy metals (as Pb) . . . . .max. 0,0002 %	2 M in a 1 cm cell at 280 nm . . . . .max. 0,05 AU
	RNases . . . . .non detected

Art. No.	Volume	Container
FO00120250	250 ml	
FO00121000	1 l	

## Formaldehyde, solution 30 - 36% w/w, buffered at pH = 8,1, stabilized with methanol

## F00018 Formaldehyde, solution 30 - 36% w/w, buffered at pH = 8,1, stabilized with methanol



- Synonyms: Formalin solution, Formol, Methanal solution, Methyl aldehyde solution
- CH<sub>2</sub>O
- M = 30,03 g/mol
- CAS [50-00-0]
- EINECS-No.: 200-001-8
- Density: 1,07 g/cm<sup>3</sup>
- LD 50 (oral, rat): 100 mg/kg (formaldehyde)
- EC-Index-No.: 605-001-00-5
- ADR: 8 C9 III UN 2209
- IMDG: 8 III UN 2209
- IATA/ICAO: 8 III UN 2209
- GHS-signal word: Danger

- GHS-H sentences: H311 - H331 - H370 - H335 - H336 - H351 - H314 - H302 - H317
- GHS-P sentences: P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2912 11 00 00

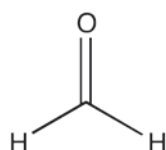
**Specifications:**

assay (iodometric) ..... 30 - 36 %  
pH ..... approx. 8,1

Art. No.	Volume	Container
F00018010C	10l	

## Formaldehyde, solution 10%, pH = 7

## F00014 Formaldehyde, solution 10% w/w, buffered at pH = 7 with carbonates



- Synonyms: Formalin solution, Formol, Methanal solution, Methyl aldehyde solution
- CH<sub>2</sub>O
- M = 30,03 g/mol
- CAS [50-00-0]
- EINECS-No.: 200-001-8
- Density: 1,02 g/cm<sup>3</sup>
- EC-Index-No.: 605-001-00-5
- GHS-signal word: Warning
- GHS-H sentences: H351 - H302 - H315 - H319 - H317 - H335 - H336
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 2912 11 00 00
- Applications: analytical chemistry, in buffer solutions.

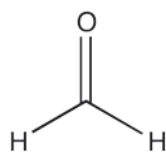
**Specifications:**

assay (acidimetric) ..... approx. 10 %  
pH ..... 6,8 - 7,2

Art. No.	Volume	Container
F000141000	1l	
F00014005P	5l	
F00014010C	10l	

## Formaldehyde, solution 3,5 - 4%

## F00013 Formaldehyde, solution 3,5 - 4,0 % w/w, buffered at pH = 7 with carbonates



- Synonyms: Formalin solution, Formol, Methanal solution, Methyl aldehyde solution
- CH<sub>2</sub>O
- M = 30,03 g/mol
- CAS [50-00-0]
- EINECS-No.: 200-001-8
- Density: 1,003 g/cm<sup>3</sup>
- Boiling point: ~ 100 °C
- LD 50 (oral, rat): 100 mg/kg (pure substance)
- EC-Index-No.: 605-001-00-5
- GHS-signal word: Warning
- GHS-H sentences: H351 - H317
- GHS-P sentences: P261 - P280 - P281 - P321 - P405 - P501a
- Tariff number: 2912 11 00 00

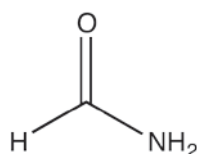
- Applications: analytical chemistry, laboratory reagent, in buffer solutions, for biology.

**Specifications:**

assay (acidimetric) ..... 3,5 - 4,0 %  
pH ..... 6,8 - 7,2

Art. No.	Volume	Container
F000131000	1l	
F00013005P	5l	
F00013010C	10l	
F00013025P	25l	

## Formamide



- Synonyms: Methanamide, Methane amide, Carbamaldehide, Formic acid amide
- CH<sub>3</sub>NO
- M = 45,04 g/mol
- CAS [75-12-7]
- EINECS-No.: 200-842-0
- Density: 1,13 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 2 °C
- Boiling point: 210 °C (decomposes)
- Flash pt. 175 °C
- Ignition temp.: 500 °C

- Vapour pressure: (20 °C) 0,08 hPa
- Dielectric const.: (25 °C) 109,5
- LD 50 (oral, rat): 5800 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H360D
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2924 19 00 90
- Applications: analytical chemistry, laboratory reagent, solvents, chromatography, synthesis of organic products.

## F00025 Formamide, extra pure



assay (G.C.) ..... min. 99 %  
identity (IR-spectrum) ..... passes test  
density (20°/4°) ..... 1,132 - 1,135  
insoluble in water ..... passes test  
copper (Cu) ..... max. 0,0005 %  
iron (Fe) ..... max. 0,0005 %

lead (Pb) ..... max. 0,0005 %  
nickel (Ni) ..... max. 0,0005 %  
formic acid (HCOOH) ..... max. 0,02 %  
methanol (G.C.) ..... max. 0,2 %  
residue on ignition ..... max. 0,1 %  
water (K.F.) ..... max. 0,3 %

Art. No.	Volume	Container
F000251000	1l	
F000252500	2,5l	

# Formam

## F00026 Formamide, reagent grade, ACS

assay (as N) . . . . . min. 99,5 %	copper (Cu) . . . . . max. 0,0001 %
identity (IR-spectrum) . . . . . passes test	iron (Fe) . . . . . max. 0,0001 %
density (20°/4°) . . . . . 1,132 - 1,135	lead (Pb) . . . . . max. 0,0001 %
colour (Hazen) . . . . . max. 10	zinc (Zn) . . . . . max. 0,0001 %
melting point . . . . . 2,0 - 3,0 °C	formic acid (HCOOH) . . . . . max. 0,02 %
chlorides (Cl) . . . . . max. 0,0001 %	residue on ignition (600 °C) . . . . . max. 0,005 %
cadmium (Cd) . . . . . max. 0,0001 %	water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
F000261000	1 l	
F000262500	2,5 l	

## F00027 Formamide, molecular biology grade

assay (as N) . . . . . min. 99 %	absorbance of an aqueous solution 0,5 M in a 1 cm cell at 270 nm . . . . . max. 0,05 AU
identity (IR-spectrum) . . . . . passes test	absorbance of an aqueous solution 0,5 M in a 1 cm cell at 280 nm . . . . . max. 0,03 AU
density (20°/4°) . . . . . 1,132 - 1,135	heavy metals (as Pb) . . . . . max. 0,0001 %
absorbance of an aqueous solution 0,5 M in a 1 cm cell at 260 nm . . . . . max. 0,08 AU	DNases, RNases, Proteases . . . . . non detected

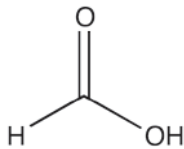
Art. No.	Volume	Container
F000270100	100 ml	

## F00028 Formamide, dried (max. 0,02% H<sub>2</sub>O), reagent grade (Karl Fischer)

assay (as N) . . . . . min. 99,5 %	copper (Cu) . . . . . max. 0,0001 %	water (K.F.) . . . . . max. 0,02 %
identity (IR-spectrum) . . . . . passes test	iron (Fe) . . . . . max. 0,0001 %	
density (20°/4°) . . . . . 1,132 - 1,135	lead (Pb) . . . . . max. 0,0001 %	
colour (Hazen) . . . . . max. 10	zinc (Zn) . . . . . max. 0,0001 %	
chlorides (Cl) . . . . . max. 0,0001 %	formic acid (HCOOH) . . . . . max. 0,02 %	
cadmium (Cd) . . . . . max. 0,0001 %	residue on ignition (600 °C) . . . . . max. 0,005 %	

Art. No.	Volume	Container
F000281000	1 l	

## Formic acid, 98 - 100%



- Synonyms: Methanoic acid, Formylic acid
- HCOOH
- M = 46,03 g/mol
- CAS [64-18-6]
- EINECS-No.: 200-579-1
- Density: 1,22 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ 8 °C
- Boiling point: 101 °C
- Flash pt. 48 °C
- Ignition temp.: 480 °C
- Vapour pressure: (20 °C) 42 hPa
- Refraction index: (n 20 °C/D) 1,3714
- Dielectric const.: (16 °C) 58,5

- LD 50 (oral, rat): 730 mg/kg
- EC-Index-No.: 607-001-00-0
- ADR: 8 CF1 II UN 1779
- IMDG: 8 II UN 1779
- IATA/ICAO: 8 II UN 1779
- GHS-signal word: Danger
- GHS-H sentences: H314 - H226
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 11 00 00
- Applications: analytical chemistry, synthesis of organic products, in the rubber industry, acidifying agent, cosmetics.

## AC1086 Formic acid, 98 - 100%, extra pure

assay (acidimetric) . . . . . min. 98 %	iron (Fe) . . . . . max. 0,001 %
appearance of solution . . . . . passes test	lead (Pb) . . . . . max. 0,001 %
chlorides (Cl) . . . . . max. 0,001 %	nickel (Ni) . . . . . max. 0,001 %
sulfates (SO <sub>4</sub> ) . . . . . max. 0,004 %	zinc (Zn) . . . . . max. 0,002 %
sulfites (SO <sub>3</sub> ) . . . . . max. 0,002 %	acetic acid (CH <sub>3</sub> COOH) . . . . . max. 0,4 %
arsenic (As) . . . . . max. 0,0003 %	oxalic acid (C <sub>2</sub> H <sub>2</sub> O <sub>4</sub> ) . . . . . max. 0,01 %
ammonium (NH <sub>4</sub> ) . . . . . max. 0,01 %	aldehydes . . . . . passes test
copper (Cu) . . . . . max. 0,002 %	formaldehyde (HCHO) . . . . . max. 0,1 %
heavy metals (as Pb) . . . . . max. 0,0005 %	residue on evaporation . . . . . max. 0,005 %

Art. No.	Volume	Container
AC10861000	1 l	
AC10862500	2,5 l	
AC1086005P	5 l	
AC1086025P	25 l	

## AC1085 Formic acid, 98 - 100%, reagent grade, ACS, Reag. Ph Eur

assay (acidimetric) . . . . . min. 98 %	chromium (Cr) . . . . . max. 0,000005 %	strontium (Sr) . . . . . max. 0,000002 %
colour (Hazen) . . . . . max. 10	cobalt (Co) . . . . . max. 0,000002 %	thallium (Tl) . . . . . max. 0,000005 %
density (20°/20°) . . . . . 1,217 - 1,223	copper (Cu) . . . . . max. 0,000002 %	titanium (Ti) . . . . . max. 0,00001 %
acetic acid (CH <sub>3</sub> COOH) . . . . . max. 0,05 %	germanium (Ge) . . . . . max. 0,000005 %	vanadium (V) . . . . . max. 0,000005 %
dilution test . . . . . passes test	heavy metals (as Pb) . . . . . max. 0,001 %	zinc (Zn) . . . . . max. 0,000005 %
chlorides (Cl) . . . . . max. 0,0005 %	iron (Fe) . . . . . max. 0,0002 %	zirconium (Zr) . . . . . max. 0,00001 %
sulfates (SO <sub>4</sub> ) . . . . . max. 0,0005 %	lead (Pb) . . . . . max. 0,000002 %	residue on evaporation . . . . . max. 0,001 %
sulfites (SO <sub>3</sub> ) . . . . . passes test	lithium (Li) . . . . . max. 0,000002 %	
aluminium (Al) . . . . . max. 0,000005 %	magnesium (Mg) . . . . . max. 0,00005 %	
ammonium (NH <sub>4</sub> ) . . . . . max. 0,001 %	manganese (Mn) . . . . . max. 0,000005 %	
barium (Ba) . . . . . max. 0,000005 %	molybdenum (Mo) . . . . . max. 0,000002 %	
beryllium (Be) . . . . . max. 0,000002 %	nickel (Ni) . . . . . max. 0,000005 %	
bismuth (Bi) . . . . . max. 0,00001 %	potassium (K) . . . . . max. 0,00001 %	
cadmium (Cd) . . . . . max. 0,000005 %	silver (Ag) . . . . . max. 0,000002 %	
calcium (Ca) . . . . . max. 0,00002 %	sodium (Na) . . . . . max. 0,00005 %	

Art. No.	Volume	Container
AC10851000	1 l	
AC10852500	2,5 l	
AC1085005P	5 l	
AC1085025P	25 l	

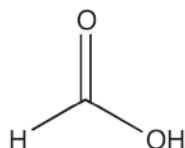
## AC1076 Formic acid, eluent additive for LC-MS

assay (acidimetric) . . . . . 98 - 100 %	lead (Pb) . . . . . max. 0,000005 %	strontium (Sr) . . . . . max. 0,000005 %
aluminium (Al) . . . . . max. 0,000005 %	lithium (Li) . . . . . max. 0,000005 %	thallium (Tl) . . . . . max. 0,000005 %
barium (Ba) . . . . . max. 0,000005 %	magnesium (Mg) . . . . . max. 0,00005 %	zinc (Zn) . . . . . max. 0,000005 %
cadmium (Cd) . . . . . max. 0,000005 %	manganese (Mn) . . . . . max. 0,000005 %	suitability for use in LC-MS . . . . . passes test
calcium (Ca) . . . . . max. 0,00002 %	nickel (Ni) . . . . . max. 0,000005 %	
chromium (Cr) . . . . . max. 0,000005 %	molybdenum (Mo) . . . . . max. 0,000005 %	
cobalt (Co) . . . . . max. 0,000005 %	potassium (K) . . . . . max. 0,00001 %	
copper (Cu) . . . . . max. 0,000005 %	silver (Ag) . . . . . max. 0,000005 %	
iron (Fe) . . . . . max. 0,00002 %	sodium (Na) . . . . . max. 0,00005 %	

Art. No.	Volume	Container
AC10760050	50 ml	

## Formic acid, 90,1% ± 0,1%

### AC1083 Formic acid, solution 90,1% ± 0,1% w/w, reagent grade



- Synonyms: Methanoic acid, Formylic acid
- HCOOH
- M = 46,03 g/mol
- CAS [64-18-6]
- EINECS-No.: 200-579-1
- Density: ~ 1,2 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -9 °C
- Boiling point: 107 °C
- Flash pt. 60 °C
- Ignition temp.: 485 °C
- LD 50 (oral, rat): 730 mg/kg (pure substance)
- EC-Index-No.: 607-001-00-0
- ADR: 8 CF1 II UN 1779
- IMDG: 8 II UN 1779
- IATA/ICAO: 8 II UN 1779
- GHS-signal word: Danger
- GHS-H sentences: H314 - H226
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 11 00 00
- Applications: analytical chemistry, synthesis of organic products, in the rubber industry, acidifying agent, cosmetics.

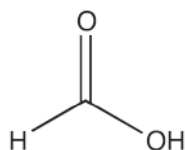
#### Specifications:

assay (acidimetric)	90,0 - 90,2 %
colour (Hazen)	max. 10
acetic acid (CH <sub>3</sub> COOH)	max. 0,05 %
chlorides (Cl)	max. 0,0005 %
sulfates (SO <sub>4</sub> )	max. 0,0005 %
sulfites (SO <sub>3</sub> )	max. 0,001 %
aluminium (Al)	max. 0,000005 %
ammonium (NH <sub>4</sub> )	max. 0,001 %

barium (Ba)	max. 0,000005 %
beryllium (Be)	max. 0,000002 %
bismuth (Bi)	max. 0,00001 %
cadmium (Cd)	max. 0,000005 %
calcium (Ca)	max. 0,00002 %
chromium (Cr)	max. 0,000005 %
cobalt (Co)	max. 0,000002 %
copper (Cu)	max. 0,000002 %
germanium (Ge)	max. 0,000005 %
heavy metals (as Pb)	max. 0,0005 %
iron (Fe)	max. 0,0002 %
lead (Pb)	max. 0,000002 %
lithium (Li)	max. 0,000002 %
magnesium (Mg)	max. 0,00005 %
manganese (Mn)	max. 0,000005 %
molybdenum (Mo)	max. 0,000002 %
nickel (Ni)	max. 0,000005 %
potassium (K)	max. 0,00001 %
silver (Ag)	max. 0,000002 %
sodium (Na)	max. 0,00005 %
strontium (Sr)	max. 0,000002 %
thallium (Tl)	max. 0,000005 %
titanium (Ti)	max. 0,00001 %
vanadium (V)	max. 0,000005 %
zinc (Zn)	max. 0,000005 %
zirconium (Zr)	max. 0,00001 %
dilution test	passes test
residue on evaporation	max. 0,001 %

Art. No.	Volume	Container
AC10831000	1 l	0
AC10832500	2,5 l	0

## Formic acid, 85%



- Synonyms: Methanoic acid, Formylic acid
- HCOOH
- M = 46,03 g/mol
- CAS [64-18-6]
- EINECS-No.: 200-579-1
- Density: ~ 1,2 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ -9 °C
- Boiling point: ~ 107 °C
- Flash pt. 69 °C
- LD 50 (oral, rat): 730 mg/kg (pure substance)
- EC-Index-No.: 607-001-00-0

- ADR: 8 C3 II UN 3412
- IMDG: 8 II UN 3412
- IATA/ICAO: 8 II UN 3412
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 11 00 00
- Applications: analytical chemistry, synthesis of organic products, in the rubber industry, acidifying agent, cosmetics.

### AC1080 Formic acid, solution 85% w/w, extra pure



assay (acidimetric)	min. 85 %
chlorides (Cl)	max. 0,002 %
sulfates (SO <sub>4</sub> )	max. 0,005 %
ammonium (NH <sub>4</sub> )	max. 0,01 %
copper (Cu)	max. 0,001 %
iron (Fe)	max. 0,001 %

lead (Pb)	max. 0,001 %
nickel (Ni)	max. 0,001 %
residue on evaporation	max. 0,01 %

Art. No.	Volume	Container
AC10801000	1 l	0
AC10802500	2,5 l	0
AC1080005P	5 l	0
AC1080025P	25 l	0

### AC1081 Formic acid, solution 85% w/w, reagent grade



assay (acidimetric)	min. 85 %
colour (Hazen)	max. 10
acetic acid (CH <sub>3</sub> COOH)	max. 0,4 %
chlorides (Cl)	max. 0,001 %
sulfates (SO <sub>4</sub> )	max. 0,002 %
sulfites (SO <sub>3</sub> )	max. 0,001 %
aluminium (Al)	max. 0,000005 %
ammonium (NH <sub>4</sub> )	max. 0,005 %
barium (Ba)	max. 0,000005 %
cadmium (Cd)	max. 0,000005 %
calcium (Ca)	max. 0,00005 %

chromium (Cr)	max. 0,000002 %
copper (Cu)	max. 0,000002 %
heavy metals (as Pb)	max. 0,0005 %
iron (Fe)	max. 0,00001 %
lead (Pb)	max. 0,000002 %
lithium (Li)	max. 0,000002 %
magnesium (Mg)	max. 0,00005 %
manganese (Mn)	max. 0,000005 %
nickel (Ni)	max. 0,000005 %
potassium (K)	max. 0,00001 %
silver (Ag)	max. 0,000002 %

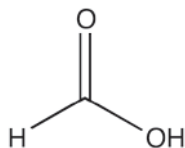
sodium (Na)	max. 0,0001 %
zinc (Zn)	max. 0,000005 %
residue on evaporation	max. 0,002 %

Art. No.	Volume	Container
AC10811000	1 l	0
AC10812500	2,5 l	0
AC1081005P	5 l	0

# Formic

## Formic acid, solution 10%

### AC1075 Formic acid, solution 10% in water, for cleaning purposes, LC-MS



- Synonyms: Methanoic acid, Formylic acid
- CAS [64-18-6]
- EINECS-No.: 200-579-1
- EC-Index-No.: 607-001-00-0
- ADR: 8 C3 II UN 3265
- IMDG: 8 II UN 3265
- IATA/ICAO: 8 II UN 3265
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 11 00 00
- Applications: analytical chemistry, chromatography.

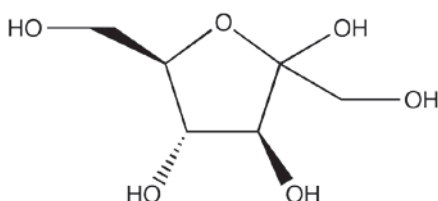
aluminium (Al) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,000005 %  
 iron (Fe) . . . . .max. 0,000005 %  
 magnesium (Mg) . . . . .max. 0,000005 %  
 potassium (K) . . . . .max. 0,000005 %  
 sodium (Na) . . . . .max. 0,000005 %  
 suitability for use in LC-MS . . . . .passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 260 nm. . . . .80 % 0,097 AU  
 280 nm. . . . .90 % 0,046 AU

**Specifications:**  
 formic acid content (v/v) . . . . .9,5 - 10,5 %

Art. No.	Volume	Container
AC10751000	1 l	0

## D(-)-Fructose

### LE0070 D(-)-Fructose, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms: Levulose, Laevulose
- C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>
- M = 180,16 g/mol
- CAS [57-48-7]
- EINECS-No.: 200-333-3
- Solub. in water: (20 °C): 500 g/l
- Melting point: 100 - 110 °C (decomposes)
- Tariff number: 1702 50 00 00
- Applications: analytical chemistry, in food industry, synthesis of organic products, nutrient media for bacterial culture, in pharma industry.

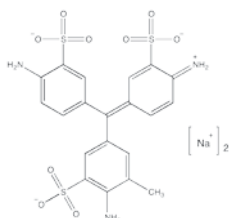
sulfates (SO<sub>4</sub>) . . . . .max. 0,025 %  
 arsenic (As) . . . . .max. 0,0001 %  
 barium (Ba) . . . . .passes test  
 calcium and magnesium (as Ca) . . . . .max. 0,005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 lead (Pb) . . . . .max. 0,00005 %  
 foreign sugars. . . . .passes test  
 5-Hydroxymethylfurfural and related  
 substances. . . . .passes test  
 residue on ignition . . . . .max. 0,1 %  
 water (K.F.) . . . . .max. 0,5 %  
 loss on drying . . . . .max. 0,5 %  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.

**Specifications:**  
 assay (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>) . . . . .98 - 102 %  
 identification . . . . .passes test  
 appearance of solution . . . . .passes test  
 acidity or alkalinity . . . . .passes test  
 specific rotation ([α]<sub>D</sub><sup>20</sup>, c = 10,  
 H<sub>2</sub>O) . . . . .- 91,0 ° - - 93,5 °  
 chlorides (Cl) . . . . .max. 0,025 %

Art. No.	Volume	Container
LE00700500	500 g	0
LE00701000	1 kg	0

## Fuchsin acid, C.I. 42685

### FU0055 Fuchsin acid, C.I. 42685, for microscopy



- C<sub>20</sub>H<sub>17</sub>N<sub>3</sub>Na<sub>2</sub>O<sub>9</sub>S<sub>3</sub>
- M = 585,54 g/mol
- CAS [3244-88-0]
- EINECS-No.: 221-816-5
- Solub. in water: (20 °C): 200 g/l
- Melting point: > 130 °C (decomposes)
- Tariff number: 3204 12 00 00
- Applications: indicator, manufacturing of inks (for biology), microscopy.

Absorptivity (A1%/1 cm; λ max.) . . . . .800 - 1300  
 loss on drying (135 °C) . . . . .max. 10 %

**Specifications:**  
 Absorption maximum λ  
 (in HCl 0,005 mol/l) . . . . .540 - 545 nm

Art. No.	Volume	Container
FU00550010	10 g	0
FU00550025	25 g	0
FU00550050	50 g	0
FU00550100	100 g	0

## Fuchsin basic, carbol solution, according to Ziehl

### FU0065 Fuchsin basic, carbol solution, according to Ziehl



- Density: 0,98 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 47 °C
- ADR: 8 CF1 II UN 2920
- IMDG: 8 II UN 2920
- IATA/ICAO: 8 II UN 2920
- GHS-signal word: Danger

- GHS-H sentences: H314 - H226 - H341
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a -
- Tariff number: 3204 13 00 90
- Applications: microscopy.
- Appearance: Red liquid

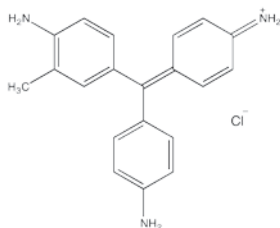
**Specifications:**  
 suitability for microscopy . . . . .passes test

Art. No.	Volume	Container
FU00650500	500 ml	0
FU00652500	2,5 l	0



## Fuchsin basic, C.I. 42510

## FU0060 Fuchsin basic, C.I. 42510, for microscopy



- $C_{20}H_{20}ClN_3$
- $M = 337,85 \text{ g/mol}$
- CAS [632-99-5]
- EINECS-No.: 211-189-6
- Solub. in water: (25 °C): 4 g/l
- Melting point: ~ 235 °C (decomposes)
- GHS-signal word: Danger
- GHS-H sentences: H334 - H351 - H302 - H317
- GHS-P sentences: P285 - P261 - P280 - P321 - P405 - P501a -
- Tariff number: 3204 13 00 90
- Applications: microscopy.

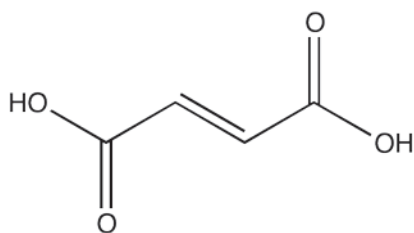
## Specifications:

Absorption maximum  $\lambda$   
(in ethanol 50 %). . . . . 549 - 553 nm  
Absorptivity ( $A1\%/1 \text{ cm}; \lambda \text{ max.}$ ). . . . . 1600 - 2250  
loss on drying (135 °C) . . . . . max. 15 %

Art. No.	Volume	Container
FU00600025	25 g	
FU00600100	100 g	
FU0060005P	5 kg	

## Fumaric acid

## AC1155 Fumaric acid, extra pure



- Synonyms: trans-Butenedioic acid
- $C_4H_4O_4$
- $M = 116,07 \text{ g/mol}$
- CAS [110-17-8]
- EINECS-No.: 203-743-0
- Solub. in water: (20 °C): 4,9 g/l
- Melting point: 287 °C
- Boiling point: 290 °C
- Flash pt. 273 °C
- Ignition temp.: 375 °C
- Vapour pressure: (20 °C) < 0,001 hPa
- LD 50 (oral, rat): 9300 mg/kg
- EC-Index-No.: 607-146-00-X
- GHS-signal word: Warning
- GHS-H sentences: H319

- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2917 19 90 90
- Applications: antioxidant, manufacturing of synthetic resins, manufacture of dyes, synthesis of organic products.

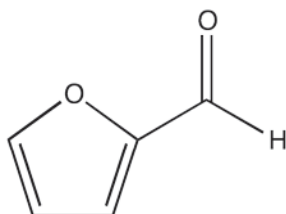
## Specifications:

assay (acidimetric) . . . . . min. 99 %  
identity (IR-spectrum) . . . . . passes test

Art. No.	Volume	Container
AC11551000	1 kg	

## Furfural

## FU0090 Furfural, synthesis grade



- Synonyms: 2-Furaldehyde, 2-Furancarbaldehyde, Furylmethanal
- $C_5H_4O_2$
- $M = 96,09 \text{ g/mol}$
- CAS [98-01-1]
- EINECS-No.: 202-627-7
- Density: 1,16 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 83 g/l
- Melting point: -37 °C
- Boiling point: 162 °C
- Flash pt. 60 °C
- Ignition temp.: 315 °C
- Vapour pressure: (20 °C) 1 hPa
- Dielectric const.: (20 °C) 41,9
- LD 50 (oral, rat): 65 mg/kg
- EC-Index-No.: 605-010-00-4
- ADR: 6.1 TF1 II UN 1199
- IMDG: 6.1 II UN 1199
- IATA/ICAO: 6.1 II UN 1199
- GHS-signal word: Danger

- GHS-H sentences: H301 - H331 - H226 - H351 - H312 - H315 - H319 - H335
- GHS-P sentences: P210 - P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2932 12 00 00
- Applications: analytical chemistry, for the detection of: aromatic amines, insecticide, fungicide, solvents.

## Specifications:

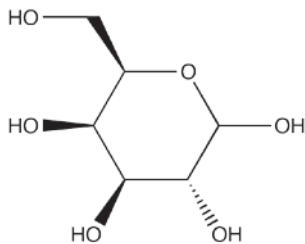
assay (G.C.) . . . . . min. 98 %  
identity (IR-spectrum) . . . . . passes test  
density (20°/4°) . . . . . 1,158 - 1,160  
residue on ignition . . . . . max. 0,01 %  
water (K.F.) . . . . . max. 0,2 %

Art. No.	Volume	Container
FU00901000	1 l	
FU0090005P	5 l	

# Galact

## D(+)-Galactose

### GA0025 D (+)-Galactose, extra pure, Pharmpur®, Ph Eur, BP



- Synonyms: Lactoglucose, D-Galactopyranose
- $C_6H_{12}O_6$
- $M = 180,16$  g/mol
- CAS [59-23-4]
- EINECS-No.: 200-416-4
- Solub. in water: (20 °C): 650 g/l
- Melting point: 163 - 169 °C
- Tariff number: 2940 00 00 80
- Applications: analytical chemistry, in food industry, in biochemistry, nutrient media for bacterial culture, in pharma industry.

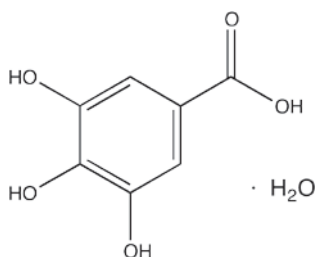
appearance of solution . . . . . passes test  
 acidity or alkalinity. . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ ,  $c = 10$ ,  $H_2O$ ) referred to dried sample). . . . . + 78 ° - + 81,5 °  
 barium (Ba). . . . . passes test  
 lead (Pb). . . . . max. 0,00005 %  
 residue on ignition . . . . . max. 0,1 %  
 water (K.F.). . . . . max. 1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

**Specifications:**  
 identity (IR-spectrum) . . . . . passes test

Art. No.	Volume	Container
GA00250100	100 g	0

## Gallic acid monohydrate

### AC1180 Gallic acid monohydrate, extra pure



- Synonyms: 3,4,5-Trihydroxybenzoic acid
- $C_7H_6O_5 \cdot H_2O$
- $M = 188,14$  g/mol
- CAS [5995-86-8]
- EINECS-No.: 205-749-9
- Solub. in water: (20 °C): ~ 15 g/l
- Melting point: 256 - 260 °C
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2918 29 00 90
- Applications: analytical chemistry, photography, manufacture of dyes, cosmetics.

**Specifications:**  
 assay (acidimetric) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 chlorides (Cl). . . . . max. 0,01 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,005 %  
 loss on drying (105 °C) . . . . . 7- 10 %  
 residue on ignition . . . . . max. 0,1 %

Art. No.	Volume	Container
AC11800250	250 g	0
AC11800500	500 g	0
AC1180025P	25 kg	0

## Gelatine powder

### GE0020 Gelatine powder, for analysis and bacteriology

- Synonyms: Gelatin powder
- CAS [9000-70-8]
- EINECS-No.: 232-554-6
- Solub. in water: soluble in hot water
- Boiling point: 100 °C
- LD 50 (oral, rat): > 5000 mg/kg
- Tariff number: 3503 00 10 00
- Applications: in food industry, in the rubber industry, for pharmaceuticals synthesizing, plasticizer, for

microbiology, nutrient media for bacterial culture, analytical chemistry.

**Specifications:**  
 pH (1 %,  $H_2O$ ) . . . . . 3,8 - 7,6  
 sulphur dioxide ( $SO_2$ ) . . . . . max. 0,005 %  
 arsenic (As). . . . . max. 0,0001 %  
 heavy metals (as Pb). . . . . max. 0,001 %  
 peroxides (as  $H_2O_2$ ) . . . . . max. 0,01 %

residue on ignition . . . . . max. 2 %  
 loss on drying . . . . . max. 15 %  
 suitability for microbiology. . . . . passes test

Art. No.	Volume	Container
GE00200250	250 g	0
GE00201000	1 kg	0

## Gentian violet, carbol solution

### VI0032 Gentian violet, carbol solution, for microscopy

- Density: 0,988 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00

- Applications: microscopy, bacterium staining.

**Specifications:**  
 suitability for microscopy . . . . . passes test

Art. No.	Volume	Container
VI00320500	500 ml	0

## Glass wool

### LA0075 Glass wool, washed

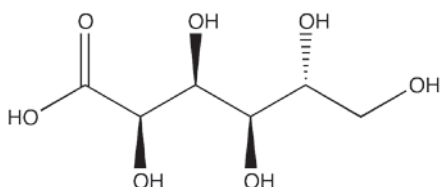
- CAS [65997-17-3]
- EINECS-No.: 266-046-0
- Solub. in water: (20 °C): insoluble
- Tariff number: 7019 90 00 90
- Applications: for laboratory uses.

**Specifications:**  
 soluble alkali in water (as  $Na_2O$ ) . . . . . max. 0,1 %  
 solubility in HCl. . . . . max. 1 %  
 heavy metals (as Pb). . . . . max. 0,005 %  
 diameter of fibre . . . . . passes test

Art. No.	Volume	Container
LA00750100	100 g	0
LA00750250	250 g	0
LA00751000	1 kg	0

## Gluconic acid, solution 50%

### AC1200 Gluconic acid, solution 50% w/w, extra pure



- Synonyms: Dextronic acid, Maltonic acid, Glyconic acid, Pentahydroxycaproic acid
- $C_6H_{12}O_7$
- $M = 196,16$  g/mol
- CAS [526-95-4]
- EINECS-No.: 208-401-4
- Density: 1,24 g/cm<sup>3</sup>
- Solub. in water: (20 °C): freely miscible
- Boiling point: 105 - 106 °C
- Tariff number: 2918 16 00 00

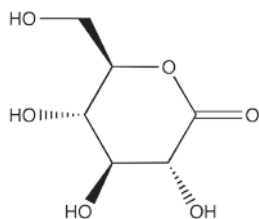
- Applications: synthesis of organic products, whitener agent.

**Specifications:**  
 assay (acidimetric) . . . . . approx. 50 %

Art. No.	Volume	Container
AC12000250	250 ml	0

## D-Glucono-d-lactone

### GL0110 D-Glucono-d-lactone, synthesis grade



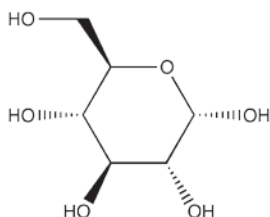
- Synonyms: D(+) -Glucono-1,5-lactone, δ-Glucono-lactone, D(+) -Dextronic acid d-lactone
- C<sub>6</sub>H<sub>10</sub>O<sub>6</sub>
- M = 178,14 g/mol
- CAS [90-80-2]
- EINECS-No.: 202-016-5
- Solub. in water: (20 °C): ~ 590 g/l
- Melting point: 153 °C
- Tariff number: 2932 20 90 90
- Applications: laboratory reagent, synthesis of organic products, in food industry.

#### Specifications:

assay (acidimetric) . . . . . min. 99,5 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 residue on ignition . . . . . max. 0,05 %

Art. No.	Volume	Container
GL01100250	250 g	Ⓟ

## D(+)-Glucose anhydrous



- Synonyms: Dextrose
- C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>
- M = 180,16 g/mol
- CAS [50-99-7]
- EINECS-No.: 200-075-1
- Solub. in water: (20 °C): ~ 470 g/l
- Melting point: ~ 146 °C
- Ignition temp.: ~ 500 °C
- LD 50 (oral, rat): 25800 mg/kg

- Tariff number: 1702 30 51 00
- Applications: analytical chemistry, in biochemistry, for pharmaceuticals synthesizing, in food industry, in pharma industry.

### GL0125 D(+) -Glucose anhydrous, extra pure, Pharmpur®, Ph Eur, BP, USP

identification . . . . . passes test  
 appearance of solution . . . . . passes test  
 acidity or alkalinity . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ , c = 10, H<sub>2</sub>O) . . . . . + 52,5° - + 53,3°  
 chlorides (Cl) . . . . . max. 0,0125 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,02 %  
 sulfites (as SO<sub>2</sub>) . . . . . max. 0,0015 %  
 arsenic (As) . . . . . max. 0,0001 %  
 barium (Ba) . . . . . passes test

calcium (Ca) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,00005 %  
 foreign sugars, starch and dextrans . . . . . passes test  
 pyrogens . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 water (K.F.) . . . . . max. 1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
GL01250500	500 g	Ⓟ
GL01251000	1 kg	Ⓟ
GL0125025P	25 kg	Ⓟ

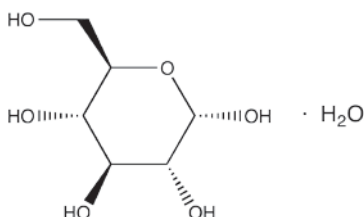
### GL0127 D(+) -Glucose anhydrous, reagent grade, ACS, Reag. Ph Eur

identity (IR-spectrum) . . . . . passes test  
 specific rotation ( $[\alpha]_{25}^D$ , c = 10, H<sub>2</sub>O) + 52,5° - + 53,0°  
 insoluble in water . . . . . max. 0,003 %  
 acidity . . . . . max. 0,002 meq/g  
 chlorides (Cl) . . . . . max. 0,0025 %  
 sulfates and sulfites (as SO<sub>4</sub>) . . . . . max. 0,0025 %

heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 starch . . . . . passes test  
 maltose (TLC) . . . . . max. 0,2 %  
 loss on drying (105 °C) . . . . . max. 0,2 %  
 residue on ignition . . . . . max. 0,01 %

Art. No.	Volume	Container
GL01270250	250 g	Ⓟ
GL01271000	1 kg	Ⓟ
GL0127005P	5 kg	Ⓟ

## D(+)-Glucose monohydrate



- Synonyms: Dextrose, Blood sugar
- C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> · H<sub>2</sub>O
- M = 198,17 g/mol
- CAS [14431-43-7]
- EINECS-No.: 200-075-1
- Solub. in water: (20 °C): ~ 470 g/l
- Melting point: ~ 83 °C
- Ignition temp.: ~ 500 °C

- LD 50 (oral, rat): 25800 mg/kg (anhydrous substance)
- Tariff number: 1702 30 51 00
- Applications: synthesis of organic products, in food industry, nutrient media for bacterial culture, for pharmaceuticals synthesizing, in pharma industry.

### GL0129 D(+) -Glucose monohydrate, extra pure, Pharmpur®, Ph Eur, BP, USP

identity (IR-spectrum) . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ , c = 10, H<sub>2</sub>O) + 52,5° - + 53,3°  
 appearance of solution . . . . . passes test  
 acidity or alkalinity . . . . . passes test  
 insoluble in water . . . . . max. 0,01 %  
 chlorides (Cl) . . . . . max. 0,0125 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,02 %  
 sulfites (as SO<sub>2</sub>) . . . . . max. 0,0015 %  
 arsenic (As) . . . . . max. 0,0001 %

barium (Ba) . . . . . passes test  
 calcium (Ca) . . . . . max. 0,02 %  
 lead (Pb) . . . . . max. 0,00005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 foreign sugars, starch and dextrans . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 water (K.F.) . . . . . 7,0 - 9,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
GL01290500	500 g	Ⓟ
GL01291000	1 kg	Ⓟ
GL0129005P	5 kg	Ⓟ
GL0129025P	25 kg	Ⓟ

### GL0130 D(+) -Glucose monohydrate, crystallized, Pharmpur®, Ph Eur, USP, GMP, suitable for use as excipient

identification . . . . . passes test  
 appearance of solution . . . . . passes test  
 colour of solution . . . . . passes test  
 acidity or alkalinity . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ ; c = 10, NH<sub>3</sub> 0,012 N) . . . . . + 52,5° - + 53,3°  
 chlorides (Cl) . . . . . max. 0,0125 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,02 %  
 sulfites (as SO<sub>2</sub>) . . . . . max. 0,0015 %  
 arsenic (As) . . . . . max. 0,0001 %  
 barium (Ba) . . . . . passes test

calcium (Ca) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,00005 %  
 foreign sugars, starch and dextrans . . . . . passes test  
 soluble starch, sulfites . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 water . . . . . 7,0 - 9,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

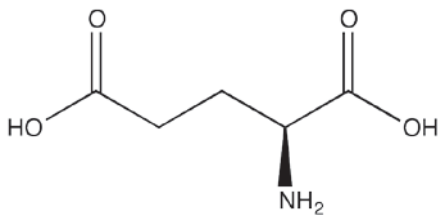
Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
GL01301000	1 kg	Ⓟ
GL0130025P	25 kg	Ⓟ

# Glutam

## L-Glutamic acid

AC1225 L-Glutamic acid, extra pure, Pharmapur®, Ph Eur, BP



- Synonyms: L- $\alpha$ -Aminoglutamic acid, (S)-2-Aminopentanedioic acid
- $C_5H_9NO_4$
- $M = 147,13$  g/mol
- CAS [56-86-0]
- EINECS-No.: 200-293-7
- Solub. in water: (25 °C): ~ 11,1 g/l
- Melting point: 160 °C
- LD 50 (oral, rat): > 30000 mg/kg
- Tariff number: 2922 42 00 90
- Applications: in biochemistry, in food industry, in pharma industry.

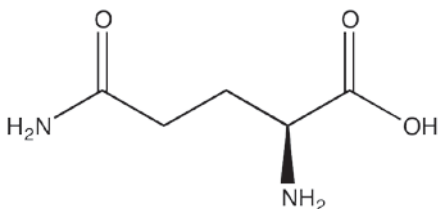
specific rotation ( $[\alpha]_{20}^D$ ,  $c = 10$ , HCl 1M, on dried sample) . . . . . + 30,5° - + 32,5°  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,03 %  
 ammonium ( $NH_4$ ) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %  
 ninhydrin-positive substances . . . . . max. 0,5 %  
 residue on ignition . . . . . max. 0,1 %  
 loss on drying (105 °C) . . . . . max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

**Specifications:**  
 assay (acidimetric) . . . . . 98,5 - 100,5 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . passes test

Art. No.	Volume	Container
AC12250250	250 g	Ⓢ
AC12251000	1 kg	Ⓢ

## L-Glutamine

GL0165 L-Glutamine, extra pure, Pharmapur®, USP



- Synonyms: L-Glutamic acid-5-amide
- $C_5H_{10}N_2O_3$
- $M = 146,15$  g/mol
- CAS [56-85-9]
- EINECS-No.: 200-292-1
- Solub. in water: (18 °C): 26 g/l
- Melting point: 185 - 186 °C
- LD 50 (oral, rat): 7500 mg/kg
- Tariff number: 2924 19 00 90
- Applications: in biochemistry, analytical chemistry, for pharmaceuticals synthesizing, synthesis of organic products, in pharma industry.

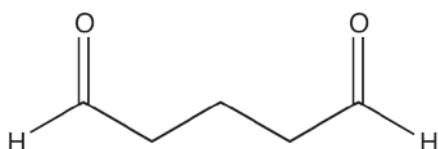
identity (IR-spectrum) . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ ,  $c = 4$ ,  $H_2O$ ) . . . . . + 6,3° - + 7,3°  
 insoluble in water . . . . . max. 0,05 %  
 chlorides (Cl) . . . . . max. 0,05 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,03 %  
 heavy metals (as Pb) . . . . . max. 0,0015 %  
 iron (Fe) . . . . . max. 0,003 %  
 residue on ignition (as  $SO_2$ ) . . . . . max. 0,3 %  
 loss on drying (105 °C, 3 h) . . . . . max. 0,3 %  
 related substances (TLC) . . . . . max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

**Specifications:**  
 assay (titration with  $HClO_4$ , on dried sample) . . . . . 98,5 - 101,5 %

Art. No.	Volume	Container
GL01650100	100 g	Ⓢ

## Glutardialdehyde, solution 25%

GL0170 Glutardialdehyde, solution 25% w/w, extra pure



- Synonyms: Pentanedial, Glutaraldehyde, Glutaric dialdehyde
- $C_5H_8O_2$
- $M = 100,12$  g/mol
- CAS [111-30-8]
- EINECS-No.: 203-856-5
- Density: 1,06 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -7 °C
- Boiling point: ~ 100 °C
- LD 50 (oral, rat): 134 mg/kg (pure substance)
- EC-Index-No.: 605-022-00-X
- ADR: 6.1 TC1 II UN 2927
- IMDG: 6.1 II UN 2927
- IATA/ICAO: 6.1 II UN 2927
- GHS-signal word: Danger

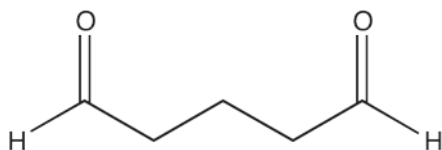
- GHS-H sentences: H334 - H314 - H400 - H302 - H332 - H335 - H317
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2912 19 00 00
- Applications: analytical chemistry, in sterilization of endoscopic instruments, cosmetics.
- Appearance: Colourless, clear liquid

**Specifications:**  
 assay (method of bisulfite) . . . . . approx. 25 %  
 density (20°/4°) . . . . . 1,060 - 1,065

Art. No.	Volume	Container
GL01700250	250 ml	Ⓢ
GL01701000	1 l	Ⓢ

## Glutardialdehyde, solution 50%

### GL0168 Glutardialdehyde, solution 50% w/w, extra pure



- Synonyms: Pentanedial, Glutaraldehyde, Glutaric dialdehyde
- $C_5H_8O_2$
- M = 100,12 g/mol
- CAS [111-30-8]
- EINECS-No.: 203-856-5
- Density: 1,13 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -21 °C
- Boiling point: 100,5 °C
- Flash pt. > 100 °C
- Ignition temp.: > 225 °C
- Vapour pressure: (20 °C) 0,27 hPa
- LD 50 (oral, rat): 134 mg/kg (pure substance)
- EC-Index-No.: 605-022-00-X
- ADR: 6.1 TC1 II UN 2927
- IMDG: 6.1 II UN 2927
- IATA/CAO: 6.1 II UN 2927

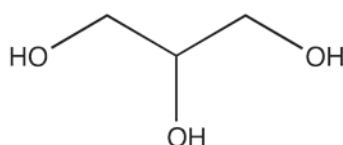
- GHS-signal word: Danger
- GHS-H sentences: H301 - H331 - H334 - H314 - H400 - H317 - H335
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2912 19 00 00
- Applications: analytical chemistry, in sterilization of endoscopic instruments, cosmetics.
- Appearance: Clear liquid

#### Specifications:

assay (method of bisulfite) . . . . . approx. 50 %  
density (20°/4°) . . . . . 1,125 - 1,130

Art. No.	Volume	Container
GL01680250	250 ml	0
GL01681000	1 l	0

## Glycerol



- Synonyms: Glycerin, 1,2,3-Propanetriol
- $C_3H_8O_3$
- M = 92,10 g/mol
- CAS [56-81-5]
- EINECS-No.: 200-289-5
- Density: 1,26 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 18 °C
- Boiling point: (0,09 hPa) 120 °C

- Flash pt. 199 °C
- Ignition temp.: 400 °C
- Vapour pressure: (20 °C) < 0,001 hPa
- LD 50 (oral, rat): 12600 mg/kg
- Tariff number: 2905 45 00 00
- Applications: analytical chemistry, synthesis of organic products, in explosive compositions, cosmetics, for pharmaceuticals synthesizing.

### GL0027 Glycerol, 99%, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (acidimetric, on dried sample) . . . . . 99 - 101 %  
identification . . . . . passes test  
density (20°/4°) . . . . . 1,256 - 1,261  
refractive index n<sub>20</sub>/D . . . . . 1,470 - 1,475  
appearance of solution . . . . . passes test  
acidity or alkalinity . . . . . passes test  
halogen compounds (as Cl) . . . . . max. 0,003 %  
chlorides (Cl) . . . . . max. 0,001 %

heavy metals (as Pb) . . . . . max. 0,0005 %  
aldehydes (as HCHO) . . . . . max. 0,001 %  
esters . . . . . passes test  
impurity A and related substances . . . . . passes test  
sugars . . . . . passes test  
residue on ignition . . . . . max. 0,01 %  
water (K.F.) . . . . . max. 2 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
GL00271000	1 l	0
GL00272500	2,5 l	0
GL0027005P	5 l	0
GL0027025P	25 l	0

### GL0026 Glycerol, 99,5%, reagent grade, ACS, Reag. Ph Eur

assay (G.C.) . . . . . min. 99,5 %  
identity (IR-spectrum) . . . . . passes test  
density (20°/4°) . . . . . 1,256 - 1,261  
colour (Hazen) . . . . . max. 10  
acidity . . . . . passes test  
acrolein, glucose and ammonium compounds . . . . . passes test  
aldehydes . . . . . max. 0,001 %  
halogen compounds (as Cl) . . . . . max. 0,003 %  
chlorides (Cl) . . . . . max. 0,0005 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,001 %  
aluminium (Al) . . . . . max. 0,00005 %  
arsenic (As) . . . . . max. 0,00005 %  
barium (Ba) . . . . . max. 0,00001 %

boron (B) . . . . . max. 0,000002 %  
cadmium (Cd) . . . . . max. 0,000005 %  
calcium (Ca) . . . . . max. 0,0001 %  
chromium (Cr) . . . . . max. 0,000002 %  
cobalt (Co) . . . . . max. 0,000005 %  
copper (Cu) . . . . . max. 0,000005 %  
heavy metals (as Pb) . . . . . max. 0,0002 %  
iron (Fe) . . . . . max. 0,00001 %  
lead (Pb) . . . . . max. 0,00001 %  
magnesium (Mg) . . . . . max. 0,0001 %  
manganese (Mn) . . . . . max. 0,00001 %  
nickel (Ni) . . . . . max. 0,000002 %  
tin (Sn) . . . . . max. 0,00001 %  
zinc (Zn) . . . . . max. 0,00001 %

fatty acid esters (as butyric acid) . . . . . max. 0,05 %  
sugars . . . . . passes test  
glycerolaldehyde . . . . . passes test  
substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
residue on ignition . . . . . max. 0,005 %  
water (K.F.) . . . . . max. 0,5 %

Art. No.	Volume	Container
GL00261000	1 l	0
GL00262500	2,5 l	0
GL0026005P	5 l	0

### GL0028 Glycerol anhydrous, molecular biology grade

assay (acidimetric) . . . . . min. 99 %  
identity (IR-spectrum) . . . . . passes test  
density (20°/4°) . . . . . 1,256 - 1,261  
absorbance of an aqueous solution 0,5 M in a 1 cm cell at 260 nm . . . . . max. 0,07 AU

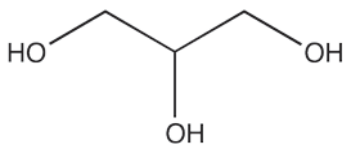
absorbance of an aqueous solution 0,5 M in a 1 cm cell at 280 nm . . . . . max. 0,02 AU  
heavy metals (as Pb) . . . . . max. 0,00005 %  
DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
GL00280100	100 ml	0
GL00281000	1 l	0

# Glycer

## Glycerol, 86 - 88%

### GL0023 Glycerol, solution 86 - 88% w/w, reagent grade, ISO



- Synonyms: Glycerin, 1,2,3-Propanetriol
- $C_3H_8O_3$
- $M = 92,10 \text{ g/mol}$
- CAS [56-81-5]
- EINECS-No.: 200-289-5
- Density:  $1,23 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point:  $17,8 \text{ °C}$
- Boiling point:  $> 130 \text{ °C}$
- Flash pt.  $199 \text{ °C}$
- Ignition temp.:  $\sim 429 \text{ °C}$
- Vapour pressure: (20 °C)  $\sim 8 \text{ hPa}$
- Dielectric const.: (20 °C) 42,5
- LD 50 (oral, rat):  $12600 \text{ mg/kg}$  (pure substance)
- Tariff number: 2905 45 00 00
- Applications: solvents, humectant, plasticizer, in food industry, cosmetics, in antifreeze compositions, in lubricant compositions.

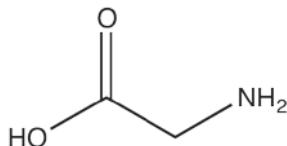
#### Specifications:

assay (G.C.) . . . . . 86 - 88 %  
density (20°/4°) . . . . . 1,221 - 1,231

identity (IR-spectrum) . . . . . passes test  
free acid (as  $CH_3COOH$ ) . . . . . max. 0,002 %  
free alkali (as  $NH_3$ ) . . . . . max. 0,0005 %  
chlorides (Cl) . . . . . max. 0,0001 %  
sulfates ( $SO_4$ ) . . . . . max. 0,0005 %  
ammonium ( $NH_4$ ) . . . . . max. 0,0005 %  
arsenic (As) . . . . . max. 0,00005 %  
heavy metals (as Pb) . . . . . max. 0,0001 %  
iron (Fe) . . . . . max. 0,0001 %  
aldehydes . . . . . max. 0,001 %  
fatty acid esters (as glycerol tributryrate) . . max. 0,05 %  
other org. matter (as  $CH_2=CHCHO$ ) . . . max. 0,005 %  
glycerolaldehyde . . . . . max. 0,003 %  
substances darkened by  $H_2SO_4$  . . . . . passes test  
residue on ignition . . . . . max. 0,005 %  
water (K.F.) . . . . . 12 - 14 %

Art. No.	Volume	Container
GL00231000	1 l	
GL0023005P	5 l	

## Glycine



- Synonyms: Aminoacetic acid, Glycocol
- $C_2H_5NO_2$
- $M = 75,07 \text{ g/mol}$
- CAS [56-40-6]
- EINECS-No.: 200-272-2
- Solub. in water: (20 °C): 225 g/l
- Melting point:  $232 - 236 \text{ °C}$  (decomposes)
- LD 50 (oral, rat):  $7930 \text{ mg/kg}$
- Tariff number: 2922 49 10 00

- Applications: analytical chemistry, in buffer solutions (for electrophoresis), for pharmaceuticals synthesizing, in food industry.

### AC0402 Glycine, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (titration with  $HClO_4$ , on dried sample) . . . . . 98,5 - 101 %  
identity (IR-spectrum) . . . . . passes test  
appearance of solution . . . . . passes test  
pH (5 %,  $H_2O$ ) . . . . . 5,9 - 6,4  
hydrolyzable substances . . . . . passes test  
chlorides (Cl) . . . . . max. 0,007 %

sulfates ( $SO_4$ ) . . . . . max. 0,0065 %  
heavy metals (as Pb) . . . . . max. 0,001 %  
ninhydrin-positive substances . . . . . max. 0,5 %  
residue on ignition . . . . . max. 0,1 %  
loss on drying (105 °C) . . . . . max. 0,2 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC04020250	250 g	
AC04021000	1 kg	
AC0402005P	5 kg	
AC0402025P	25 kg	

### AC0405 Glycine, crystallized, Pharmpur®, Ph Eur, USP, JP, GMP, suitable for use as excipient

assay (on dried sample) . . . . . 98,5 - 101 %  
identification . . . . . passes test  
appearance of solution . . . . . passes test  
pH (5 %,  $H_2O$ ) . . . . . 5,9 - 6,4  
hydrolyzable substances . . . . . passes test  
chlorides (Cl) . . . . . max. 0,007 %  
sulfates ( $SO_4$ ) . . . . . max. 0,0065 %

heavy metals (as Pb) . . . . . max. 0,002 %  
ninhydrin-positive substances . . . . . max. 0,5 %  
residue on ignition . . . . . max. 0,1 %  
loss on drying (105 °C, 2 h) . . . . . max. 0,5 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
AC04051000	1 kg	
AC0405025P	25 kg	

### AC0404 Glycine, reagent grade, ACS, Reag. Ph Eur

assay (titration with  $HClO_4$ ) . . . . . min. 99,7 %  
identity (IR-spectrum) . . . . . passes test  
insoluble in water . . . . . max. 0,003 %  
pH (5 %,  $H_2O$ ) . . . . . 5,9 - 6,3  
chlorides (Cl) . . . . . max. 0,003 %  
sulfates ( $SO_4$ ) . . . . . max. 0,0025 %  
ammonium ( $NH_4$ ) . . . . . max. 0,005 %  
copper (Cu) . . . . . max. 0,0001 %  
heavy metals (as Pb) . . . . . max. 0,001 %

iron (Fe) . . . . . max. 0,0001 %  
lead (Pb) . . . . . max. 0,0001 %  
hydrolyzable substances . . . . . passes test  
other ninhydrin positive substances (as glycine) . . . . . max. 0,1 %  
other aminoacids . . . . . max. 0,1 %  
substances darkened by  $H_2SO_4$  . . . . . passes test  
residue on ignition (600 °C) . . . . . max. 0,05 %  
water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
AC04040250	250 g	
AC04041000	1 kg	
AC0404005P	5 kg	
AC0404025P	25 kg	

### AC0406 Glycine, molecular biology grade

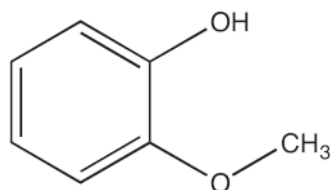
assay (titration with  $HClO_4$ ) . . . . . min. 99,7 %  
identity (IR-spectrum) . . . . . passes test  
absorbance of an aqueous solution  
0,1 M in a 1 cm cell at 260 nm . . . . . max. 0,01 AU

absorbance of an aqueous solution  
0,1 M in a 1 cm cell at 280 nm . . . . . max. 0,01 AU  
heavy metals (as Pb) . . . . . max. 0,001 %  
DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
AC04060100	100 g	
AC04061000	1 kg	

## Guaiacol

### GU0115 Guaiacol, synthesis grade



- Synonyms: O-Methoxyphenol, Methylcatechol, 1-Hydroxy-2-methoxybenzene, 2-Methoxyphenol, Pyrocatechol monomethyl ether, 2-Hydroxyanisole
- $C_7H_8O_2$
- M = 124,14 g/mol
- CAS [90-05-1]
- EINECS-No.: 201-964-7
- Density: 1,13 g/cm<sup>3</sup>
- Solub. in water: (30 °C): 15 g/l
- Melting point: 28 - 32 °C
- Boiling point: 205 °C
- Flash pt. 82 °C
- Ignition temp.: 750 °C
- Vapour pressure: (25 °C) 0,1 hPa
- LD 50 (oral, rat): 520 mg/kg
- EC-Index-No.: 604-031-00-6
- GHS-signal word: Warning

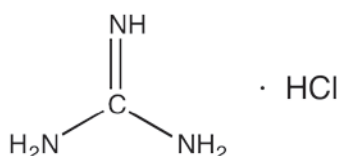
- GHS-H sentences: H302 - H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2909 50 00 90
- Applications: perfumery, in food industry.

#### Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,05 %  
 water (K.F.) . . . . .max. 0,3 %

Art. No.	Volume	Container
GU01150250	250 ml	0
GU01151000	1 l	0

## Guanidine hydrochloride



- Synonyms: Guanidinium chloride, Aminomethanamide hydrochloride, Carbamidine hydrochloride
- $CH_5N_3 \cdot HCl$
- M = 95,53 g/mol
- CAS [50-01-1]
- EINECS-No.: 200-002-3
- Solub. in water: (20 °C): soluble
- Melting point: 185 °C
- LD 50 (oral, rat): 475 mg/kg

- EC-Index-No.: 607-148-00-0
- GHS-signal word: Warning
- GHS-H sentences: H302 - H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2925 29 00 90
- Applications: synthesis of organic products, in biochemistry, for pharmaceuticals synthesizing.

### GU0060 Guanidine hydrochloride, synthesis grade



assay (argentometric) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,1 %  
 water (K.F.) . . . . .max. 0,5 %

Art. No.	Volume	Container
GU00600250	250 g	0
GU00601000	1 kg	0

### GU0061 Guanidine hydrochloride, molecular biology grade



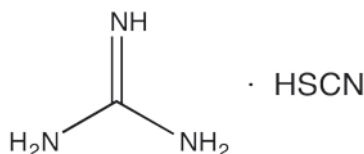
assay (titration with HClO4) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 pH (10 %, H<sub>2</sub>O) . . . . .5,5 - 6,5  
 absorbance of an aqueous solution  
 0,1 M in a 1 cm cell at 260 nm . . . . .max. 0,050 AU  
 absorbance of an aqueous solution  
 0,1 M in a 1 cm cell at 280 nm . . . . .max. 0,010 AU

heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,0005 %  
 residue on ignition (600 °C) . . . . .max. 0,05 %  
 water (K.F.) . . . . .max. 1 %  
 DNases, RNases, Proteases . . . . .non detected

Art. No.	Volume	Container
GU00610100	100 g	0
GU00611000	1 kg	0

## Guanidine thiocyanate

### GU0065 Guanidine thiocyanate, molecular biology grade



- Synonyms: Aminomethanamide thiocyanate, Carbamidine thiocyanate
- $C_2H_4N_4S$
- M = 118,16 g/mol
- CAS [593-84-0]
- EINECS-No.: 209-812-1
- Solub. in water: (20 °C): soluble
- Melting point: 118 °C
- EC-Index-No.: 615-004-00-3
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332 - H412 - EUH032
- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a
- Tariff number: 2925 29 00 90

- Applications: laboratory reagent (for biology), for pharmaceuticals synthesizing, in buffer solutions.
- Appearance: White to light yellow powder

#### Specifications:

assay (argentometric) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 appearance . . . . .passes test  
 copper (Cu) . . . . .max. 0,00005 %  
 iron (Fe) . . . . .max. 0,0005 %  
 lead (Pb) . . . . .max. 0,00005 %  
 zinc (Zn) . . . . .max. 0,0002 %  
 residue on ignition . . . . .max. 0,05 %  
 RNases . . . . .non detected

Art. No.	Volume	Container
GU00650250	250 g	0

# Gumara

## Gum arabic

G00020 Gum arabic, powder, extra pure, Pharpur®, Ph Eur, BP



- Synonyms: Acacia
- CAS [9000-01-5]
- EINECS-No.: 232-519-5
- Solub. in water: (20 °C): 500 g/l
- Flash pt. > 250 °C
- LD 50 (oral, rat): > 16000 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 1301 20 00 00

- Applications: emulsifier and thickener (in food industry), manufacture of adhesives, stabilizer, in pharma industry.

### Specifications:

identification . . . . .passes test  
 insoluble matter . . . . .max. 0,5 %  
 glucose and fructose . . . . .passes test  
 starch, dextrin and agar . . . . .passes test  
 sterculia gum . . . . .passes test  
 tannins . . . . .passes test  
 tragacanth . . . . .passes test

residue on ignition . . . . . max. 4 %  
 loss on drying (105 °C) . . . . . max. 15 %  
 microbiological assay . . . . .passes test  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
G000200100	100 g	Ⓢ
G000200500	500 g	Ⓢ
G000201000	1 kg	Ⓢ

- A
- B
- C
- D
- E
- F
- G**
- H
- I
- J
- K
- L
- M
- N
- O
- P
- Q
- R
- S
- T
- U
- V
- W
- X
- Y
- Z



## Hanus solution

## RE0020 Hanus solution, IBr solution 0,1 mol/l (0,2 N)



- Synonyms: Iodine solution according to Hanus
- IBr
- Density: 1,06 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. ~ 40 °C
- LD 50 (oral, rat): 3310 mg/kg (chief component)
- ADR: 8 CF1 II UN 2920
- IMDG: 8 II UN 2920
- IATA/ICAO: 8 II UN 2920

- GHS-signal word: Danger
- GHS-H sentences: H314 - H226
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for determination of: iodine.
- Appearance: Brown liquid

## Specifications:

suitability for det. of iodine  
index .....passes test

Art. No.	Volume	Container
RE00201000	1 l	0

## Hematoxylin, according to Harris

## HE0060 Hematoxylin, according to Harris

- C<sub>16</sub>H<sub>14</sub>O<sub>6</sub>
- Density: 1,075 g/cm<sup>3</sup>
- Solub. in water: miscible
- Tariff number: 3203 00 19 00
- Applications: for cytology.

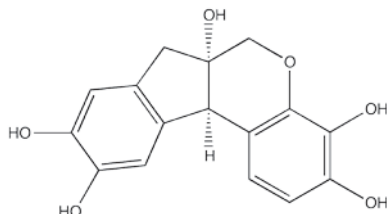
## Specifications:

for the histochemical demonstration of fetal hemoglobin

Art. No.	Volume	Container
HE00600500	500 ml	0
HE00601000	1 l	0
HE00602500	2,5 l	0

## Hematoxylin, C.I. 75290

## HE0070 Hematoxylin, C.I. 75290, pH indicator



- Synonyms: cis-(+)-7,11β-Dihydrobenz[β]indeno[1,2-d]pyran-3,4,6a,9,10(6H)pentol, Hydroxybrasilin
- C<sub>16</sub>H<sub>14</sub>O<sub>6</sub>
- M = 302,29 g/mol
- CAS [517-28-2]
- EINECS-No.: 208-237-3
- Solub. in water: (20 °C): slightly soluble
- Melting point: ~ 140 °C (release of crystalline water)
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332
- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a

- Tariff number: 3203 00 10 00
- Applications: manufacture of dyes (microscopy), manufacturing of inks.

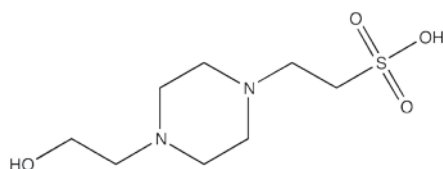
## Specifications:

pH range (yellow to violet) .....5,0 - 7,2

Art. No.	Volume	Container
HE00700005	5 g	0
HE00700025	25 g	0

## HEPES free acid

## HE0100 HEPES free acid, molecular biology grade



- Synonyms: 4-(2-Hydroxyethyl)-1-piperazineethanesulfonic acid, N-(2-Hydroxyethyl)-piperazine-N'-(2-ethanesulfonic acid)
- C<sub>8</sub>H<sub>18</sub>N<sub>2</sub>O<sub>4</sub>S
- M = 238,3 g/mol
- CAS [7365-45-9]
- EINECS-No.: 230-907-9
- Solub. in water: (20 °C): 400 g/l
- Melting point: 210 - 215 °C
- Tariff number: 2933 59 95 90
- Applications: in buffer solutions (for biology).

identity (IR-spectrum) .....passes test  
absorbance of an aqueous solution  
1 M in a 1 cm cell at 260 nm .....max. 0,05 AU  
absorbance of an aqueous solution  
1 M in a 1 cm cell at 280 nm .....max. 0,05 AU  
heavy metals (as Pb) .....max. 0,0005 %  
DNases, RNases, Proteases ..... non detected

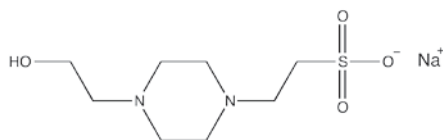
Art. No.	Volume	Container
HE01000025	25 g	0
HE01000250	250 g	0

## Specifications:

assay (acidimetric) .....min. 99 %

## HEPES, sodium salt

## HE0011 HEPES, sodium salt, molecular biology grade



- Synonyms: N-(2-Hydroxyethyl)-piperazine-N'-(2-ethanesulfonic acid) sodium salt
- C<sub>8</sub>H<sub>17</sub>N<sub>2</sub>NaO<sub>4</sub>S
- M = 260,28 g/mol
- CAS [75277-39-3]
- EINECS-No.: 278-169-7
- Tariff number: 2933 59 95 90
- Applications: laboratory reagent, analytical chemistry, in buffer solutions, for biology.

identity (IR-spectrum) .....passes test  
absorbance of an aqueous solution  
(2 %) in a 1 cm cell at 250 nm .....max. 0,06 AU  
chlorides (Cl) .....max. 0,005 %  
sulfates (SO<sub>4</sub>) .....max. 0,005 %  
heavy metals (as Pb) .....max. 0,0005 %  
loss on drying (105 °C) .....max. 0,5 %

Art. No.	Volume	Container
HE00110025	25 g	0

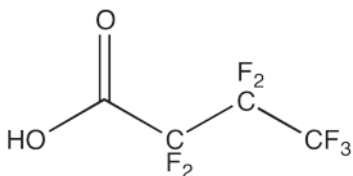
## Specifications:

assay (titr. with HClO<sub>4</sub>, referred to dried sample) .....min. 99 %

# Heptaf

## Heptafluorobutyric acid

### AC1235 Heptafluorobutyric acid, 99,5%



- Synonyms: Perfluorobutyric acid, HFBA, Edman reagent No. 3
- $C_4HF_7O_2$
- $M = 214,04 \text{ g/mol}$
- CAS [375-22-4]
- EINECS-No.: 206-786-3
- Density:  $1,645 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point:  $-17,5 \text{ °C}$
- Boiling point: (755mm Hg)  $120 \text{ °C}$
- ADR: 8 C3 III UN 3265
- IMDG: 8 III UN 3265
- IATA/ICAO: 8 III UN 3265

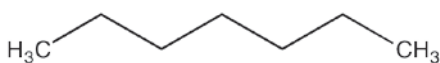
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 90 80 90
- Applications: synthesis of organic products.

#### Specifications:

assay (G.C.) ..... min. 99,5 %

Art. No.	Volume	Container
AC12350100	100 ml	0

## n-Heptane



- Synonyms: n-Dipropylmethane, n-Heptylhydride
- $C_7H_{16}$
- $M = 100,21 \text{ g/mol}$
- CAS [142-82-5]
- EINECS-No.: 205-563-8
- Density:  $0,68 \text{ g/cm}^3$
- Solub. in water: (20 °C): almost non-miscible
- Melting point:  $-90,6 \text{ °C}$
- Boiling point:  $98,4 \text{ °C}$
- Flash pt.  $-4 \text{ °C}$
- Ignition temp.:  $215 \text{ °C}$
- Vapour pressure: (20 °C)  $48 \text{ hPa}$
- Refraction index: (n 20 °C/D)  $1,3876$
- Dielectric const.: (20 °C)  $1,9$

- LD 50 (oral, rat):  $> 15000 \text{ mg/kg}$
- EC-Index-No.: 601-008-00-2
- ADR: 3 F1 II UN 1206
- IMDG: 3 II UN 1206
- IATA/ICAO: 3 II UN 1206
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H410 - H315 - H336
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2901 10 00 00
- Applications: analytical chemistry, as gasoline additive.

### HE0123 n-Heptane, 95%, synthesis grade



assay (G.C.) ..... min. 95 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/4°) .....  $0,683 - 0,685$   
 residue on evaporation ..... max.  $0,003 \text{ %}$   
 water (K.F.) ..... max.  $0,02 \text{ %}$

Art. No.	Volume	Container
HE01231000	1 l	0
HE01232500	2,5 l	0
HE0123025L	25 l	0

### HE0125 n-Heptane, 99%, extra pure



assay (G.C.) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/4°) .....  $0,683 - 0,685$   
 acidity ..... max.  $0,001 \text{ meq/g}$   
 iron (Fe) ..... max.  $0,00005 \text{ %}$   
 copper (Cu) ..... max.  $0,00002 \text{ %}$   
 lead (Pb) ..... max.  $0,00002 \text{ %}$   
 nickel (Ni) ..... max.  $0,00002 \text{ %}$

sulfur compounds (as S) ..... max.  $0,0005 \text{ %}$   
 substances darkened by  $H_2SO_4$  ..... passes test  
 residue on evaporation ..... max.  $0,001 \text{ %}$   
 water (K.F.) ..... max.  $0,02 \text{ %}$

Art. No.	Volume	Container
HE01251000	1 l	0
HE01252500	2,5 l	0
HE0125005L	5 l	0
HE0125025A	25 l	0
HE0125200L	200 l	0

### HE0127 n-Heptane, 99%, reagent grade, Reag. Ph Eur



assay (G.C.) ..... min. 99,2 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/20°) .....  $0,683 - 0,686$   
 boiling range (min. 95 %) .....  $97 - 98 \text{ °C}$   
 colour (Hazen) ..... max. 10  
 refractive index  $n_{20/D}$  .....  $1,387 - 1,388$   
 free acid (as  $CH_3COOH$ ) ..... max.  $0,0005 \text{ %}$   
 aluminium (Al) ..... max.  $0,00001 \text{ %}$   
 barium (Ba) ..... max.  $0,00001 \text{ %}$   
 boron (B) ..... max.  $0,00002 \text{ %}$   
 cadmium (Cd) ..... max.  $0,00005 \text{ %}$   
 calcium (Ca) ..... max.  $0,00005 \text{ %}$   
 chromium (Cr) ..... max.  $0,00002 \text{ %}$

cobalt (Co) ..... max.  $0,000002 \text{ %}$   
 copper (Cu) ..... max.  $0,000002 \text{ %}$   
 iron (Fe) ..... max.  $0,00001 \text{ %}$   
 lead (Pb) ..... max.  $0,00001 \text{ %}$   
 magnesium (Mg) ..... max.  $0,00001 \text{ %}$   
 manganese (Mn) ..... max.  $0,00002 \text{ %}$   
 nickel (Ni) ..... max.  $0,00002 \text{ %}$   
 tin (Sn) ..... max.  $0,00001 \text{ %}$   
 zinc (Zn) ..... max.  $0,00001 \text{ %}$   
 aromatic hydrocarbons (as  $C_6H_6$ ) ..... max.  $0,1 \text{ %}$   
 sulfur compounds (as S) ..... max.  $0,005 \text{ %}$   
 substances darkened by  $H_2SO_4$  ..... passes test  
 residue on evaporation ..... max.  $0,0005 \text{ %}$

water (K.F.) ..... max.  $0,01 \text{ %}$

Art. No.	Volume	Container
HE01271000	1 l	0
HE01272500	2,5 l	0
HE0127007E	7 l	0
HE0127025A	25 l	0
HE0127025S	25 l	0
HE0127200L	200 l	0

### HE0131 n-Heptane, 99%, HPLC grade



assay (G.C.) ..... min. 99,3 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/4°) .....  $0,683 - 0,685$   
 acidity ..... max.  $0,0002 \text{ meq/g}$   
 alkalinity ..... max.  $0,0002 \text{ meq/g}$   
 residue on evaporation ..... max.  $0,0002 \text{ %}$   
 water (K.F.) ..... max.  $0,01 \text{ %}$

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 200 nm: .....  $20 \text{ % } 0,699 \text{ AU}$   
 210 nm: .....  $50 \text{ % } 0,301 \text{ AU}$   
 227 nm: .....  $90 \text{ % } 0,046 \text{ AU}$   
 Microfiltered through membranes of pore diameter  $0,22 \text{ }\mu\text{m}$

Art. No.	Volume	Container
HE01311000	1 l	0
HE01312500	2,5 l	0
HE01314000	4 l	0
HE0131007E	7 l	0
HE0131025S	25 l	0

## HE0126 n-Heptane, 99%, anhydrous (max. 0,003% H<sub>2</sub>O)



assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 0,683 - 0,686  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity. . . . . max. 0,0005 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,00002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %

chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,0001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) . . . . . max. 0,1 %

sulfur compounds (as S) . . . . . max. 0,005 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,003 %

Art. No.	Volume	Container
HE01260100	100 ml	
HE01260500	500 ml	

## HE0135 n-Heptane, 99%, ASTM

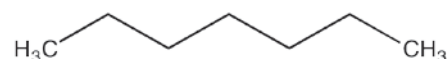


assay (G.C.) . . . . . min. 99,75 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,683 - 0,685  
 isooctane (G.C.) . . . . . max. 0,1 %  
 lead (Pb) . . . . . max. 0,002 g/gal

Art. No.	Volume	Container
HE01352500	2,5 l	
HE0135025A	25 l	
HE0135200L	200 l	

## Heptane, fraction from petroleum

### HE0120 Heptane, fraction from petroleum, extra pure



- C<sub>7</sub>H<sub>16</sub>
- M = 100,21 g/mol
- CAS [142-82-5]
- EINECS-No.: 205-563-8
- Density: 0,715 g/cm<sup>3</sup>
- Boiling point: 93 - 99 °C
- Flash pt. -4 °C
- Vapour pressure: (20 °C) 48 hPa
- Dielectric const.: (20 °C) 1,9
- EC-Index-No.: 601-008-00-2
- ADR: 3 F 1 II UN 1206
- IMDG: 3 II UN 1206
- IATA/ICAO: 3 II UN 1206
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H410 - H315 - H336
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2901 10 00 00
- Applications: analytical chemistry, for spectroscopy.

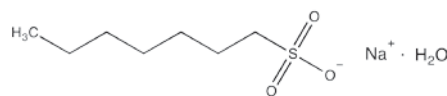
density (20°/4°) . . . . . 0,680 - 0,720  
 acidity. . . . . max. 0,001 meq/g  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00005 %  
 lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 sulfur compounds (as S) . . . . . max. 0,005 %  
 thiophene and homologous (as C<sub>4</sub>H<sub>4</sub>S) . max. 0,0005 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,02 %

Art. No.	Volume	Container
HE01201000	1 l	
HE01202500	2,5 l	
HE0120005L	5 l	
HE0120025A	25 l	
HE0120025S	25 l	
HE0120030S	30 l	
HE0120200E	200 l	

**Specifications:**  
 boiling range. . . . . 93 - 99 °C

## Heptane sulfonic acid, sodium salt monohydrate

### AC1242 1-Heptane sulfonic acid, sodium salt monohydrate, HPLC grade



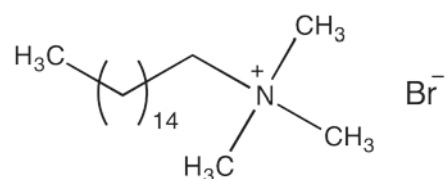
- Synonyms: Sodium 1-heptylsulfonate monohydrate
- C<sub>7</sub>H<sub>15</sub>NaO<sub>3</sub>S·H<sub>2</sub>O
- M = 220,26 g/mol
- CAS [207300-90-1]
- EINECS-No.: 245-210-5
- Solub. in water: (20 °C): freely soluble
- Tariff number: 2904 10 00 90
- Applications: analytical chemistry, laboratory reagent, chromatography.

insoluble matter . . . . . passes test  
 max. absorbance of an aqueous sol. 0,25 M in a 1 cm cell at wavelength: . . . . . absorbance:  
 210 nm. . . . . 0,1 AU  
 220 nm. . . . . 0,06 AU  
 230 nm. . . . . 0,04 AU  
 260 nm. . . . . 0,02 AU

Art. No.	Volume	Container
AC12420025	25 g	
AC12420100	100 g	

**Specifications:**  
 assay (acidimetric) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test

## Hexadecyltrimethylammonium bromide



- Synonyms: Cetrinium bromide, Trimethylhexadecylammonium bromide, N-Cetyl-N,N,N-trimethylammonium bromide, CTAB
- C<sub>19</sub>H<sub>42</sub>BrN
- M = 364,46 g/mol
- CAS [57-09-0]
- EINECS-No.: 200-311-3
- Solub. in water: (20 °C): 3 g/l
- Melting point: 237 - 243 °C
- LD 50 (oral, rat): 410 mg/kg

- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning
- GHS-H sentences: H400 - H302 - H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2923 90 00 90
- Applications: chromatography, detergent, antiseptic, laboratory reagent, synthesis of organic products.

# Hexade

## BR0168 Hexadecyltrimethylammonium bromide, extra pure

assay (argentometric) .....min. 96 %

Art. No.	Volume	Container
BR01680025	25 g	
BR01680250	250 g	

## BR0170 Hexadecyltrimethylammonium bromide, HPLC grade

assay (argentometric) .....min. 97 %  
 identity (IR-spectrum) .....passes test  
 insoluble matter .....passes test

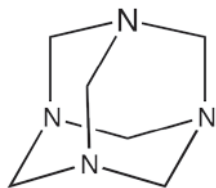
maximum absorbance of a solution in methanol (10%)  
 in a 1,0 cm cell at wavelength: absorbance:  
 240 nm. .... 0,07 AU  
 250 nm. .... 0,05 AU

260 nm. .... 0,04 AU

Art. No.	Volume	Container
BR01700025	25 g	

## Hexamethylenetetramine

### HE0200 Hexamethylenetetramine, synthesis grade



- Synonyms: Hexamine, Methenamine, Formin, Urotropin
- $C_6H_{12}N_4$
- M = 140,19 g/mol
- CAS [100-97-0]
- EINECS-No.: 202-905-8
- Solub. in water: (20 °C): 100 g/l
- LD 50 (oral, rat): 9200 mg/kg
- EC-Index-No.: 612-101-00-2
- ADR: 4.1 F1 III UN 1328
- IMDG: 4.1 III UN 1328
- IATA/ICAO: 4.1 III UN 1328
- GHS-signal word: Warning
- GHS-H sentences: H228 - H317
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P321 - P501a

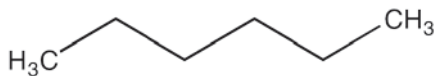
- Tariff number: 2933 69 20 00
- Applications: manufacture of adhesives, in the rubber industry, corrosion inhibitor (steel), in explosive compositions, stabilizer.

#### Specifications:

assay (titration with  $HClO_4$ ) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 residue on ignition .....max. 0,05 %

Art. No.	Volume	Container
HE02000500	500 g	
HE02001000	1 kg	

## n-Hexane



- Synonyms: n-Caproylhydride, n-Hexylhydride
- $C_6H_{14}$
- M = 86,18 g/mol
- CAS [110-54-3]
- EINECS-No.: 203-777-6
- Density: 0,66 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,0095 g/l
- Melting point: -94,3 °C
- Boiling point: 69 °C
- Flash pt. -22 °C
- Ignition temp.: 240 °C
- Vapour pressure: (20 °C) 160 hPa

- Dielectric const.: (20 °C) 1,8
- LD 50 (oral, rat): 28710 mg/kg
- EC-Index-No.: 601-037-00-0
- ADR: 3 F1 II UN 1208
- IMDG: 3 II UN 1208
- IATA/ICAO: 3 II UN 1208
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H361f - H373 - H315 - H336 - H411
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2901 10 00 00

### HE0232 n-Hexane, min. 99%, reagent grade, ACS

assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) ..... 0,659 - 0,662  
 appearance ..... clear  
 colour (Hazen) .....max. 10  
 acidity or alkalinity .....max. 0,0002 meq/g  
 aluminium (Al) .....max. 0,00005 %  
 barium (Ba) .....max. 0,00001 %  
 boron (B) .....max. 0,000002 %  
 cadmium (Cd) .....max. 0,000005 %  
 calcium (Ca) .....max. 0,00005 %  
 chromium (Cr) .....max. 0,000002 %

cobalt (Co) .....max. 0,000002 %  
 copper (Cu) .....max. 0,000002 %  
 iron (Fe) .....max. 0,00001 %  
 lead (Pb) .....max. 0,00001 %  
 magnesium (Mg) .....max. 0,00001 %  
 manganese (Mn) .....max. 0,000002 %  
 nickel (Ni) .....max. 0,000002 %  
 tin (Sn) .....max. 0,00001 %  
 zinc (Zn) .....max. 0,00001 %  
 aromatic hydrocarbons (as  $C_6H_6$ ) .....max. 0,01 %  
 sulfur compounds (as S) .....max. 0,005 %

tiophene ( $C_4H_4S$ ) .....max. 0,0001 %  
 substances darkened by  $H_2SO_4$  .....passes test  
 residue on evaporation .....max. 0,0005 %  
 water (K.F.) .....max. 0,005 %

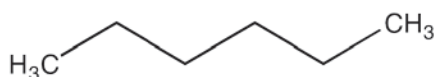
Art. No.	Volume	Container
HE02321000	1 l	
HE02322500	2,5 l	
HE0232025S	25 l	

### HE0242 n-Hexane, 99%, HPLC grade

assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) ..... 0,660 - 0,662  
 acidity .....max. 0,0002 meq/g  
 alkalinity .....max. 0,0002 meq/g  
 residue on evaporation .....max. 0,0001 %  
 water (K.F.) .....max. 0,01 %

min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 200 nm. .... 20 % 0,699 AU  
 210 nm. .... 50 % 0,301 AU  
 230 nm. .... 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
HE02421000	1 l	
HE02422500	2,5 l	
HE02424000	4 l	
HE0242025S	25 l	
HE0242100S	100 l	



- Synonyms: n-Caproylhydride, n-Hexylhydride
- $C_6H_{14}$
- M = 86,18 g/mol
- CAS [110-54-3]
- EINECS-No.: 203-777-6
- Density: 0,66 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,0095 g/l
- Melting point: -94,3 °C
- Boiling point: 69 °C
- Flash pt. -22 °C
- Ignition temp.: 240 °C
- Vapour pressure: (20 °C) 160 hPa
- Dielectric const.: (20 °C) 1,8

- LD 50 (oral, rat): 28710 mg/kg
- EC-Index-No.: 601-037-00-0
- ADR: 3 F1 II UN 1208
- IMDG: 3 II UN 1208
- IATA/ICAO: 3 II UN 1208
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H361f - H373 - H315 - H336 - H411
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2901 10 00 00
- Applications: chromatography, analytical chemistry, determining refractive index of minerals.

### HE0227 n-Hexane, 96%, extra pure



assay (G.C.) . . . . .min. 96 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,659 - 0,662  
 acidity . . . . .max. 0,0005 meq/g  
 copper (Cu) . . . . .max. 0,00002 %  
 iron (Fe) . . . . .max. 0,00005 %  
 lead (Pb) . . . . .max. 0,00002 %  
 nickel (Ni) . . . . .max. 0,00002 %  
 sulfur compounds (as S) . . . . .max. 0,01 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,01 %

Art. No.	Volume	Container
HE02271000	1 l	
HE02272500	2,5 l	
HE0227005L	5 l	
HE0227007E	7 l	
HE0227025A	25 l	
HE0227025S	25 l	
HE0227030S	30 l	
HE0227200L	200 l	

### HE0228 n-Hexane, 96%, reagent grade, ACS, Reag. Ph Eur



assay (G.C.) . . . . .min. 96,0 %  
 total isomer content (G.C.) . . . . .min. 98,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/20°) . . . . .0,659 - 0,663  
 colour (Hazen) . . . . .max. 10  
 refractive index n<sub>20/D</sub> . . . . .1,375 - 1,376  
 boiling range (min. 95 %) . . . . .67 - 69 °C  
 acidity . . . . .max. 0,0002 meq/g  
 alkalinity . . . . .max. 0,0002 meq/g  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %

cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) . . . . .max. 0,01 %  
 sulfur compounds (as S) . . . . .max. 0,005 %  
 thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . .passes test  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,01 %

min. transmission in a 1 cm cell  
 between 260 and 420 nm . . . . .97 %

Art. No.	Volume	Container
HE02281000	1 l	
HE02282500	2,5 l	
HE0228005L	5 l	
HE0228007E	7 l	
HE0228025A	25 l	
HE0228025S	25 l	
HE0228030S	30 l	

### HE0234 n-Hexane, 96%, Multisolvent® HPLC grade ACS UV-VIS



assay (G.C.) . . . . .min. 96 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,659 - 0,662  
 appearance . . . . .clear  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,0002 meq/g  
 aluminium (Al) . . . . .max. 0,00001 %  
 barium (Ba) . . . . .max. 0,000001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000001 %  
 calcium (Ca) . . . . .max. 0,00003 %  
 chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,000002 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,000001 %

manganese (Mn) . . . . .max. 0,000001 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,000001 %  
 aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) . . . . .max. 0,01 %  
 sulfur compounds (as S) . . . . .max. 0,005 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test  
 residue on evaporation . . . . .max. 0,0002 %  
 water (K.F.) . . . . .max. 0,005 %  
 liquid chromatography suitability  
 absorbance . . . . .passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 200 nm . . . . .10 % 1,000 AU  
 210 nm . . . . .40 % 0,398 AU  
 217 nm . . . . .70 % 0,155 AU  
 225 nm . . . . .80 % 0,097 AU

245 nm . . . . .98 % 0,009 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
HE02341000	1 l	
HE02342500	2,5 l	
HE02344000	4 l	
HE0234007E	7 l	
HE0234020S	20 l	
HE0234025S	25 l	
HE0234030S	30 l	
HE0234185E	185 l	

### HE0238 n-Hexane, 96%, for GC residue analysis



assay (G.C.) . . . . .min. 96 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,659 - 0,662  
 residue on evaporation . . . . .max. 0,0001 %  
 water (K.F.) . . . . .max. 0,01 %  
 Suitable for organohalogenated pesticide and dioxins,  
 furans and PCBs residue analysis. ECD, from 1,2,4-tri-  
 chlorobenzene to decachlorobiphenyl, no peaks are  
 obtained greater than 3 pg/ml as lindane. No peaks  
 are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
HE02381000	1 l	
HE02382500	2,5 l	
HE02384000	4 l	
HE0238007E	7 l	
HE0238025S	25 l	

# Hexane

## HE0239 n-Hexane, 96%, GC ultra-trace analysis grade



assay (G.C.) . . . . .min. 96 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,659 - 0,662  
 residue on evaporation . . . . .max. 0,0001 %  
 water (K.F.) . . . . .max. 0,01 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 2 µg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl. Suitable for highly volatile halogenated hydrocarbons trace analysis. ECD, from dichloromethane to 1,2,4-trichlorobenzene, no peaks are obtained greater than 1 ng/ml as tetrachloromethane.

Suitable for pesticide and polycyclic aromatic hydrocarbons residue analysis. FID, from 1-octanol to 1-tetradecanol, no peaks are obtained greater than 2 ng/ml as 1-tetradecanol. No peaks are obtained in vicinity of pyrene.

Art. No.	Volume	Container
HE02391000	1 l	
HE02392500	2,5 l	
HE02394000	4 l	

## HE0233 n-Hexane, 96%, anhydrous (max. 0,002% H<sub>2</sub>O)



assay (G.C.) . . . . .min. 96 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/20°) . . . . .0,659 - 0,663  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,0002 meq/g  
 alkalinity . . . . .max. 0,0002 meq/g  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %

chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) . . . . .max. 0,01 %

sulfur compounds (as S) . . . . .max. 0,005 %  
 thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . .passes test  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test  
 residue on evaporation . . . . .max. 0,0005 %  
 water (K.F.) . . . . .max. 0,002 %

Art. No.	Volume	Container
HE02331000	1 l	

## Hexane, fraction from petroleum

- C<sub>6</sub>H<sub>14</sub>
- M = 86,18 g/mol
- CAS [92112-69-1]
- EINECS-No.: 295-570-2
- Density: 0,67 g/cm<sup>3</sup>
- Solub. in water: (20 °C): insoluble
- Boiling point: 65 - 70 °C
- Flash pt. -22 °C

- Vapour pressure: (20 °C) 160 hPa
- Refraction index: (n 20 °C/D) 1,380
- EC-Index-No.: 601-037-00-0
- ADR: 3 F1 II UN 1208
- IMDG: 3 II UN 1208
- IATA/ICAO: 3 II UN 1208
- GHS-signal word: Danger

- GHS-H sentences: H224 - H304 - H361 - H373 - H315 - H336 - H411
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2901 10 00 00
- Applications: analytical chemistry, for spectroscopy, manufacture of dyes.
- Appearance: Colourless clear liquid

## HE0219 Hexane, fraction from petroleum, synthesis grade



boiling range. . . . .65 - 70 °C  
 residue on evaporation . . . . .max. 0,003 %  
 water (K.F.) . . . . .max. 0,02 %

Art. No.	Volume	Container
HE02191000	1 l	
HE02192500	2,5 l	
HE0219005L	5 l	
HE0219007E	7 l	
HE0219025L	25 l	
HE0219025S	25 l	

## HE0220 Hexane, fraction from petroleum, extra pure



boiling range. . . . .65 - 70 °C  
 acidity . . . . .max. 0,0005 meq/g  
 copper (Cu) . . . . .max. 0,00002 %  
 iron (Fe) . . . . .max. 0,00005 %  
 lead (Pb) . . . . .max. 0,00002 %  
 nickel (Ni) . . . . .max. 0,00002 %  
 sulfur compounds (as S) . . . . .max. 0,005 %  
 residue on evaporation . . . . .max. 0,001 %

water (K.F.) . . . . .max. 0,02 %

Art. No.	Volume	Container
HE02201000	1 l	
HE02202500	2,5 l	
HE0220005L	5 l	
HE0220025A	25 l	
HE0220025S	25 l	

## HE0222 Hexane, fraction from petroleum, reagent grade



boiling range. . . . .65 - 70 °C  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,0002 meq/g  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %

iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) . . . . .max. 0,01 %  
 sulfur compounds (as S) . . . . .max. 0,005 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test  
 residue on evaporation . . . . .max. 0,0005 %

water (K.F.) . . . . .max. 0,01 %

Art. No.	Volume	Container
HE02221000	1 l	
HE02222500	2,5 l	
HE0222005L	5 l	
HE0222007E	7 l	
HE0222025S	25 l	

## HE0221 Hexane, fraction from petroleum, Multisolvent® HPLC grade ACS



boiling range. . . . .	65 - 70 °C	manganese (Mn). . . . .	max. 0,00001 %	230 nm. . . . .	90 % 0,046 AU
appearance . . . . .	clear	nickel (Ni) . . . . .	max. 0,00002 %	254 nm. . . . .	99 % 0,004 AU
colour (Hazen) . . . . .	max. 10	tin (Sn) . . . . .	max. 0,00001 %	Microfiltered through membranes of pore diameter 0,22 µm	
acidity. . . . .	max. 0,0002 meq/g	zinc (Zn) . . . . .	max. 0,00001 %		
aluminium (Al) . . . . .	max. 0,00001 %	aromatic hydrocarbons (as C <sub>6</sub> H <sub>6</sub> ) . . . . .	max. 0,01 %		
barium (Ba) . . . . .	max. 0,000001 %	sulfur compounds (as S) . . . . .	max. 0,005 %		
boron (B) . . . . .	max. 0,000002 %	substances darkened by H <sub>2</sub> SO <sub>4</sub> . . . . .	passes test		
cadmium (Cd) . . . . .	max. 0,000001 %	residue on evaporation. . . . .	max. 0,0002 %		
calcium (Ca) . . . . .	max. 0,00003 %	water (K.F.) . . . . .	max. 0,01 %		
chromium (Cr) . . . . .	max. 0,000002 %	liquid chromatography suitability			
cobalt (Co) . . . . .	max. 0,000002 %	absorbance . . . . .	passes test		
copper (Cu) . . . . .	max. 0,000002 %	min. transmission/max. absorbance in a 1,0 cm cell at wavelength: . . . . .	T(%) A (AU)		
iron (Fe) . . . . .	max. 0,000002 %	200 nm. . . . .	10 % 1,000 AU		
lead (Pb) . . . . .	max. 0,00001 %	210 nm. . . . .	30 % 0,523 AU		
magnesium (Mg) . . . . .	max. 0,00001 %				

Art. No.	Volume	Container
HE02211000	1 l	0
HE02212500	2,5 l	0
HE0221007E	7 l	0
HE0221025S	25 l	0

## HE0223 Hexane, fraction from petroleum, for GC residue analysis

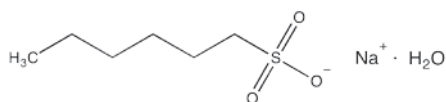


residue on evaporation . . . . .max. 0,0001 %  
 water (K.F.) . . . . .max. 0,01 %  
 Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 3 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
HE02231000	1 l	0
HE02232500	2,5 l	0

## 1-Hexane sulfonic acid, sodium salt monohydrate

## AC1247 1-Hexane sulfonic acid, sodium salt monohydrate, HPLC grade



- Synonyms: Sodium 1-hexylsulfonate monohydrate
- C<sub>6</sub>H<sub>13</sub>NaO<sub>3</sub>S·H<sub>2</sub>O
- M = 206,24 g/mol
- CAS [207300-91-2]
- EINECS-No.: 220-601-3
- Solub. in water: (20 °C): freely soluble
- Tariff number: 2904 10 00 90
- Applications: analytical chemistry, chromatography.

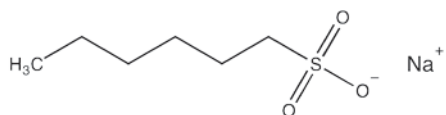
**Specifications:**  
 assay (acidimetric) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test

insoluble matter . . . . .passes test  
 max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength: . . . . .absorbance:  
 210 nm. . . . .0,1 AU  
 220 nm. . . . .0,06 AU  
 230 nm. . . . .0,04 AU  
 260 nm. . . . .0,02 AU

Art. No.	Volume	Container
AC12470025	25 g	0
AC12470100	100 g	0

## 1-Hexane sulfonic acid, sodium salt, HPLC solutions

## AC1245 1-Hexane sulfonic acid, sodium salt, solution 0,1 mol/l, HPLC grade



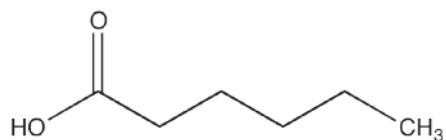
- C<sub>6</sub>H<sub>13</sub>NaO<sub>3</sub>S
- M = 188,22 g/mol
- CAS [2832-45-3]
- EINECS-No.: 220-601-3
- Tariff number: 2904 10 00 90
- Applications: laboratory reagent, analytical chemistry, chromatography.

**Specifications:**  
 factor limits. . . . .0,995 - 1,005

pH (20 °C) . . . . .3,4 - 3,6  
 absorbance of an aqueous solution 0,005 M in a 1 cm cell at 254 nm . . . . .< 0,02 AU  
 Contains acetic acid as preservative  
 To obtain a solution 0,005 M dilute 1:20 with the appropriate mixture of water-solvent

Art. No.	Volume	Container
AC12450250	250 ml	0

## Hexanoic acid



- Synonyms: Caproic acid
- C<sub>6</sub>H<sub>12</sub>O<sub>2</sub>
- M = 116,16 g/mol
- CAS [142-62-1]
- EINECS-No.: 205-550-7
- Density: 0,93 g/cm<sup>3</sup>
- Solub. in water: (20 °C): sparingly miscible
- Melting point: ~ -3 °C
- Boiling point: ~ 206 °C
- Flash pt. 102 °C
- Ignition temp.: 380 °C
- Vapour pressure: (20 °C) 0,3 hPa

- Refraction index: (n<sub>D</sub> 20 °C/D) 1,4162
- LD 50 (oral, rat): > 2000 mg/kg
- ADR: 8 C3 III UN 2829
- IMDG: 8 III UN 2829
- IATA/ICAO: 8 III UN 2829
- GHS-signal word: Danger
- GHS-H sentences: H311 - H314 - H302
- GHS-P sentences: P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2915 90 80 90
- Applications: analytical chemistry, chromatography, perfumery.

## AC0680 Hexanoic acid, synthesis grade



assay (G.C.) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,926 - 0,927  
 acidity index . . . . .473 - 482

iodine index . . . . .max. 0,2  
 saponifiable impurities . . . . .max. 1 %  
 residue on ignition . . . . .max. 0,05 %

Art. No.	Volume	Container
AC06801000	1 l	0

# Hexano

## AC0682 Hexanoic acid, extra pure, Reag. Ph Eur

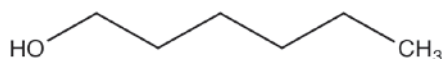
assay (G.C.) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,925 - 0,927  
 acidity index . . . . .481 - 483  
 refractive index n<sub>20</sub>/D . . . . .1,416 - 1,468

iodine index . . . . .max. 0,1  
 saponifiable impurities . . . . .max. 0,1 %  
 heavy metals (as Pb) . . . . .max. 0,0001 %  
 iron (Fe) . . . . .max. 0,0001 %  
 residue on ignition . . . . .max. 0,01 %

Art. No.	Volume	Container
AC06820250	250 ml	0

## 1-Hexanol

### AL0270 1-Hexanol, synthesis grade



- Synonyms: n-Hexyl alcohol
- C<sub>6</sub>H<sub>14</sub>O
- M = 102,18 g/mol
- CAS [111-27-3]
- EINECS-No.: 203-852-3
- Density: 0,82 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 5,8 g/l
- Melting point: -45 °C
- Boiling point: 157 °C
- Flash pt. 62 °C
- Ignition temp.: 285 °C
- Vapour pressure: (20 °C) 1 hPa
- Refraction index: (n 20 °C/D) 1,4179
- LD 50 (oral, rat): 720 mg/kg
- EC-Index-No.: 603-059-00-6
- ADR: 3 F1 III UN 2282
- IMDG: 3 III UN 2282
- IATA/ICAO: 3 III UN 2282

- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2905 19 00 99
- Applications: synthesis of organic products, for pharmaceuticals synthesizing.

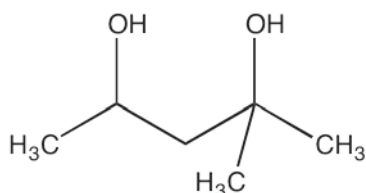
#### Specifications:

assay (G.C.) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,818 - 0,819  
 residue on evaporation . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AL02701000	1 l	0

## Hexylene glycol

### HE0250 Hexylene glycol, synthesis grade



- Synonyms: 2-Methyl-2,4-pentanediol
- C<sub>6</sub>H<sub>14</sub>O<sub>2</sub>
- M = 118,18 g/mol
- CAS [107-41-5]
- EINECS-No.: 203-489-0
- Density: 0,92 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -40 °C
- Boiling point: 196 °C
- Flash pt. 93 °C
- Ignition temp.: 425 °C
- Vapour pressure: (20 °C) 0,06 hPa
- Refraction index: (n 20 °C/D) 1,4270
- LD 50 (oral, rat): 4000 mg/kg
- EC-Index-No.: 603-053-00-3
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2905 39 10 00
- Applications: synthesis of organic products, for pharmaceuticals synthesizing, cosmetics.

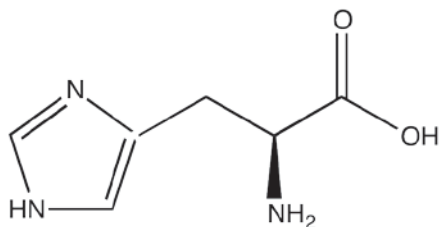
#### Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,921 - 0,923  
 free acid (as CH<sub>3</sub>COOH) . . . . .max. 0,01 %  
 residue on ignition . . . . .max. 0,01 %  
 water (K.F.) . . . . .max. 0,5 %

Art. No.	Volume	Container
HE02501000	1 l	0

## L-Histidine

### HI0395 L-Histidine, extra pure, Pharmapur®, Ph Eur, BP, USP



- Synonyms: L-3-Imidazol-4-alanine
- C<sub>6</sub>H<sub>9</sub>N<sub>3</sub>O<sub>2</sub>
- M = 155,16 g/mol
- CAS [71-00-1]
- EINECS-No.: 200-745-3
- Solub. in water: (20 °C): 38,2 g/l
- Melting point: 272 - 273 °C (decomposes)
- LD 50 (oral, rat): > 5110 mg/kg
- Tariff number: 2933 21 00 90
- Applications: in biochemistry, for pharmaceuticals synthesizing, in food industry, in pharma industry.

appearance of solution . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,03 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,03 %  
 ammonium (NH<sub>4</sub>) . . . . .max. 0,02 %  
 heavy metals (as Pb) . . . . .max. 0,0015 %  
 iron (Fe) . . . . .max. 0,003 %  
 ninhydrin-positive substances . . . . .max. 0,5 %  
 related substances . . . . .max. 0,2 %  
 residue on ignition . . . . .max. 0,4 %  
 loss on drying (105 °C) . . . . .max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

#### Specifications:

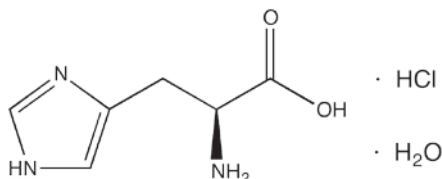
assay (acidimetric, on dried sample) . . . . .98,5 - 101,5 %  
 identity (IR-spectrum) . . . . .passes test  
 specific rotation ([α]<sub>20</sub><sup>D</sup>, c = 11, HCl 3,3 mol/l) . . . . .+ 11,4 ° - + 12,4 °

Art. No.	Volume	Container
HI03950025	25 g	0
HI03950100	100 g	0
HI03951000	x 1 kg	0



## L-Histidine hydrochloride monohydrate

## HI0405 L-Histidine hydrochloride monohydrate, extra pure, Pharpur®, Ph Eur, BP



- Synonyms: (S)- $\alpha$ -Amino-1H-imidazole-4-propanoic acid
- C<sub>6</sub>H<sub>9</sub>N<sub>3</sub>O<sub>2</sub>·HCl·H<sub>2</sub>O
- M = 209,63 g/mol
- CAS [5934-29-2]
- EINECS-No.: 211-438-9
- Solub. in water: (20 °C): 169,9 g/l
- Melting point: 259 °C (decomposes)
- Tariff number: 2933 21 00 90
- Applications: in biochemistry, for pharmaceuticals synthesizing, in pharma industry.

specific rotation ( $[\alpha]_{20}^D$ , c = 11, HCl 6 mol/l) . . . . . + 9,2 ° - + 10,6 °  
 pH (5 %, H<sub>2</sub>O) . . . . . 3,0 - 5,0  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,03 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %  
 ninhydrin-positive substances. . . . . max. 0 5 %  
 residue on ignition . . . . . max. 0,1 %  
 loss on drying (150 °C) . . . . . 7 - 10 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

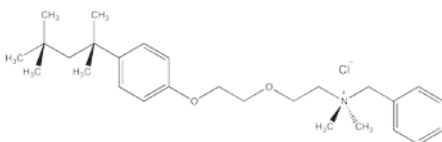
**Specifications:**

assay (argentometric, on dried sample) . . . . . 98,5 - 101 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . passes test

Art. No.	Volume	Container
HI04050025	25 g	0
HI04050100	100 g	0

## Hyamine® 1622

## HY0002 Hyamine® 1622 (Hyamine is a trademark of Rohm and Haas Company)



- Synonyms: N-Benzyl-N,N-dimethyl-N-[4-(1,1,3,3-tetramethylbutyl)-phenoxyethoxyethyl]ammonium chloride, Benzethonium chloride
- C<sub>27</sub>H<sub>42</sub>ClNO<sub>2</sub>
- M = 448,18 g/mol
- CAS [121-54-0]
- EINECS-No.: 204-479-9
- Solub. in water: (20 °C): freely soluble
- Melting point: 164 - 166 °C
- LD 50 (oral, rat): 368 mg/kg
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning
- GHS-H sentences: H302 - H315 - H319 - H411

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2923 90 00 90
- Applications: analytical chemistry, for the analysis of: tensioactive substances (detergent).

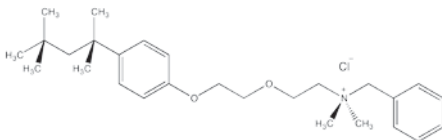
**Specifications:**

assay (titration with HClO<sub>4</sub>, on dried sample) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 pH (10 %, H<sub>2</sub>O) . . . . . 5,0 - 6,5  
 water (K.F.) . . . . . max. 4 %

Art. No.	Volume	Container
HY00020250	250 g	0

## Hyamine® 1622, volumetric solutions

## HY0001 Hyamine® 1622, solution 0,004 mol/l (Hyamine is a trademark of Rohm and Haas Company)



- C<sub>27</sub>H<sub>42</sub>ClNO<sub>2</sub>
- M = 448,18 g/mol
- CAS [121-54-0]
- EINECS-No.: 204-479-9
- Density: 1,0 g/cm<sup>3</sup>
- Tariff number: 2923 90 00 90
- Applications: analytical chemistry, for determination of: tensioactive substances (detergent).

1 ml = 0,001792 g Hyamine This volumetric solution was checked by means of classical methods using a freshly prepared from sodium lauryl sodium lauryl sulfate standard solution, sulfate, reagent grade

Art. No.	Volume	Container
HY00011000	1 l	0
HY00012500	2,5 l	0
HY0001005P	5 l	0

**Specifications:**

factor . . . . . 0,999 - 1,001

## Hydrazine dihydrochloride

## HI0080 Hydrazine dihydrochloride, reagent grade

- Synonyms: Hydrazinium dichloride
- N<sub>2</sub>H<sub>4</sub>·2HCl
- M = 104,97 g/mol
- CAS [5341-61-7]
- EINECS-No.: 226-283-2
- Solub. in water: (20 °C): soluble
- Melting point: ~ 198 °C (decomposes)
- EC-Index-No.: 007-014-00-6
- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288
- IATA/ICAO: 6.1 III UN 3288
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H331 - H350 - H410 - H317
- GHS-P sentences: P261 - P301 + P310 - P361 - P321 - P405 - P501a

- Tariff number: 2825 10 00 00
- Applications: analytical chemistry, chlorine scavenger for HCl gas stream.
- Appearance: White solid

**Specifications:**

assay (iodometric) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 insoluble in water . . . . . max. 0,01 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,002 %  
 cadmium (Cd) . . . . . max. 0,0005 %  
 calcium (Ca) . . . . . max. 0,001 %  
 chromium (Cr) . . . . . max. 0,0005 %  
 cobalt (Co) . . . . . max. 0,0005 %  
 copper (Cu) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %

lead (Pb) . . . . . max. 0,0005 %  
 magnesium (Mg) . . . . . max. 0,0005 %  
 manganese (Mn) . . . . . max. 0,0005 %  
 nickel (Ni) . . . . . max. 0,0005 %  
 potassium (K) . . . . . max. 0,005 %  
 sodium (Na) . . . . . max. 0,005 %  
 zinc (Zn) . . . . . max. 0,0005 %  
 residue on ignition . . . . . max. 0,05 %

Art. No.	Volume	Container
HI00800250	250 g	0
HI00801000	1 kg	0

# Hydraz

## Hydrazine hydrate, 100%

### HI0092 Hydrazine hydrate, 100%, synthesis grade



- Synonyms: Hydrazinium hydroxide
- $N_2H_4 \cdot H_2O$
- $M = 50,06$  g/mol
- CAS [7803-57-8]
- EINECS-No.: 206-114-9
- Density:  $1,03$  g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point:  $-51,7$  °C
- Boiling point:  $120,5$  °C
- Flash pt.  $75$  °C
- Ignition temp.:  $280$  °C
- Vapour pressure: (20 °C) 20 hPa

- Refraction index: (n 20 °C/D) 1,4284
- LD 50 (oral, rat): 129 mg/kg
- ADR: 8 CT1 II UN 2030
- IMDG: 8 II UN 2030
- IATA/ICAO: 8 II UN 2030
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H330 - H350 - H314 - H410 - H317
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2825 10 00 90

- Applications: analytical chemistry, synthesis of organic products, solvents.
- Appearance: Colourless liquid

#### Specifications:

assay (iodometric) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....1,030 - 1,032

Art. No.	Volume	Container
HI00921000	1 l	0

## Hydrazine hydrate, 80%

### HI0090 Hydrazine hydrate, solution 80% w/w, extra pure



- Synonyms: Hydrazinium hydroxide
- $N_2H_4 \cdot H_2O$
- $M = 50,06$  g/mol
- CAS [7803-57-8]
- EINECS-No.: 206-114-9
- Density:  $1,03$  g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point:  $-60$  °C
- Boiling point:  $117 - 119$  °C
- Flash pt.  $91$  °C
- Ignition temp.:  $310$  °C
- Vapour pressure: (20 °C) 13 hPa

- LD 50 (oral, rat): 129 mg/kg (pure substance)
- ADR: 8 CT1 II UN 2030
- IMDG: 8 II UN 2030
- IATA/ICAO: 8 II UN 2030
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H330 - H350 - H314 - H410 - H317
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2825 10 00 90

- Applications: analytical chemistry, synthesis of organic products, solvents.
- Appearance: Colourless liquid

#### Specifications:

assay (iodometric) .....min. 80 %

Art. No.	Volume	Container
HI00900250	250 ml	0
HI00901000	1 l	0

## Hydrazine sulfate

### HI0110 Hydrazine sulfate, reagent grade, ACS



- Synonyms: Hydrazinium sulfate, Hydrazonium sulfate
- $N_2H_4 \cdot H_2SO_4$
- $M = 130,12$  g/mol
- CAS [10034-93-2]
- EINECS-No.: 233-110-4
- Solub. in water: (20 °C): 30 g/l
- Melting point:  $254$  °C (decomposes)
- LD 50 (oral, rat): 601 mg/kg
- EC-Index-No.: 007-014-00-6
- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288
- IATA/ICAO: 6.1 III UN 3288
- GHS-signal word: Danger
- GHS-H sentences: H311 - H330 - H350 - H410 - H302 - H317
- GHS-P sentences: P260 - P310 - P320 - P361 - P405 - P501a

- Tariff number: 2825 10 00 00
- Applications: analytical chemistry, oxidizing agent, Separation and identification of: tellurium and polonium, for the synthesis of: azides.

#### Specifications:

assay (iodometric) .....min. 99 %  
 insoluble in water .....max. 0,005 %  
 chlorides (Cl) .....max. 0,005 %  
 heavy metals (as Pb) .....max. 0,002 %  
 residue on ignition .....max. 0,05 %  
 iron (Fe) .....max. 0,001 %

Art. No.	Volume	Container
HI01100100	100 g	0
HI01100500	500 g	0
HI01101000	1 kg	0

## Hydriodic acid, 57%

### AC3350 Hydriodic acid, 57%, reagent grade



- Synonyms: Hydrogen iodide solution
- HI
- $M = 127,91$  g/mol
- CAS [10034-85-2]
- EINECS-No.: 233-109-9
- Density:  $1,70$  g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point:  $\sim 127$  °C
- EC-Index-No.: 053-002-00-9
- ADR: 8 C1 II UN 1787
- IMDG: 8 II UN 1787
- IATA/ICAO: 8 II UN 1787
- GHS-signal word: Danger
- GHS-H sentences: H314 - H335
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2811 19 80 90
- Applications: analytical chemistry, reducing agent (organic substances).

#### Specifications:

assay (acidimetric) .....min. 57,0 %  
 chlorides and bromides (as Cl) .....max. 0,01 %  
 P compounds (as PO<sub>4</sub>) .....max. 0,001 %  
 sulfates (SO<sub>4</sub>) .....max. 0,005 %  
 aluminium (Al) .....max. 0,0001 %  
 arsenic (As) .....max. 0,0001 %  
 barium (Ba) .....max. 0,00001 %  
 beryllium (Be) .....max. 0,00001 %  
 bismuth (Bi) .....max. 0,00001 %  
 cadmium (Cd) .....max. 0,00001 %  
 calcium (Ca) .....max. 0,0001 %  
 chromium (Cr) .....max. 0,00001 %  
 cobalt (Co) .....max. 0,00001 %  
 copper (Cu) .....max. 0,00001 %  
 germanium (Ge) .....max. 0,00001 %  
 iron (Fe) .....max. 0,0002 %  
 lead (Pb) .....max. 0,00001 %  
 lithium (Li) .....max. 0,00001 %

magnesium (Mg) .....max. 0,0005 %  
 manganese (Mn) .....max. 0,00001 %  
 molybdenum (Mo) .....max. 0,00001 %  
 nickel (Ni) .....max. 0,00001 %  
 potassium (K) .....max. 0,0001 %  
 sodium (Na) .....max. 0,0001 %  
 strontium (Sr) .....max. 0,00001 %  
 thallium (Tl) .....max. 0,00001 %  
 titanium (Ti) .....max. 0,00001 %  
 vanadium (V) .....max. 0,00001 %  
 zinc (Zn) .....max. 0,00005 %  
 zirconium (Zr) .....max. 0,00001 %  
 residue on ignition .....max. 0,005 %

Art. No.	Volume	Container
AC33500100	100 ml	0
AC33501000	1 l	0

## Hydrobromic acid, 48%

## AC0596 Hydrobromic acid, 48%, reagent grade, ACS, ISO



- HBr
- M = 80,92 g/mol
- CAS [10035-10-6]
- EINECS-No.: 233-113-0
- Density: 1,49 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ -11 °C
- Boiling point: ~ 126 °C
- Vapour pressure: (20 °C) 10,6 hPa
- EC-Index-No.: 035-002-00-0
- ADR: 8 C1 II UN 1788
- IMDG: 8 II UN 1788
- IATA/ICAO: 8 II UN 1788
- GHS-signal word: Danger
- GHS-H sentences: H314 - H335
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2811 19 10 00
- Applications: analytical chemistry, synthesis of organic products and inorganic salts, solvents.

## Specifications:

assay (acidimetric) . . . . .	47 - 49 %
chlorides (Cl) . . . . .	max. 0,02 %
iodides (I) . . . . .	max. 0,002 %
phosphates, phosphites (as PO <sub>4</sub> ) . . . . .	max. 0,0002 %
sulfates and sulfites (as SO <sub>4</sub> ) . . . . .	max. 0,003 %
aluminium (Al) . . . . .	max. 0,00001 %
arsenic (As) . . . . .	max. 0,00001 %
barium (Ba) . . . . .	max. 0,00001 %
beryllium (Be) . . . . .	max. 0,00002 %
bismuth (Bi) . . . . .	max. 0,00001 %
cadmium (Cd) . . . . .	max. 0,000005 %
calcium (Ca) . . . . .	max. 0,00005 %
chromium (Cr) . . . . .	max. 0,00001 %
cobalt (Co) . . . . .	max. 0,000002 %
copper (Cu) . . . . .	max. 0,000002 %
germanium (Ge) . . . . .	max. 0,000005 %
heavy metals (as Pb) . . . . .	max. 0,0005 %
iron (Fe) . . . . .	max. 0,00001 %
lead (Pb) . . . . .	max. 0,000002 %

lithium (Li) . . . . .	max. 0,000002 %
magnesium (Mg) . . . . .	max. 0,00001 %
manganese (Mn) . . . . .	max. 0,000005 %
molybdenum (Mo) . . . . .	max. 0,000005 %
nickel (Ni) . . . . .	max. 0,000002 %
potassium (K) . . . . .	max. 0,00001 %
selenium (Se) . . . . .	max. 0,000001 %
sodium (Na) . . . . .	max. 0,000005 %
strontium (Sr) . . . . .	max. 0,000002 %
thallium (Tl) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,00001 %
vanadium (V) . . . . .	max. 0,000005 %
zinc (Zn) . . . . .	max. 0,00001 %
zirconium (Zr) . . . . .	max. 0,00001 %
residue on ignition . . . . .	max. 0,002 %

Art. No.	Volume	Container
AC05961000	1 l	0

## Hydrochloric acid, 37%

- Synonyms: Hydrochloric acid fuming, Muriatic acid, Hydrogen chloride solution
- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: ~ 1,19 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible

- Melting point: -28 °C
- Boiling point: ~ 50 °C
- Vapour pressure: (20 °C) 190 hPa
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Danger

- GHS-H sentences: H314 - H335
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2806 10 00 00
- Applications: laboratory reagent, acidifying agent, in the production of chlorides, synthesis of organic products.

## AC0736 Hydrochloric acid, 37%, extra pure, Ph Eur, BP, NF



assay (acidimetric) . . . . . 36,5 - 38,0 %  
 pH . . . . . passes test  
 reaction of chlorides . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 free chlorine (as Cl) . . . . . max. 0,0004 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,002 %

sulfites (SO<sub>3</sub>) . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,0002 %  
 residue on ignition (as SO<sub>3</sub>) . . . . . max. 0,003 %  
 residue on evaporation . . . . . max. 0,005 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC07361000	1 l	0
AC07362500	2,5 l	0
AC0736005P	5 l	0
AC0736025P	25 l	0

## AC0741 Hydrochloric acid, 37%, reagent grade, ACS, ISO, Reag. Ph Eur



assay (acidimetric) . . . . . 36,5 - 38,0 %  
 identity . . . . . passes test  
 appearance of solution . . . . . passes test  
 colour (Hazen) . . . . . max. 10  
 bromides (Br) . . . . . max. 0,005 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,00005 %  
 sulfites (SO<sub>3</sub>) . . . . . max. 0,00005 %  
 free chlorine (as Cl) . . . . . max. 0,00004 %  
 aluminium (Al) . . . . . max. 0,000005 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,0001 %  
 arsenic (As) . . . . . max. 0,000001 %  
 barium (Ba) . . . . . max. 0,000001 %  
 beryllium (Be) . . . . . max. 0,000001 %  
 bismuth (Bi) . . . . . max. 0,000005 %  
 boron (B) . . . . . max. 0,00001 %  
 cadmium (Cd) . . . . . max. 0,000001 %  
 calcium (Ca) . . . . . max. 0,00003 %  
 chromium (Cr) . . . . . max. 0,000001 %  
 cobalt (Co) . . . . . max. 0,000001 %

copper (Cu) . . . . . max. 0,000001 %  
 gallium (Ga) . . . . . max. 0,000005 %  
 germanium (Ge) . . . . . max. 0,000002 %  
 gold (Au) . . . . . max. 0,000005 %  
 heavy metals (as Pb) . . . . . max. 0,0001 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,000001 %  
 lithium (Li) . . . . . max. 0,000001 %  
 magnesium (Mg) . . . . . max. 0,000005 %  
 manganese (Mn) . . . . . max. 0,000001 %  
 mercury (Hg) . . . . . max. 0,000001 %  
 molybdenum (Mo) . . . . . max. 0,000001 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 platinum (Pt) . . . . . max. 0,00001 %  
 potassium (K) . . . . . max. 0,00001 %  
 silver (Ag) . . . . . max. 0,000002 %  
 sodium (Na) . . . . . max. 0,000003 %  
 strontium (Sr) . . . . . max. 0,000001 %  
 thallium (Tl) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,000005 %

titanium (Ti) . . . . . max. 0,000002 %  
 vanadium (V) . . . . . max. 0,000001 %  
 zinc (Zn) . . . . . max. 0,000005 %  
 zirconium (Zr) . . . . . max. 0,000002 %  
 residue on ignition . . . . . max. 0,0003 %  
 residue on evaporation . . . . . max. 0,001 %  
 extractable organic substances . . . . . passes test (about 0,0005 %)

Art. No.	Volume	Container
AC07411000	1 l	0
AC07411001	1 l	0
AC07412500	2,5 l	0
AC07412501	2,5 l	0
AC0741005P	5 l	0
AC0741025P	25 l	0

## AC0730 Hydrochloric acid, 37%, reagent grade, ACS, ISO, max. 0,0000005% Hg



assay (acidimetric) . . . . . 36,5 - 38,0 %  
 appearance . . . . . passes test  
 colour (Hazen) . . . . . max. 10  
 bromides (Br) . . . . . max. 0,005 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
 sulfites (SO<sub>3</sub>) . . . . . max. 0,0001 %  
 free chlorine (as Cl) . . . . . max. 0,00005 %  
 aluminium (Al) . . . . . max. 0,000005 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,0001 %  
 arsenic (As) . . . . . max. 0,000001 %  
 barium (Ba) . . . . . max. 0,000002 %  
 beryllium (Be) . . . . . max. 0,000002 %  
 bismuth (Bi) . . . . . max. 0,00001 %  
 cadmium (Cd) . . . . . max. 0,000001 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000001 %  
 copper (Cu) . . . . . max. 0,00005 %  
 germanium (Ge) . . . . . max. 0,000005 %  
 heavy metals (as Pb) . . . . . max. 0,0001 %  
 iron (Fe) . . . . . max. 0,00002 %  
 lead (Pb) . . . . . max. 0,000002 %  
 lithium (Li) . . . . . max. 0,000001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000001 %  
 mercury (Hg) . . . . . max. 0,0000005 %  
 molybdenum (Mo) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 potassium (K) . . . . . max. 0,00001 %

sodium (Na) . . . . . max. 0,00005 %  
 strontium (Sr) . . . . . max. 0,000001 %  
 thallium (Tl) . . . . . max. 0,000005 %  
 titanium (Ti) . . . . . max. 0,00001 %  
 vanadium (V) . . . . . max. 0,000001 %  
 zinc (Zn) . . . . . max. 0,000005 %  
 zirconium (Zr) . . . . . max. 0,00001 %  
 residue on ignition . . . . . max. 0,0005 %  
 extractable organic substances . . . . . passes test (about 0,0005 %)

Art. No.	Volume	Container
AC07301000	1 l	0
AC07302500	2,5 l	0

# Hydroc

## AC0780 Hydrochloric acid, 37%, ppb-trace analysis grade, Ultratrace®



assay (acidimetric) . . . . .	.34 - 37 %
colour (Hazen) . . . . .	max. 10
bromides (Br) . . . . .	max. 0,001 %
free chlorine (as Cl) . . . . .	max. 0,00005 %
total phosphorus (P) . . . . .	max. 10 ppb
total sulfur (S) . . . . .	max. 300 ppb
aluminium (Al) . . . . .	max. 1 ppb
antimony (Sb) . . . . .	max. 0,5 ppb
arsenic (As) . . . . .	max. 0,5 ppb
barium (Ba) . . . . .	max. 0,1 ppb
beryllium (Be) . . . . .	max. 0,1 ppb
bismuth (Bi) . . . . .	max. 0,1 ppb
boron (B) . . . . .	max. 1 ppb
cadmium (Cd) . . . . .	max. 0,1 ppb
calcium (Ca) . . . . .	max. 1 ppb
cerium (Ce) . . . . .	max. 0,1 ppb
cesium (Cs) . . . . .	max. 0,1 ppb
chromium (Cr) . . . . .	max. 0,5 ppb
cobalt (Co) . . . . .	max. 0,1 ppb
copper (Cu) . . . . .	max. 0,5 ppb
dysprosium (Dy) . . . . .	max. 0,1 ppb
erbium (Er) . . . . .	max. 0,1 ppb
europium (Eu) . . . . .	max. 0,1 ppb
gadolinium (Gd) . . . . .	max. 0,1 ppb
gallium (Ga) . . . . .	max. 0,1 ppb

gold (Au) . . . . .	max. 0,5 ppb
hafnium (Hf) . . . . .	max. 0,1 ppb
holmium (Ho) . . . . .	max. 0,1 ppb
indium (In) . . . . .	max. 0,1 ppb
iron (Fe) . . . . .	max. 1 ppb
lanthanum (La) . . . . .	max. 0,1 ppb
lead (Pb) . . . . .	max. 0,1 ppb
lithium (Li) . . . . .	max. 0,1 ppb
lutetium (Lu) . . . . .	max. 0,1 ppb
magnesium (Mg) . . . . .	max. 0,5 ppb
manganese (Mn) . . . . .	max. 0,1 ppb
mercury (Hg) . . . . .	max. 0,1 ppb
molybdenum (Mo) . . . . .	max. 0,1 ppb
neodymium (Nd) . . . . .	max. 0,1 ppb
nickel (Ni) . . . . .	max. 0,5 ppb
niobium (Nb) . . . . .	max. 0,1 ppb
potassium (K) . . . . .	max. 1 ppb
praseodymium (Pr) . . . . .	max. 0,1 ppb
rhenium (Re) . . . . .	max. 0,1 ppb
rhodium (Rh) . . . . .	max. 0,1 ppb
rubidium (Rb) . . . . .	max. 0,1 ppb
ruthenium (Ru) . . . . .	max. 0,1 ppb
samarium (Sm) . . . . .	max. 0,1 ppb
scandium (Sc) . . . . .	max. 0,1 ppb
selenium (Se) . . . . .	max. 1 ppb

silver (Ag) . . . . .	max. 1 ppb
sodium (Na) . . . . .	max. 1 ppb
strontium (Sr) . . . . .	max. 0,1 ppb
tellurium (Te) . . . . .	max. 0,1 ppb
terbium (Tb) . . . . .	max. 0,1 ppb
thallium (Tl) . . . . .	max. 0,1 ppb
thorium (Th) . . . . .	max. 0,1 ppb
thulium (Tm) . . . . .	max. 0,1 ppb
tin (Sn) . . . . .	max. 0,5 ppb
titanium (Ti) . . . . .	max. 0,5 ppb
tungsten (W) . . . . .	max. 0,1 ppb
uranium (U) . . . . .	max. 0,1 ppb
vanadium (V) . . . . .	max. 0,5 ppb
ytterbium (Yb) . . . . .	max. 0,1 ppb
yttrium (Y) . . . . .	max. 0,1 ppb
zinc (Zn) . . . . .	max. 1 ppb
zirconium (Zr) . . . . .	max. 0,1 ppb

Art. No.	Volume	Container
AC07800500	500 ml	Ⓕ
AC07801000	1 l	Ⓕ
AC07802500	2,5 l	Ⓕ

## Hydrochloric acid, 35%

- Synonyms: Hydrogen chloride solution, Muriatic acid
- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: ~ 1,19 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -28 °C

- Boiling point: ~ 50 °C
- Vapour pressure: (20 °C) ~ 190 hPa
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Danger
- GHS-H sentences: H314 - H335

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2806 10 00 00
- Applications: laboratory reagent, acidifying agent, in the production of chlorides, synthesis of organic products.

## AC0737 Hydrochloric acid, solution 35% w/w, synthesis grade



assay (acidimetric) . . . . .	.min. 35 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,005 %
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,005 %
arsenic (As) . . . . .	max. 0,0003 %
iron (Fe) . . . . .	max. 0,005 %
lead (Pb) . . . . .	max. 0,005 %

residue on evaporation . . . . .	max. 0,05 %
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Art. No.	Volume	Container
AC07371000	1 l	Ⓕ
AC07372500	2,5 l	Ⓕ
AC0737005P	5 l	Ⓕ
AC0737025P	25 l	Ⓕ

## AC0756 Hydrochloric acid, solution min. 35% w/w, extra pure, Pharmpur®, Ph Eur



assay (acidimetric) . . . . .	.35 - 39 %
identification . . . . .	.passes test
appearance of solution . . . . .	.clear and colourless
free chlorine (as Cl) . . . . .	max. 0,0004 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,002 %
heavy metals (as Pb) . . . . .	max. 0,0002 %

residue on evaporation . . . . .	max. 0,01 %
Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
AC07561000	1 l	Ⓕ
AC07562500	2,5 l	Ⓕ
AC0756005P	5 l	Ⓕ
AC0756025P	25 l	Ⓕ

## AC0781 Hydrochloric acid, 35%, ppt-trace analysis grade, Ultratrace®



assay (acidimetric) . . . . .	.32 - 35 %
aluminium (Al) . . . . .	max. 20 ppt
antimony (Sb) . . . . .	max. 20 ppt
arsenic (As) . . . . .	max. 50 ppt
barium (Ba) . . . . .	max. 10 ppt
beryllium (Be) . . . . .	max. 10 ppt
bismuth (Bi) . . . . .	max. 10 ppt
boron (B) . . . . .	max. 100 ppt
cadmium (Cd) . . . . .	max. 10 ppt
calcium (Ca) . . . . .	max. 10 ppt
cerium (Ce) . . . . .	max. 10 ppt
cesium (Cs) . . . . .	max. 10 ppt
chromium (Cr) . . . . .	max. 10 ppt
cobalt (Co) . . . . .	max. 10 ppt
copper (Cu) . . . . .	max. 10 ppt
dysprosium (Dy) . . . . .	max. 1 ppt
erbium (Er) . . . . .	max. 1 ppt
europium (Eu) . . . . .	max. 1 ppt
gadolinium (Gd) . . . . .	max. 1 ppt
gallium (Ga) . . . . .	max. 10 ppt
gold (Au) . . . . .	max. 50 ppt
hafnium (Hf) . . . . .	max. 10 ppt

holmium (Ho) . . . . .	max. 1 ppt
indium (In) . . . . .	max. 1 ppt
iron (Fe) . . . . .	max. 10 ppt
lanthanum (La) . . . . .	max. 1 ppt
lead (Pb) . . . . .	max. 10 ppt
lithium (Li) . . . . .	max. 10 ppt
lutetium (Lu) . . . . .	max. 10 ppt
magnesium (Mg) . . . . .	max. 10 ppt
manganese (Mn) . . . . .	max. 10 ppt
mercury (Hg) . . . . .	max. 50 ppt
molybdenum (Mo) . . . . .	max. 10 ppt
neodymium (Nd) . . . . .	max. 1 ppt
nickel (Ni) . . . . .	max. 20 ppt
niobium (Nb) . . . . .	max. 1 ppt
potassium (K) . . . . .	max. 10 ppt
praseodymium (Pr) . . . . .	max. 1 ppt
rhenium (Re) . . . . .	max. 10 ppt
rhodium (Rh) . . . . .	max. 10 ppt
rubidium (Rb) . . . . .	max. 10 ppt
ruthenium (Ru) . . . . .	max. 10 ppt
samarium (Sm) . . . . .	max. 1 ppt
scandium (Sc) . . . . .	max. 10 ppt

silver (Ag) . . . . .	max. 10 ppt
sodium (Na) . . . . .	max. 10 ppt
strontium (Sr) . . . . .	max. 10 ppt
tellurium (Te) . . . . .	max. 1 ppt
terbium (Tb) . . . . .	max. 1 ppt
thallium (Tl) . . . . .	max. 10 ppt
thorium (Th) . . . . .	max. 1 ppt
thulium (Tm) . . . . .	max. 1 ppt
tin (Sn) . . . . .	max. 20 ppt
titanium (Ti) . . . . .	max. 10 ppt
tungsten (W) . . . . .	max. 10 ppt
uranium (U) . . . . .	max. 1 ppt
vanadium (V) . . . . .	max. 10 ppt
ytterbium (Yb) . . . . .	max. 1 ppt
yttrium (Y) . . . . .	max. 1 ppt
zinc (Zn) . . . . .	max. 10 ppt
zirconium (Zr) . . . . .	max. 10 ppt

Art. No.	Volume	Container
AC07810250	250 ml	Ⓕ
AC07810500	500 ml	Ⓕ

## Hydrochloric acid, 32%

## AC0739 Hydrochloric acid, solution 32% w/w, reagent grade, ISO



- Synonyms: Hydrogen chloride solution
- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 1,15 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -40 °C
- Boiling point: 84 °C
- Vapour pressure: (20 °C) 21,3 hPa
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Danger
- GHS-H sentences: H314 - H335
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2806 10 00 00
- Applications: laboratory reagent, acidifying agent, in the production of chlorides, synthesis of organic products.

colour (Hazen) . . . . .	max. 10
bromides (Br) . . . . .	max. 0,005 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,00005 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,0001 %
sulfites (SO <sub>3</sub> ) . . . . .	max. 0,0001 %
free chlorine (as Cl) . . . . .	max. 0,00005 %
aluminium (Al) . . . . .	max. 0,000005 %
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,0001 %
arsenic (As) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000002 %
beryllium (Be) . . . . .	max. 0,000002 %
bismuth (Bi) . . . . .	max. 0,000002 %
cadmium (Cd) . . . . .	max. 0,000001 %
calcium (Ca) . . . . .	max. 0,00002 %
chromium (Cr) . . . . .	max. 0,000002 %
cobalt (Co) . . . . .	max. 0,000001 %
copper (Cu) . . . . .	max. 0,000002 %
gallium (Ga) . . . . .	max. 0,000005 %
germanium (Ge) . . . . .	max. 0,000002 %
gold (Au) . . . . .	max. 0,000005 %
heavy metals (as Pb) . . . . .	max. 0,0001 %
indium (In) . . . . .	max. 0,000005 %
iron (Fe) . . . . .	max. 0,00001 %
lead (Pb) . . . . .	max. 0,000001 %
lithium (Li) . . . . .	max. 0,000001 %

magnesium (Mg) . . . . .	max. 0,000005 %
manganese (Mn) . . . . .	max. 0,000001 %
mercury (Hg) . . . . .	max. 0,000001 %
molybdenum (Mo) . . . . .	max. 0,000001 %
nickel (Ni) . . . . .	max. 0,000002 %
platinum (Pt) . . . . .	max. 0,00001 %
potassium (K) . . . . .	max. 0,000001 %
silver (Ag) . . . . .	max. 0,000005 %
sodium (Na) . . . . .	max. 0,00002 %
strontium (Sr) . . . . .	max. 0,000002 %
thallium (Tl) . . . . .	max. 0,000002 %
titanium (Ti) . . . . .	max. 0,000002 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000005 %
zirconium (Zr) . . . . .	max. 0,000002 %
residue on ignition . . . . .	max. 0,0005 %

Art. No.	Volume	Container
AC07391000	1 l	0
AC07392500	2,5 l	0
AC0739005P	5 l	0
AC0739025P	25 l	0

## Specifications:

assay (acidimetric) . . . . .min. 32 %

## Hydrochloric acid, 25%

## AC0767 Hydrochloric acid, solution 25% w/w, reagent grade, ISO



- Synonyms: Hydrogen chloride solution
- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: ~ 1,12 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ -70 °C
- Boiling point: 107 °C
- Vapour pressure: (20 °C) 12 hPa
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Danger
- GHS-H sentences: H314 - H335
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2806 10 00 00
- Applications: laboratory reagent, acidifying agent, in the production of chlorides, synthesis of organic products.

## Specifications:

assay (acidimetric) . . . . .	min. 25 %
colour (Hazen) . . . . .	max. 10
free chlorine (as Cl) . . . . .	max. 0,00005 %
bromides (Br) . . . . .	max. 0,005 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,00005 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,0001 %
sulfites (SO <sub>3</sub> ) . . . . .	max. 0,0001 %
aluminium (Al) . . . . .	max. 0,000005 %
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,0001 %
arsenic (As) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000002 %
beryllium (Be) . . . . .	max. 0,000002 %
bismuth (Bi) . . . . .	max. 0,00001 %
cadmium (Cd) . . . . .	max. 0,000001 %
calcium (Ca) . . . . .	max. 0,00005 %
chromium (Cr) . . . . .	max. 0,000002 %
cobalt (Co) . . . . .	max. 0,000001 %
copper (Cu) . . . . .	max. 0,000002 %
germanium (Ge) . . . . .	max. 0,000005 %
heavy metals (as Pb) . . . . .	max. 0,0001 %
iron (Fe) . . . . .	max. 0,00002 %
lead (Pb) . . . . .	max. 0,000002 %

lithium (Li) . . . . .	max. 0,000001 %
magnesium (Mg) . . . . .	max. 0,00001 %
manganese (Mn) . . . . .	max. 0,000001 %
molybdenum (Mo) . . . . .	max. 0,000002 %
nickel (Ni) . . . . .	max. 0,000002 %
potassium (K) . . . . .	max. 0,00001 %
sodium (Na) . . . . .	max. 0,000005 %
strontium (Sr) . . . . .	max. 0,000001 %
thallium (Tl) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,000001 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000005 %
zirconium (Zr) . . . . .	max. 0,00001 %
residue on ignition . . . . .	max. 0,0005 %

Art. No.	Volume	Container
AC07671000	1 l	0
AC07672500	2,5 l	0
AC0767005P	5 l	0
AC0767025P	25 l	0

## Hydrochloric acid, volumetric solutions

## AC0752 Hydrochloric acid, solution 6 mol/l (6 N)



- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 1,098 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335

- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, for the analysis of: fats.

## Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,21876 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC07521000	1 l	0

## AC0749 Hydrochloric acid, solution 5 mol/l (5 N)



- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 1,08 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Warning

- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, for the analysis of: fats.

## Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,18235 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC07491000	1 l	0

# Hydroc

## AC0738 Hydrochloric acid, solution 3 mol/l (3 N)



- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: ~ 1,06 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, for the analysis of: fats.

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,10938 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC07381000	1 l	
AC07382500	2,5 l	
AC0738010C	10 l	

## AC0748 Hydrochloric acid, solution 2 mol/l (2 N)

- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: ~ 1,03 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 III UN 1789
- IMDG: 8 III UN 1789
- IATA/ICAO: 8 III UN 1789
- GHS-H sentences: EUH210
- Tariff number: 2806 10 00 00

- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,07292 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC07481000	1 l	

## AC0751 Hydrochloric acid, solution 1,4 mol/l (1,4 N)

- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 1,02 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 III UN 1789
- IMDG: 8 III UN 1789
- IATA/ICAO: 8 III UN 1789
- GHS-H sentences: EUH210
- Tariff number: 2806 10 00 00

- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,05104 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC0751005P	5 l	
AC0751010C	10 l	

## AC0744 Hydrochloric acid, solution 1 mol/l (1 N)

- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 III UN 1789
- IMDG: 8 III UN 1789
- IATA/ICAO: 8 III UN 1789
- GHS-H sentences: EUH210
- Tariff number: 2806 10 00 00

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,03646 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

- Applications: analytical chemistry, titrant in volumetric analysis.

Art. No.	Volume	Container
AC07441000	1 l	
AC0744005P	5 l	
AC0744010C	10 l	
AC0744025P	25 l	

## AC0745 Hydrochloric acid, solution 0,5 mol/l (0,5 N)

- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 III UN 1789
- IMDG: 8 III UN 1789
- IATA/ICAO: 8 III UN 1789
- GHS-H sentences: EUH210
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,018235 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC07451000	1 l	
AC0745005P	5 l	
AC0745010C	10 l	

**AC0769 Hydrochloric acid, solution 0,31 mol/l (0,31 N)**

- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 III UN 1789
- IMDG: 8 III UN 1789
- IATA/ICAO: 8 III UN 1789
- GHS-H sentences: EUH210
- Tariff number: 2806 10 00 00

- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001

1 ml = 0,011303 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC0769005P	5 l	

**AC0755 Hydrochloric acid, solution 0,25 mol/l (0,25 N)**

- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,009115 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC07551000	1 l	
AC0755005P	5 l	
AC0755010C	10 l	

**AC0740 Hydrochloric acid, solution 0,2 mol/l (0,2 N)**

- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: ~ 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, laboratory reagent.

**Specifications:**factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,007292 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC07401000	1 l	

**AC0746 Hydrochloric acid, solution 0,1 mol/l (0,1 N)**

- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, laboratory reagent.

**Specifications:**factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,003646 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC07461000	1 l	
AC0746005P	5 l	
AC0746010C	10 l	

**AC0754 Hydrochloric acid, solution 0,05 mol/l (0,05 N)**

- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 0,996 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,0018235 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC07541000	1 l	

**AC0757 Hydrochloric acid, solution 0,01 mol/l (0,01 N)**

- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 0,994 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,0003646 g HCl This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC07571000	1 l	

# Hydroc

## AC0743 Hydrochloric acid, concentrated solution to prepare 1 l of solution 1 mol/l (1 N)



- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: ~ 1,09 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789

- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Danger
- GHS-H sentences: H314 - H335
- GHS-P sentences: P260 - P303 + P361 + P533 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

### Specifications:

amount of substance: 36,460 g HCl  
concentrated solution . . . . . 5 mol/l ± 0,1 %

Art. No.	Volume	Container
AC074300PA	u.	

## AC0759 Hydrochloric acid, concentrated solution to prepare 1 l of solution 0,5 mol/l (0,5 N)



- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 1,08 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789

- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

### Specifications:

amount of substance: 18,230 g HCl  
concentrated solution . . . . . 5 mol/l ± 0,1 %

Art. No.	Volume	Container
AC075900PA	u.	

## AC0742 Hydrochloric acid, concentrated solution to prepare 1 l of solution 0,1 mol/l (0,1 N)

- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: ~ 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 017-002-01-X

- GHS-H sentences: EUH210
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

### Specifications:

amount of substance: 3,646 g HCl

concentrated solution . . . . . 1 mol/l ± 0,1 %

Art. No.	Volume	Container
AC074200PA	u.	

## Hydrochloric acid-water, solution 50:50 v/v

### AC0760 Hydrochloric acid-water, solution 50:50 v/v, reagent grade



- Synonyms: Hydrogen chloride - water solution
- HCl
- M = 36,46 g/mol
- CAS [7647-01-0]
- EINECS-No.: 231-595-7
- Density: 1,10 g/cm<sup>3</sup>
- EC-Index-No.: 017-002-01-X
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789

- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2806 10 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, for the analysis of: fats.

### Specifications:

hydrochloric acid 37 % . . . . . 50 ml  
water . . . . . 50 ml  
residue on evaporation . . . . . max. 0,001 %

Art. No.	Volume	Container
AC07601000	1 l	

## Hydrofluoric acid, 48%

- HF
- M = 20,00 g/mol
- CAS [7664-39-3]
- EINECS-No.: 231-634-8
- Density: 1,16 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ -35 °C

- Boiling point: ~ 106 °C
- EC-Index-No.: 009-002-00-6
- ADR: 8 CT1 II UN 1790
- IMDG: 8 II UN 1790
- IATA/ICAO: 8 II UN 1790
- GHS-signal word: Danger
- GHS-H sentences: H330 - H300 - H310 - H314

- GHS-P sentences: P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2811 11 00 00
- Applications: analytical chemistry, acidifying agent, dissolution agent for silicates.

### AC1059 Hydrofluoric acid, solution 48% w/w, extra pure



assay (acidimetric) . . . . . min. 48 %  
chlorides (Cl) . . . . . max. 0,002 %  
hexafluorosilicate (SiF<sub>6</sub>) . . . . . max. 0,01 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,001 %

sulfites (SO<sub>3</sub>) . . . . . max. 0,002 %  
heavy metals (as Pb) . . . . . max. 0,0005 %  
iron (Fe) . . . . . max. 0,0001 %  
residue on ignition (as SO<sub>4</sub>) . . . . . max. 0,002 %

Art. No.	Volume	Container
AC10591000	1 l	
AC10592500	2,5 l	

### AC1060 Hydrofluoric acid, solution 48% w/w, reagent grade, ACS, ISO



assay (acidimetric) . . . . . 48,0 - 51,0 %  
colour (Hazen) . . . . . max. 10  
hexafluorosilicic acid (H<sub>2</sub>SiF<sub>6</sub>) . . . . . max. 0,005 %  
chlorides (Cl) . . . . . max. 0,0001 %  
phosphates (as PO<sub>4</sub>) . . . . . max. 0,00001 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
sulfites (SO<sub>3</sub>) . . . . . max. 0,0002 %  
aluminium (Al) . . . . . max. 0,000005 %  
arsenic (As) . . . . . max. 0,000005 %  
barium (Ba) . . . . . max. 0,000001 %  
beryllium (Be) . . . . . max. 0,000002 %  
bismuth (Bi) . . . . . max. 0,000002 %  
cadmium (Cd) . . . . . max. 0,000001 %  
calcium (Ca) . . . . . max. 0,00002 %  
chromium (Cr) . . . . . max. 0,000001 %

cobalt (Co) . . . . . max. 0,000002 %  
copper (Cu) . . . . . max. 0,000002 %  
germanium (Ge) . . . . . max. 0,000002 %  
heavy metals (as Pb) . . . . . max. 0,00005 %  
iron (Fe) . . . . . max. 0,00001 %  
lead (Pb) . . . . . max. 0,000002 %  
lithium (Li) . . . . . max. 0,000001 %  
magnesium (Mg) . . . . . max. 0,00001 %  
manganese (Mn) . . . . . max. 0,000003 %  
molybdenum (Mo) . . . . . max. 0,000002 %  
nickel (Ni) . . . . . max. 0,000002 %  
potassium (K) . . . . . max. 0,00001 %  
silver (Ag) . . . . . max. 0,000002 %  
sodium (Na) . . . . . max. 0,00002 %  
strontium (Sr) . . . . . max. 0,000002 %

thallium (Tl) . . . . . max. 0,000002 %  
titanium (Ti) . . . . . max. 0,000002 %  
vanadium (V) . . . . . max. 0,000002 %  
zinc (Zn) . . . . . max. 0,000005 %  
zirconium (Zr) . . . . . max. 0,000002 %  
residue on ignition . . . . . max. 0,0005 %

Art. No.	Volume	Container
AC10601000	1 l	
AC10602500	2,5 l	
AC1060005P	5 l	
AC1060025P	25 l	



**AC1061 Hydrofluoric acid, 48%, ppb-trace analysis grade, Ultratrace®**

assay (acidimetric) . . . . .	47 - 51 %	germanium (Ge) . . . . .	max. 0,1 ppb	samarium (Sm) . . . . .	max. 0,1 ppb
colour (Hazen) . . . . .	max. 10	gold (Au) . . . . .	max. 0,2 ppb	scandium (Sc) . . . . .	max. 0,1 ppb
chlorides (Cl) . . . . .	max. 0,0004 %	hafnium (Hf) . . . . .	max. 0,1 ppb	selenium (Se) . . . . .	max. 1 ppb
hexafluorosilicic acid (H <sub>2</sub> SiF <sub>6</sub> ) . . . . .	max. 0,002 %	holmium (Ho) . . . . .	max. 0,1 ppb	silver (Ag) . . . . .	max. 0,5 ppb
total phosphorus (P) . . . . .	max. 0,000005 %	indium (In) . . . . .	max. 0,1 ppb	sodium (Na) . . . . .	max. 1 ppb
total sulfur (S) . . . . .	max. 0,00001 %	iron (Fe) . . . . .	max. 1 ppb	strontium (Sr) . . . . .	max. 0,1 ppb
aluminium (Al) . . . . .	max. 1 ppb	lanthanum (La) . . . . .	max. 0,1 ppb	tantalum (Ta) . . . . .	max. 0,1 ppb
antimony (Sb) . . . . .	max. 0,2 ppb	lead (Pb) . . . . .	max. 0,1 ppb	tellurium (Te) . . . . .	max. 0,1 ppb
arsenic (As) . . . . .	max. 0,5 ppb	lithium (Li) . . . . .	max. 0,1 ppb	terbium (Tb) . . . . .	max. 0,1 ppb
barium (Ba) . . . . .	max. 0,1 ppb	lutetium (Lu) . . . . .	max. 0,1 ppb	thallium (Tl) . . . . .	max. 0,1 ppb
beryllium (Be) . . . . .	max. 0,1 ppb	magnesium (Mg) . . . . .	max. 1 ppb	thorium (Th) . . . . .	max. 0,1 ppb
bismuth (Bi) . . . . .	max. 0,1 ppb	manganese (Mn) . . . . .	max. 0,1 ppb	thulium (Tm) . . . . .	max. 0,1 ppb
boron (B) . . . . .	max. 1 ppb	mercury (Hg) . . . . .	max. 1 ppb	tin (Sn) . . . . .	max. 0,5 ppb
cadmium (Cd) . . . . .	max. 0,1 ppb	molybdenum (Mo) . . . . .	max. 0,1 ppb	titanium (Ti) . . . . .	max. 1 ppb
calcium (Ca) . . . . .	max. 1 ppb	neodymium (Nd) . . . . .	max. 0,1 ppb	tungsten (W) . . . . .	max. 0,5 ppb
cerium (Ce) . . . . .	max. 0,1 ppb	nickel (Ni) . . . . .	max. 0,5 ppb	uranium (U) . . . . .	max. 0,1 ppb
cesium (Cs) . . . . .	max. 0,1 ppb	niobium (Nb) . . . . .	max. 0,1 ppb	vanadium (V) . . . . .	max. 0,1 ppb
chromium (Cr) . . . . .	max. 1 ppb	palladium (Pd) . . . . .	max. 0,2 ppb	ytterbium (Yb) . . . . .	max. 0,1 ppb
cobalt (Co) . . . . .	max. 0,1 ppb	platinum (Pt) . . . . .	max. 0,2 ppb	yttrium (Y) . . . . .	max. 0,1 ppb
copper (Cu) . . . . .	max. 0,5 ppb	potassium (K) . . . . .	max. 1 ppb	zinc (Zn) . . . . .	max. 1 ppb
dysprosium (Dy) . . . . .	max. 0,1 ppb	praseodymium (Pr) . . . . .	max. 0,1 ppb	zirconium (Zr) . . . . .	max. 0,1 ppb
erbium (Er) . . . . .	max. 0,1 ppb	rhenium (Re) . . . . .	max. 0,1 ppb		
europium (Eu) . . . . .	max. 0,1 ppb	rhodium (Rh) . . . . .	max. 0,1 ppb		
gadolinium (Gd) . . . . .	max. 0,1 ppb	rubidium (Rb) . . . . .	max. 0,1 ppb		
gallium (Ga) . . . . .	max. 0,1 ppb	ruthenium (Ru) . . . . .	max. 0,1 ppb		

Art. No.	Volume	Container
AC10610500	500 ml	

**AC1062 Hydrofluoric acid, 48%, ppt-trace analysis grade, Ultratrace®**

assay (acidimetric) . . . . .	47 - 51 %	hafnium (Hf) . . . . .	max. 10 ppt	samarium (Sm) . . . . .	max. 1 ppt
total sulfur (S) . . . . .	max. 0,00001 %	holmium (Ho) . . . . .	max. 1 ppt	scandium (Sc) . . . . .	max. 10 ppt
aluminium (Al) . . . . .	max. 20 ppt	indium (In) . . . . .	max. 1 ppt	silver (Ag) . . . . .	max. 10 ppt
antimony (Sb) . . . . .	max. 20 ppt	iron (Fe) . . . . .	max. 10 ppt	sodium (Na) . . . . .	max. 10 ppt
arsenic (As) . . . . .	max. 50 ppt	lanthanum (La) . . . . .	max. 10 ppt	strontium (Sr) . . . . .	max. 10 ppt
barium (Ba) . . . . .	max. 10 ppt	lead (Pb) . . . . .	max. 10 ppt	tellurium (Te) . . . . .	max. 1 ppt
beryllium (Be) . . . . .	max. 10 ppt	lithium (Li) . . . . .	max. 10 ppt	terbium (Tb) . . . . .	max. 1 ppt
bismuth (Bi) . . . . .	max. 10 ppt	lutetium (Lu) . . . . .	max. 1 ppt	thallium (Tl) . . . . .	max. 10 ppt
boron (B) . . . . .	max. 100 ppt	magnesium (Mg) . . . . .	max. 10 ppt	thorium (Th) . . . . .	max. 1 ppt
cadmium (Cd) . . . . .	max. 10 ppt	manganese (Mn) . . . . .	max. 10 ppt	thulium (Tm) . . . . .	max. 1 ppt
calcium (Ca) . . . . .	max. 10 ppt	mercury (Hg) . . . . .	max. 50 ppt	tin (Sn) . . . . .	max. 20 ppt
cerium (Ce) . . . . .	max. 10 ppt	molybdenum (Mo) . . . . .	max. 10 ppt	titanium (Ti) . . . . .	max. 20 ppt
cesium (Cs) . . . . .	max. 10 ppt	neodymium (Nd) . . . . .	max. 1 ppt	tungsten (W) . . . . .	max. 20 ppt
chromium (Cr) . . . . .	max. 10 ppt	nickel (Ni) . . . . .	max. 20 ppt	uranium (U) . . . . .	max. 1 ppt
cobalt (Co) . . . . .	max. 10 ppt	niobium (Nb) . . . . .	max. 10 ppt	vanadium (V) . . . . .	max. 10 ppt
copper (Cu) . . . . .	max. 10 ppt	palladium (Pd) . . . . .	max. 20 ppt	ytterbium (Yb) . . . . .	max. 1 ppt
dysprosium (Dy) . . . . .	max. 1 ppt	platinum (Pt) . . . . .	max. 20 ppt	yttrium (Y) . . . . .	max. 1 ppt
erbium (Er) . . . . .	max. 1 ppt	potassium (K) . . . . .	max. 10 ppt	zinc (Zn) . . . . .	max. 10 ppt
europium (Eu) . . . . .	max. 1 ppt	praseodymium (Pr) . . . . .	max. 1 ppt	zirconium (Zr) . . . . .	max. 10 ppt
gadolinium (Gd) . . . . .	max. 1 ppt	rhenium (Re) . . . . .	max. 10 ppt		
gallium (Ga) . . . . .	max. 10 ppt	rhodium (Rh) . . . . .	max. 20 ppt		
germanium (Ge) . . . . .	max. 10 ppt	rubidium (Rb) . . . . .	max. 20 ppt		
gold (Au) . . . . .	max. 20 ppt	ruthenium (Ru) . . . . .	max. 20 ppt		

Art. No.	Volume	Container
AC10620250	250 ml	

**Hydrofluoric acid, 40%****AC1051 Hydrofluoric acid, solution 40% w/w, reagent grade, ISO**

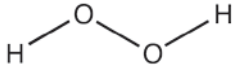
<ul style="list-style-type: none"> <li>• HF</li> <li>• M = 20,01 g/mol</li> <li>• CAS [7664-39-3]</li> <li>• EINECS-No.: 231-634-8</li> <li>• Density: 1,13 g/cm<sup>3</sup></li> <li>• Solub. in water: (20 °C): miscible</li> <li>• Melting point: ~ -44 °C</li> <li>• Boiling point: ~ 112 °C</li> <li>• EC-Index-No.: 009-002-00-6</li> <li>• ADR: 8 CT1 II UN 1790</li> <li>• IMDG: 8 II UN 1790</li> <li>• IATA/ICAO: 8 II UN 1790</li> <li>• GHS-signal word: Danger</li> <li>• GHS-H sentences: H310 - H330 - H314</li> <li>• GHS-P sentences: P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P361 - P405 - P501a</li> <li>• Tariff number: 2811 11 00 00</li> <li>• Applications: analytical chemistry, acidifying agent, dissolution agent for silicates.</li> </ul>	colour (Hazen) . . . . . max.10 hexafluorosilicic acid (H <sub>2</sub> SiF <sub>6</sub> ) . . . . . max. 0,005 % chlorides (Cl) . . . . . max. 0,0001 % phosphates (as PO <sub>4</sub> ) . . . . . max. 0,00005 % sulfates (SO <sub>4</sub> ) . . . . . max. 0,0002 % sulfites (SO <sub>3</sub> ) . . . . . max. 0,0002 % aluminium (Al) . . . . . max. 0,000005 % arsenic (As) . . . . . max. 0,000005 % barium (Ba) . . . . . max. 0,000005 % beryllium (Be) . . . . . max. 0,000002 % bismuth (Bi) . . . . . max. 0,000002 % cadmium (Cd) . . . . . max. 0,000001 % calcium (Ca) . . . . . max. 0,00002 % chromium (Cr) . . . . . max. 0,000002 % cobalt (Co) . . . . . max. 0,000002 % copper (Cu) . . . . . max. 0,000002 % germanium (Ge) . . . . . max. 0,000002 % heavy metals (as Pb) . . . . . max. 0,0001 % iron (Fe) . . . . . max. 0,00001 % lead (Pb) . . . . . max. 0,000002 % lithium (Li) . . . . . max. 0,000002 % magnesium (Mg) . . . . . max. 0,00001 %	manganese (Mn) . . . . . max. 0,000003 % molybdenum (Mo) . . . . . max. 0,000002 % nickel (Ni) . . . . . max. 0,000002 % potassium (K) . . . . . max. 0,00001 % silver (Ag) . . . . . max. 0,000002 % sodium (Na) . . . . . max. 0,00002 % strontium (Sr) . . . . . max. 0,000002 % thallium (Tl) . . . . . max. 0,000002 % titanium (Ti) . . . . . max. 0,000002 % vanadium (V) . . . . . max. 0,000002 % zinc (Zn) . . . . . max. 0,000005 % zirconium (Zr) . . . . . max. 0,000002 % residue on ignition . . . . . max. 0,0005 %
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Art. No.	Volume	Container
AC10511000	1 l	
AC10512500	2,5 l	
AC1051005P	5 l	

# Hydrog

## Hydrogen peroxide, 50%

### HI0139 Hydrogen peroxide, solution 50% w/w (200 vol), extra pure



- Synonyms: Hydrogen dioxide, Hydroperoxide
- $H_2O_2$
- $M = 34,01$  g/mol
- CAS [7722-84-1]
- EINECS-No.: 231-765-0
- Density: 1,20 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: - 52 °C
- Boiling point: 114 °C
- Vapour pressure: (30 °C) 240 hPa
- LD 50 (oral, rat): 1518 mg/kg
- EC-Index-No.: 008-003-00-9
- ADR: 5.1 OC1 II UN 2014
- IMDG: 5.1 II UN 2014
- IATA/ICAO: Forbidden UN 2014
- GHS-signal word: Danger
- GHS-H sentences: H272 - H314 - H302 - H335 -
- GHS-P sentences: P221 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2847 00 00 00

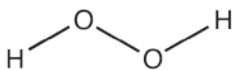
- Applications: oxidizing agent, bleaching agent, for pharmaceuticals synthesizing, in the pharmaceuticals industry.

#### Specifications:

assay (permanganometric) . . . . .	approx. 50 %
acidity (as $H_2SO_4$ ) . . . . .	max. 0,05 %
chlorides (Cl) . . . . .	max. 0,001 %
nitrates ( $NO_3$ ) . . . . .	max. 0,001 %
phosphates (as $PO_4$ ) . . . . .	max. 0,005 %
sulfates ( $SO_4$ ) . . . . .	max. 0,001 %
arsenic (As) . . . . .	max. 0,00005 %
copper (Cu) . . . . .	max. 0,001 %
iron (Fe) . . . . .	max. 0,0005 %
lead (Pb) . . . . .	max. 0,001 %
nickel (Ni) . . . . .	max. 0,001 %
residue on evaporation . . . . .	max. 0,05 %

Art. No.	Volume	Container
HI01391000	1 l	Ø
HI01392500	2,5 l	Ø

## Hydrogen peroxide, 35%



- Synonyms: Hydrogen dioxide, Hydroperoxide
- $H_2O_2$
- $M = 34,01$  g/mol
- CAS [7722-84-1]
- EINECS-No.: 231-765-0
- Density: 1,13 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ -24 °C
- Boiling point: ~ 110 °C
- Vapour pressure: (20 °C) ~ 20 hPa
- LD 50 (oral, rat): 2000 mg/kg (90% solution)
- EC-Index-No.: 008-003-00-9

- ADR: 5.1 OC1 II UN 2014
- IMDG: 5.1 II UN 2014
- IATA/ICAO: 5.1 II UN 2014
- GHS-signal word: Danger
- GHS-H sentences: H318 - H302 - H335 - H315
- GHS-P sentences: P261 - P305 + P351 + P338 - P310 - P321 - P405 - P501a
- Tariff number: 2847 00 00 00
- Applications: oxidizing agent, bleaching agent, for pharmaceuticals synthesizing, in the pharmaceuticals industry.

### HI0137 Hydrogen peroxide, solution 35% w/w (133 vol), extra pure



assay (permanganometric) . . . . .	34,5 - 36,5 %	arsenic (As) . . . . .	max. 0,00005 %
free acid (as $H_2SO_4$ ) . . . . .	max. 0,02 %	copper (Cu) . . . . .	max. 0,001 %
chlorides (Cl) . . . . .	max. 0,001 %	lead (Pb) . . . . .	max. 0,001 %
nitrates ( $NO_3$ ) . . . . .	max. 0,001 %	iron (Fe) . . . . .	max. 0,0005 %
phosphates (as $PO_4$ ) . . . . .	max. 0,005 %	nickel (Ni) . . . . .	max. 0,001 %
sulfates ( $SO_4$ ) . . . . .	max. 0,001 %	residue on evaporation . . . . .	max. 0,05 %

Art. No.	Volume	Container
HI01371000	1 l	Ø
HI0137005P	5 l	Ⓟ

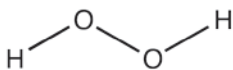
### HI0138 Hydrogen peroxide, solution 35% w/w (133 vol), reagent grade



assay (permanganometric) . . . . .	min. 34,5 %	ammonium ( $NH_4$ ) . . . . .	max. 0,001 %	residue on evaporation . . . . .	max. 0,05 %
acidity (as $H_2SO_4$ ) . . . . .	max. 0,02 %	arsenic (As) . . . . .	max. 0,00005 %		
chlorides (Cl) . . . . .	max. 0,0001 %	copper (Cu) . . . . .	max. 0,0001 %		
nitrates ( $NO_3$ ) . . . . .	max. 0,0005 %	iron (Fe) . . . . .	max. 0,00001 %		
phosphates (as $PO_4$ ) . . . . .	max. 0,0005 %	lead (Pb) . . . . .	max. 0,0001 %		
sulfates ( $SO_4$ ) . . . . .	max. 0,0005 %	nickel (Ni) . . . . .	max. 0,0001 %		

Art. No.	Volume	Container
HI01381000	1 l	Ø
HI01382500	2,5 l	Ø

## Hydrogen peroxide, 30%



- Synonyms: Hydrogen dioxide, Hydroperoxide
- $H_2O_2$
- $M = 34,01$  g/mol
- CAS [7722-84-1]
- EINECS-No.: 231-765-0
- Density: 1,11 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -26 °C
- Boiling point: 107 °C
- Vapour pressure: (20 °C) ~ 18 hPa
- LD 50 (oral, rat): 2000 mg/kg (90% solution)

- EC-Index-No.: 008-003-00-9
- ADR: 5.1 OC1 II UN 2014
- IMDG: 5.1 II UN 2014
- IATA/ICAO: 5.1 II UN 2014
- GHS-signal word: Danger
- GHS-H sentences: H318 - H302
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P310 - P301 + P312 - P501a
- Tariff number: 2847 00 00 00
- Applications: analytical chemistry, oxidizing agent, bleaching agent, for pharmaceuticals synthesizing.

### HI0135 Hydrogen peroxide, solution 30% w/w (110 vol), extra pure



assay (permanganometric) . . . . .	approx. 30 %	arsenic (As) . . . . .	max. 0,00005 %
acidity (as $H_2SO_4$ ) . . . . .	max. 0,025 %	copper (Cu) . . . . .	max. 0,001 %
chlorides (Cl) . . . . .	max. 0,001 %	lead (Pb) . . . . .	max. 0,001 %
nitrates ( $NO_3$ ) . . . . .	max. 0,001 %	iron (Fe) . . . . .	max. 0,0005 %
phosphates (as $PO_4$ ) . . . . .	max. 0,005 %	nickel (Ni) . . . . .	max. 0,001 %
sulfates ( $SO_4$ ) . . . . .	max. 0,001 %	residue on evaporation . . . . .	max. 0,05 %

Art. No.	Volume	Container
HI01350500	500 ml	Ø
HI01351000	1 l	Ø
HI01352500	2,5 l	Ø
HI0135005P	5 l	Ⓟ

## HI0136 Hydrogen peroxide, solution 30% w/w (110 vol), reagent grade, ACS, ISO



assay (permanganometric) . . . . .	30,0 - 32,0 %
colour (Hazen) . . . . .	max. 10
free acid (as H <sub>2</sub> SO <sub>4</sub> ) . . . . .	max. 0,004 %
chlorides (Cl) . . . . .	max. 0,00005 %
nitrates (NO <sub>3</sub> ) . . . . .	max. 0,0002 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,0001 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,0001 %
total nitrogen (as N) . . . . .	max. 0,0004 %
aluminium (Al) . . . . .	max. 0,00005 %
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,0005 %
arsenic (As) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000005 %
beryllium (Be) . . . . .	max. 0,000001 %
bismuth (Bi) . . . . .	max. 0,00001 %
cadmium (Cd) . . . . .	max. 0,000001 %

calcium (Ca) . . . . .	max. 0,00002 %
chromium (Cr) . . . . .	max. 0,000002 %
cobalt (Co) . . . . .	max. 0,000001 %
copper (Cu) . . . . .	max. 0,000001 %
germanium (Ge) . . . . .	max. 0,000005 %
heavy metals (as Pb) . . . . .	max. 0,0001 %
iron (Fe) . . . . .	max. 0,000005 %
lead (Pb) . . . . .	max. 0,000001 %
lithium (Li) . . . . .	max. 0,000001 %
magnesium (Mg) . . . . .	max. 0,000005 %
manganese (Mn) . . . . .	max. 0,000001 %
molybdenum (Mo) . . . . .	max. 0,000002 %
nickel (Ni) . . . . .	max. 0,000002 %
potassium (K) . . . . .	max. 0,00001 %
sodium (Na) . . . . .	max. 0,00001 %

strontium (Sr) . . . . .	max. 0,000001 %
thallium (Tl) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,000001 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000005 %
zirconium (Zr) . . . . .	max. 0,00001 %
residue on ignition . . . . .	max. 0,002 %
residue on evaporation . . . . .	max. 0,002 %

Art. No.	Volume	Container
HI01361000	1 l	0
HI01362500	2,5 l	0
HI0136005P	5 l	0

## HI0143 Hydrogen peroxide, solution 30% w/w (110 vol), ppt-trace analysis grade, Ultratrace®



assay (permanganometric) . . . . .	30,0 - 32,0 %
aluminium (Al) . . . . .	max. 50 ppt
antimony (Sb) . . . . .	max. 10 ppt
arsenic (As) . . . . .	max. 100 ppt
barium (Ba) . . . . .	max. 10 ppt
beryllium (Be) . . . . .	max. 10 ppt
bismuth (Bi) . . . . .	max. 10 ppt
boron (B) . . . . .	max. 100 ppt
cadmium (Cd) . . . . .	max. 10 ppt
calcium (Ca) . . . . .	max. 100 ppt
cerium (Ce) . . . . .	max. 1 ppt
cesium (Cs) . . . . .	max. 1 ppt
chromium (Cr) . . . . .	max. 10 ppt
cobalt (Co) . . . . .	max. 10 ppt
copper (Cu) . . . . .	max. 10 ppt
dysprosium (Dy) . . . . .	max. 1 ppt
erbium (Er) . . . . .	max. 1 ppt
europium (Eu) . . . . .	max. 1 ppt
gadolinium (Gd) . . . . .	max. 1 ppt
gallium (Ga) . . . . .	max. 10 ppt
germanium (Ge) . . . . .	max. 10 ppt
gold (Au) . . . . .	max. 10 ppt
hafnium (Hf) . . . . .	max. 1 ppt

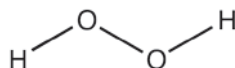
holmium (Ho) . . . . .	max. 1 ppt
indium (In) . . . . .	max. 1 ppt
iron (Fe) . . . . .	max. 20 ppt
lanthanum (La) . . . . .	max. 1 ppt
lead (Pb) . . . . .	max. 10 ppt
lithium (Li) . . . . .	max. 10 ppt
lutetium (Lu) . . . . .	max. 1 ppt
magnesium (Mg) . . . . .	max. 20 ppt
manganese (Mn) . . . . .	max. 10 ppt
mercury (Hg) . . . . .	max. 50 ppt
molybdenum (Mo) . . . . .	max. 10 ppt
neodymium (Nd) . . . . .	max. 1 ppt
nickel (Ni) . . . . .	max. 20 ppt
niobium (Nb) . . . . .	max. 10 ppt
palladium (Pd) . . . . .	max. 10 ppt
potassium (K) . . . . .	max. 20 ppt
praseodymium (Pr) . . . . .	max. 10 ppt
rhenium (Re) . . . . .	max. 10 ppt
rhodium (Rh) . . . . .	max. 10 ppt
rubidium (Rb) . . . . .	max. 10 ppt
ruthenium (Ru) . . . . .	max. 10 ppt
samarium (Sm) . . . . .	max. 1 ppt
scandium (Sc) . . . . .	max. 10 ppt

selenium (Se) . . . . .	max. 100 ppt
silver (Ag) . . . . .	max. 10 ppt
sodium (Na) . . . . .	max. 50 ppt
strontium (Sr) . . . . .	max. 10 ppt
tantalum (Ta) . . . . .	max. 10 ppt
tellurium (Te) . . . . .	max. 1 ppt
terbium (Tb) . . . . .	max. 1 ppt
thallium (Tl) . . . . .	max. 1 ppt
thulium (Tm) . . . . .	max. 1 ppt
thorium (Th) . . . . .	max. 1 ppt
tin (Sn) . . . . .	max. 50 ppt
titanium (Ti) . . . . .	max. 20 ppt
tungsten (W) . . . . .	max. 20 ppt
uranium (U) . . . . .	max. 1 ppt
vanadium (V) . . . . .	max. 10 ppt
ytterbium (Yb) . . . . .	max. 1 ppt
yttrium (Y) . . . . .	max. 1 ppt
zinc (Zn) . . . . .	max. 50 ppt
zirconium (Zr) . . . . .	max. 10 ppt

Art. No.	Volume	Container
HI01430500	500 ml	0

## Hydrogen peroxide, 6%, w/v

### HI0132 Hydrogen peroxide, solution 6% w/v (20 vol), extra pure



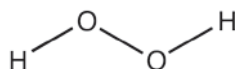
- Synonyms: Hydrogen dioxide, Hydroperoxide
- H<sub>2</sub>O<sub>2</sub>
- M = 34,01 g/mol
- CAS [7722-84-1]
- EINECS-No.: 231-765-0
- Density: 1,016 g/cm<sup>3</sup>
- LD 50 (oral, rat): 2000 mg/kg (90% solution)
- EC-Index-No.: 008-003-00-9
- GHS-signal word: Danger
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2847 00 00 00
- Applications: oxidizing agent, bleaching agent, for pharmaceuticals synthesizing, in the pharmaceuticals industry.

- Specifications:**
- |  |                |
|--|----------------|
| assay (permanganometric) . . . . .                     | approx. 6 %    |
| acidity (as H <sub>2</sub> SO <sub>4</sub> ) . . . . . | max. 0,05 %    |
| chlorides (Cl) . . . . .                               | max. 0,001 %   |
| nitrates (NO <sub>3</sub> ) . . . . .                  | max. 0,001 %   |
| phosphates (as PO <sub>4</sub> ) . . . . .             | max. 0,005 %   |
| sulfates (SO <sub>4</sub> ) . . . . .                  | max. 0,001 %   |
| arsenic (As) . . . . .                                 | max. 0,00005 % |
| copper (Cu) . . . . .                                  | max. 0,0005 %  |
| iron (Fe) . . . . .                                    | max. 0,0005 %  |
| lead (Pb) . . . . .                                    | max. 0,001 %   |
| nickel (Ni) . . . . .                                  | max. 0,001 %   |
| residue on evaporation . . . . .                       | max. 0,05 %    |

Art. No.	Volume	Container
HI01321000	1 l	0
HI0132005P	5 l	0

## Hydrogen peroxide, 0,9% w/v

### HI0130 Hydrogen peroxide, solution 0,9% w/v (3 vol), for determination of sulfurous gas (SO<sub>2</sub>) according to Paul



- Synonyms: Hydrogen dioxide, Hydroperoxide
- H<sub>2</sub>O<sub>2</sub>
- M = 34,01 g/mol
- CAS [7722-84-1]
- EINECS-No.: 231-765-0
- Density: 1,00 g/cm<sup>3</sup>
- LD 50 (oral, rat): 2000 mg/kg (90% solution)
- EC-Index-No.: 008-003-00-9
- Tariff number: 2847 00 00 00

- Applications: oxidizing agent, bleaching agent, for pharmaceuticals synthesizing, in the pharmaceuticals industry.

- Specifications:**
- |                                    |               |
|------------------------------------|---------------|
| assay (permanganometric) . . . . . | approx. 0,9 % |
|------------------------------------|---------------|

Art. No.	Volume	Container
HI01300250	250 ml	0

# Hydroq

## Hydroquinone

### HI0145 Hydroquinone, synthesis grade



- Synonyms: 1,4-Dihydroxybenzene, p-Dihydroxybenzene, Quinol
- $C_6H_6O_2$
- $M = 110,11$  g/mol
- CAS [123-31-9]
- EINECS-No.: 204-617-8
- Solub. in water: (25 °C): 70 g/l
- Melting point: ~ 172 °C
- Boiling point: 287 °C
- Flash pt. 165 °C
- Ignition temp.: 516 °C
- Vapour pressure: (132 °C) 1,3 hPa
- LD 50 (oral, rat): 320 mg/kg
- EC-Index-No.: 604-005-00-4
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Danger
- GHS-H sentences: H318 - H341 - H351 - H400 - H302 - H317

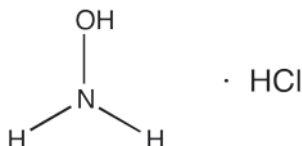
- GHS-P sentences: P261 - P305 + P351 + P338 - P310 - P321 - P405 - P501a
- Tariff number: 2907 22 00 10
- Applications: analytical chemistry, for determination of: phosphates, antioxidant, photography, synthesis of organic products.
- Appearance: White crystalline powder

#### Specifications:

assay .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 residue on ignition .....max. 0,05 %  
 water (K.F.) .....max. 0,3 %

Art. No.	Volume	Container
HI01450100	100 g	Ⓒ
HI01450500	500 g	Ⓒ
HI0145005P	5 kg	Ⓒ

## Hydroxylamine hydrochloride



- Synonyms: Hydroxylammonium chloride
- $NH_2OH \cdot HCl$
- $M = 69,49$  g/mol
- CAS [5470-11-1]
- EINECS-No.: 226-798-2
- Solub. in water: (20 °C): 464 g/l
- Melting point: 159 °C
- LD 50 (oral, rat): 141 mg/kg
- EC-Index-No.: 612-123-00-2 [1]
- ADR: 8 C2 III UN 3260
- IMDG: 8 III UN 3260

- IATA/ICAO: 8 III UN 3260
- GHS-signal word: Warning
- GHS-H sentences: H351 - H373 - H290 - H400 - H302 - H312 - H317 - H315 - H319
- GHS-P sentences: P260 - P261 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2825 10 00 10
- Applications: analytical chemistry, strong reducing agent, synthesis of organic products, for the synthesis of: oximes. Separation and identification of: tellurium and selenium, for determination of: gold.

### HI0212 Hydroxylamine hydrochloride, synthesis grade



assay (argentometric) .....min. 98 %  
 identity (IR-spectrum) .....passes test  
 residue on ignition (as  $SO_2$ ) .....max. 0,1 %

Art. No.	Volume	Container
HI02120250	250 g	Ⓒ
HI02120500	500 g	Ⓒ
HI02121000	1 kg	Ⓒ

### HI0215 Hydroxylamine hydrochloride, reagent grade, ACS, ISO



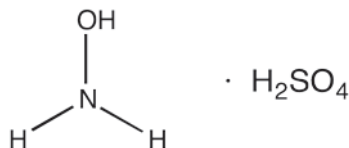
assay (permanganometric) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 insoluble in water .....max. 0,005 %  
 insoluble in  $C_2H_5OH$  .....max. 0,005 %  
 pH (5 %,  $H_2O$ ) .....2,5 - 4,0  
 acidity. ....max. 0,25 meq/g  
 sulfates ( $SO_4$ ) .....max. 0,002 %  
 ammonium ( $NH_4$ ) .....max. 0,05 %

arsenic (As) .....max. 0,0005 %  
 copper (Cu) .....max. 0,0005 %  
 heavy metals (as Pb) .....max. 0,0005 %  
 iron (Fe) .....max. 0,0005 %  
 lead (Pb) .....max. 0,001 %  
 sulphur compounds (as  $SO_4$ ) .....max. 0,002 %  
 residue on ignition .....max. 0,01 %  
 loss on drying (105 °C) .....max. 0,1 %

Art. No.	Volume	Container
HI02150250	250 g	Ⓒ
HI02151000	1 kg	Ⓒ
HI0215025P	25 kg	Ⓒ

## Hydroxylammonium sulfate

### HI0225 Hydroxylammonium sulfate, synthesis grade



- Synonyms: Hydroxylamine sulfate
- $(NH_2OH)_2SO_4$
- $M = 164,14$  g/mol
- CAS [10039-54-0]
- EINECS-No.: 233-118-8
- Solub. in water: (20 °C): 587 g/l
- Melting point: 170 °C (decomposes)
- LD 50 (oral, rat): 937 mg/kg
- EC-Index-No.: 612-123-00-2 [2]
- ADR: 8 C2 III UN 2865
- IMDG: 8 III UN 2865
- IATA/ICAO: 8 III UN 2865
- GHS-signal word: Warning
- GHS-H sentences: H351 - H373 - H290 - H400 - H302 - H312 - H317 - H315 - H319

- GHS-P sentences: P260 - P261 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2825 10 00 00
- Applications: analytical chemistry, reducing agent, for the synthesis of: oximes.

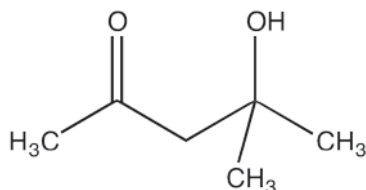
#### Specifications:

assay (permanganometric) .....min. 99 %  
 residue on ignition (as  $SO_2$ ) .....max. 0,05 %  
 water (K.F.) .....max. 0,5 %

Art. No.	Volume	Container
HI02250250	250 g	Ⓒ
HI02251000	1 kg	Ⓒ

## 4-Hydroxy-4-methyl-2-pentanone

## AL0225 4-Hydroxy-4-methyl-2-pentanone, synthesis grade



- Synonyms: Diacetone alcohol, 2-Methyl-2-pentanol-4-one
- $C_6H_{12}O_2$
- $M = 116,16 \text{ g/mol}$
- CAS [123-42-2]
- EINECS-No.: 204-626-7
- Density:  $0,94 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point:  $-47 \text{ °C}$
- Boiling point:  $166 \text{ °C}$
- Flash pt.  $58 \text{ °C}$
- Ignition temp.:  $640 \text{ °C}$
- Vapour pressure: (20 °C) 2 hPa
- Refraction index: (n 20 °C/D) 1,4233
- LD 50 (oral, rat): 4000 mg/kg
- EC-Index-No.: 603-016-00-1
- ADR: 3 F1 III UN 1148
- IMDG: 3 III UN 1148
- IATA/ICAO: 3 III UN 1148
- GHS-signal word: Warning

- GHS-H sentences: H226 - H319
- GHS-P sentences: P210 - P241 - P280 - P303 + P361 + P353 - P305 + P351 + P338 - P501a
- Tariff number: 2914 40 10 00
- Applications: solvents, for pharmaceuticals synthesizing, in antifreeze compositions.
- Appearance: Clear liquid

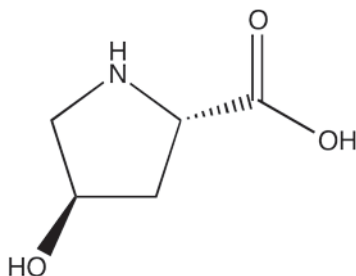
**Specifications:**

assay (G.C.) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,938 - 0,940  
 residue on evaporation . . . . .max. 0,005 %

Art. No.	Volume	Container
AL02251000	1 l	Ø
AL02252500	2,5 l	Ø
AL0225005P	5 l	Ø

## 4-Hydroxy-L-proline

## HI0235 4-Hydroxy-L-proline, extra pure



- Synonyms: L(-)-4-Hydroxypyrrolidine-2-carboxylic acid
- $C_5H_9NO_3$
- $M = 131,13 \text{ g/mol}$
- CAS [51-35-4]
- EINECS-No.: 200-091-9
- Solub. in water: (20 °C): 500 g/l
- Melting point:  $274 \text{ °C}$
- Tariff number: 2933 99 90 90
- Applications: synthesis of organic products, laboratory reagent.

specific rotation ( $[\alpha]_{20}^{D} / D, c = 5, H_2O$ ) . . . - 74 - - 77 °  
 chlorides (Cl) . . . . .max. 0,02 %  
 sulfates ( $SO_4$ ) . . . . .max. 0,02 %  
 ammonium ( $NH_4$ ) . . . . .max. 0,02 %  
 heavy metals (as Pb) . . . . .max 0,001 %  
 iron (Fe) . . . . .max 0,001 %  
 other aminoacids . . . . .max. 0 5 %  
 residue on ignition . . . . .max. 0,1 %  
 loss on drying (105 °C, 3 h) . . . . .max. 0,2 %

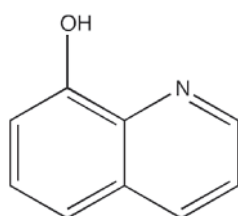
**Specifications:**

assay (titration with  $HClO_4$ ) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test

Art. No.	Volume	Container
HI02350005	5 g	Ø
HI02350025	25 g	Ø

## 8-Hydroxyquinoline

## HI0257 8-Hydroxyquinoline, synthesis grade



- Synonyms: Oxine, 8-Quinolinol, Hydroxybenzopyridine
- $C_9H_7NO$
- $M = 145,16 \text{ g/mol}$
- CAS [148-24-3]
- EINECS-No.: 205-711-1
- Solub. in water: (20 °C): insoluble
- Melting point:  $73,8 \text{ °C}$
- Boiling point:  $267 \text{ °C}$
- LD 50 (oral, rat): 1200 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a

- Tariff number: 2933 49 90 90
- Applications: synthesis of organic products, analytical chemistry.

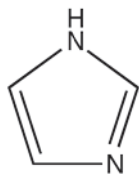
**Specifications:**

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition (as  $SO_2$ ) . . . . .max. 0,1 %

Art. No.	Volume	Container
HI02570250	250 g	Ø

# Imidaz

## Imidazole



- Synonyms: 1,3-Diazole, Glyoxaline, Iminazole
- $C_3H_4N_2$
- $M = 68,08$  g/mol
- CAS [288-32-4]
- EINECS-No.: 206-019-2
- Solub. in water: (20 °C): 633 g/l
- Melting point: 90 - 91 °C
- Boiling point: 256 °C
- Flash pt. > 135 °C
- Ignition temp.: 480 °C
- Vapour pressure: (20 °C) 0,003 hPa
- LD 50 (oral, rat): 220 mg/kg
- ADR: 8 C8 III UN 3263
- IMDG: 8 III UN 3263
- IATA/ICAO: 8 III UN 3263
- GHS-signal word: Danger
- GHS-H sentences: H314 - H302 - H360D
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2933 21 00 90
- Applications: analytical chemistry, in buffer solutions.

### IM0025 Imidazole, synthesis grade

assay (titration with  $HClO_4$ ) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 residue on ignition ..... max. 0,1 %  
 water (K.F.) ..... max. 0,5 %

Art. No.	Volume	Container
IM00250250	250 g	Ⓟ
IM00251000	1 kg	Ⓟ

### IM0026 Imidazole, reagent grade, ACS

assay (titration with  $HClO_4$ ) ..... min. 99,5 %  
 identity (IR-spectrum) ..... passes test  
 pH (5 %,  $H_2O$ ) ..... 9,5 - 11,0  
 iron (Fe) ..... max. 0,0005 %

UV-VIS spectroscopy ..... passes test  
 residue on ignition ..... max. 0,1 %  
 water (K.F.) ..... max. 0,2 %

Art. No.	Volume	Container
IM00260250	250 g	Ⓟ
IM00261000	1 kg	Ⓟ

## Immersion oil

### AC0031 Immersion oil, for microscopy

- Density: 0,92 g/cm<sup>3</sup>
- Solub. in water: (20 °C): almost non-miscible
- Melting point: < 0 °C
- Boiling point: 340 °C
- Flash pt. 163 °C
- Vapour pressure: (23 °C) < 0,13 hPa
- Refraction index: (n 20 °C/D) 1,516

- Tariff number: 3822 00 00 00
- Applications: for biology, microscopy.

suitability for microscopy ..... passes test

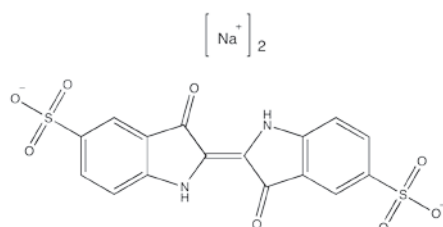
#### Specifications:

density (20°/4°) ..... 0,92 - 0,95  
 refractive index n<sub>20</sub>/D ..... 1,515 - 1,522  
 insoluble in  $C_2H_5OH$  ..... passes test

Art. No.	Volume	Container
AC00310100	100 ml	Ⓟ
AC00310250	250 ml	Ⓟ
AC00310500	500 ml	Ⓟ

## Indigo carmine, C.I. 73015

### IN0065 Indigo carmine, C.I. 73015, extra pure, Reag. Ph Eur



- Synonyms: Indigo-5,5'-disulfonic acid disodium salt, Acid Blue 74
- $C_{16}H_{10}N_2Na_2O_8S_2$
- $M = 466,35$  g/mol
- CAS [860-22-0]
- EINECS-No.: 212-728-8
- Solub. in water: (25 °C): 10 g/l
- LD 50 (oral, rat): > 2000 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 3204 12 00 00
- Applications: colouring agent (microscopy), for pharmaceuticals synthesizing, in food industry, for the detection of: nitrates, chlorates.

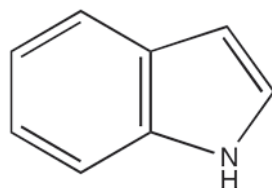
#### Specifications:

assay (titr. with  $TiCl_3$ ) ..... 90 - 95 %  
 insoluble in water ..... max. 0,05 %  
 soluble in di-isopropyl ether ..... max. 0,05 %  
 chlorides (Cl) ..... max. 0,05 %  
 sulfates ( $SO_4$ ) ..... max. 0,3 %  
 arsenic (As) ..... max. 0,0001 %  
 copper (Cu) ..... max. 0,0001 %  
 heavy metals (as Pb) ..... max. 0,001 %  
 residue on ignition ..... 30 - 35 %  
 loss on drying (135 °C) ..... max. 2 %

Art. No.	Volume	Container
IN00650010	10 g	Ⓟ
IN00650025	25 g	Ⓟ
IN00650100	100 g	Ⓟ

## Indole

### IN0120 Indole, reagent grade



- Synonyms: 2,3-Benzopyrrole, 1H-Benzo[ $\beta$ ]pyrrole
- $C_8H_7N$
- $M = 117,15$  g/mol
- CAS [120-72-9]
- EINECS-No.: 204-420-7
- Solub. in water: (25 °C): 3,56 g/l
- Melting point: 52,5 °C
- Boiling point: 254 °C
- Flash pt. 110 °C
- Vapour pressure: (25 °C) 0,016 hPa
- LD 50 (oral, rat): 1000 mg/kg
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H311 - H302
- GHS-P sentences: P280 - P361 - P322 - P301 + P312 - P405 - P501a

- Tariff number: 2933 99 20 00
- Applications: analytical chemistry, in biochemistry, in the paper industry.

#### Specifications:

assay (G.C.) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 insoluble in  $C_2H_5OH$  ..... passes test  
 copper (Cu) ..... max. 0,001 %  
 iron (Fe) ..... max. 0,001 %  
 lead (Pb) ..... max. 0,001 %  
 nickel (Ni) ..... max. 0,001 %  
 residue on ignition ..... max. 0,1 %

Art. No.	Volume	Container
IN01200010	10 g	Ⓟ

## Iodine

- $I_2$
- $M = 253,81 \text{ g/mol}$
- CAS [7553-56-2]
- EINECS-No.: 231-442-4
- Solub. in water: (20 °C): 0,29 g/l
- Melting point: 114 °C
- Boiling point: 185 °C
- Vapour pressure: (25 °C) 0,41 hPa

- LD 50 (oral, rat): 14000 mg/kg
- EC-Index-No.: 053-001-00-3
- ADR: 8 CT2 III UN 3495
- IMDG: 8 III UN 3495
- IATA/ICAO: 8 III UN 3495
- GHS-signal word: Warning
- GHS-H sentences: H400 - H312 - H332

- GHS-P sentences: P261 - P280 - P322 - P304 + P340 - P312 - P501a
- Tariff number: 2801 20 00 00
- Applications: synthesis of organic products, inorganic salts, for pharmaceuticals synthesizing, disinfectant, stabilizer, manufacture of dyes, colouring agent, photography, catalyst, in the rubber industry, analytical chemistry, in biochemistry and for biology.

## Y00019 Iodine, pearls, resublimed, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (iodometric) . . . . . 99,5 - 100,5 %  
 identification . . . . . passes test  
 chlorides and bromides (as Cl) . . . . . max. 0,028 %  
 residue on evaporation . . . . . max. 0,1 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
Y000190100	100 g	0
Y000191000	1 kg	0

## Y00021 Iodine, pearls, resublimed, reagent grade, ACS, ISO, Reag. Ph Eur

assay (iodometric) . . . . . min. 99,8 %  
 identity . . . . . passes test  
 chlorides and bromides (as Cl) . . . . . max. 0,005 %  
 residue on evaporation . . . . . max. 0,005 %

Art. No.	Volume	Container
Y000210100	100 g	0
Y000210250	250 g	0
Y000211000	1 kg	0

## Iodine, volumetric solutions

## Y00024 Iodine, solution 0,5 mol/l (1 N)

- $I_2$
- $M = 253,81 \text{ g/mol}$
- CAS [7553-56-2]
- EINECS-No.: 231-442-4
- Density: 1,22 g/cm<sup>3</sup>
- EC-Index-No.: 053-001-00-3
- GHS-H sentences: EUH210
- Tariff number: 2801 20 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

## Specifications:

factor . . . . . 0,995 - 1,005  
 uncertainty  $\pm 0,001$

1 ml = 0,127 g  $I_2$ . This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
Y000241000	1 l	0

## Y00023 Iodine, solution 0,05 mol/l (0,1 N)

- $I_2$
- $M = 253,81 \text{ g/mol}$
- CAS [7553-56-2]
- EINECS-No.: 231-442-4
- Density: 1,02 g/cm<sup>3</sup>
- EC-Index-No.: 053-001-00-3
- GHS-H sentences: EUH210
- Tariff number: 2801 20 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

## Specifications:

factor . . . . . 0,995 - 1,005  
 uncertainty  $\pm 0,001$

1 ml = 0,0127 g  $I_2$ . This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
Y00023G100	100 ml	0
Y000231000	1 l	0
Y000232500	2,5 l	0

## Y00027 Iodine, solution 0,02365 mol/l (0,0473 N)

- $I_2$
- $M = 253,81 \text{ g/mol}$
- CAS [7553-56-2]
- EINECS-No.: 231-442-4
- EC-Index-No.: 053-001-00-3
- Tariff number: 2801 20 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

uncertainty  $\pm 0,001$

1 ml = 0,006003 g  $I_2$ . This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
Y000271000	1 l	0

## Specifications:

factor . . . . . 0,995 - 1,005

## Y00025 Iodine, solution 0,01 mol/l (0,02 N)

- $I_2$
- $M = 253,81 \text{ g/mol}$
- CAS [7553-56-2]
- EINECS-No.: 231-442-4
- Density: 1,005 g/cm<sup>3</sup>
- EC-Index-No.: 053-001-00-3
- Tariff number: 2801 20 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

## Specifications:

factor . . . . . 0,995 - 1,005  
 uncertainty  $\pm 0,001$

1 ml = 0,002538 g  $I_2$ . This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
Y000250500	500 ml	0
Y000251000	1 l	0

# Iodine

## Y00022 Iodine, concentrated solution to prepare 1 l of solution 0,05 mol/l (0,1 N)

- I<sub>2</sub>
- M = 253,81 g/mol
- CAS [7553-56-2]
- EINECS-No.: 231-442-4
- Density: 1,38 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 14000 mg/kg (toxic component)

- GHS-H sentences: EUH210
- Tariff number: 2801 20 00 00
- Applications: analytical chemistry, disinfectant, in biochemistry, for biology.

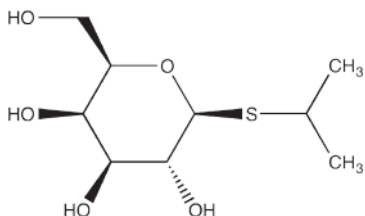
concentrated solution . . . . . 0,5 mol/l ± 0,1 %

Art. No.	Volume	Container
Y0002200GA	u.	

**Specifications:**  
amount of substance: 12,690 g<sub>2</sub>

## IPTG

### IP0010 IPTG, molecular biology grade (dioxane free)



- Synonyms: Isopropyl-β-D-1-thiogalactopyranoside
- C<sub>9</sub>H<sub>18</sub>O<sub>5</sub>S
- M = 238,29 g/mol
- CAS [367-93-1]
- EINECS-No.: 206-703-0
- Solub. in water: (20 °C): 10 g/l
- Melting point: 109 -111 °C
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332
- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a

- Tariff number: 2932 99 00 90
- Applications: for biology.

**Specifications:**  
assay (HPLC) . . . . .min. 99 %  
dioxane (G.C.) . . . . .max. 0,02 %

Art. No.	Volume	Container
IP00100001	1 g	

## Iron

- Fe
- M = 55,85 g/mol
- CAS [7439-89-6]
- EINECS-No.: 231-096-4
- Solub. in water: (20 °C): insoluble
- Melting point: 1535 °C

- Boiling point: ~ 3000 °C
- Ignition temp.: > 100 °C
- LD 50 (oral, rat): 30000 mg/kg
- ADR: 4.1 F3 III UN 3089
- IMDG: 4.1 III UN 3089
- IATA/ICAO: 4.1 III UN 3089

- GHS-signal word: Warning
- GHS-H sentences: H228
- GHS-P sentences: P210 - P241 - P280 - P240 - P370 + P378b
- Tariff number: 7205 29 00 00

### HI0303 Iron, powder, extra pure (made by reduction), particle size < 100 µm



assay (cerimetric) . . . . .min. 99 %  
insoluble in HCl . . . . .max. 0,5 %  
solubility in water . . . . .max. 0,1 %  
chlorides (Cl) . . . . .max. 0,001 %  
sulfides (S) . . . . .max. 0,01 %  
arsenic (As) . . . . .max. 0,0005 %

copper (Cu) . . . . .max. 0,01 %  
lead (Pb) . . . . .max. 0,002 %  
manganese (Mn) . . . . .max. 0,1 %  
nickel (Ni) . . . . .max. 0,05 %  
zinc (Zn) . . . . .max. 0,005 %

Art. No.	Volume	Container
HI03030250	250 g	
HI03030500	500 g	
HI03031000	1 kg	

### HI0304 Iron, powder, extra pure (made by reduction), particle size < 150 µm



assay (cerimetric) . . . . .min. 99 %  
insoluble in HCl . . . . .max. 0,5 %  
solubility in water . . . . .max. 0,1 %  
chlorides (Cl) . . . . .max. 0,001 %  
sulfides (S) . . . . .max. 0,01 %

arsenic (As) . . . . .max. 0,0005 %  
copper (Cu) . . . . .max. 0,01 %  
lead (Pb) . . . . .max. 0,002 %  
manganese (Mn) . . . . .max. 0,1 %  
nickel (Ni) . . . . .max. 0,05 %

Art. No.	Volume	Container
HI03041000	1 kg	

## Iron(III) chloride, 30%, aqueous solution

### HI0333 Iron(III) chloride, 30%, aqueous solution, synthesis grade



- FeCl<sub>3</sub>·6H<sub>2</sub>O
- M = 270,32 g/mol
- CAS [7705-08-0]
- EINECS-No.: 231-729-4
- Density: 1,3 g/cm<sup>3</sup>
- LD 50 (oral, rat): 900 mg/kg (pure substance)
- ADR: 8 C1 III UN 2582
- IMDG: 8 III UN 2582

- IATA/ICAO: 8 III UN 2582
- GHS-signal word: Danger
- GHS-H sentences: H318 - H315
- GHS-P sentences: P280 - P305 + P351 + P338 - P310 - P321 - P362 - P332 + P313
- Tariff number: 2827 39 20 00
- Applications: analytical chemistry, laboratory reagent.

**Specifications:**  
assay (iodometric, as FeCl<sub>3</sub>) . . . . . approx. 30 %

Art. No.	Volume	Container
HI03331000	1 l	
HI0333025P	25 l	

## Iron(III) nitrate nonahydrate

### HI0340 Iron(III) nitrate nonahydrate, extra pure, Reag. Ph Eur



- Fe(NO<sub>3</sub>)<sub>3</sub>·9H<sub>2</sub>O
- M = 404,00 g/mol
- CAS [7782-61-8]
- EINECS-No.: 233-899-5
- Solub. in water: (20 °C): soluble
- Melting point: 47 °C (decomposes)
- LD 50 (oral, rat): 3250 mg/kg
- ADR: 5.1 O2 III UN 1466
- IMDG: 5.1 III UN 1466
- IATA/ICAO: 5.1 III UN 1466
- GHS-signal word: Danger
- GHS-H sentences: H272 - H315 - H319

- GHS-P sentences: P221 - P210 - P220 - P305 + P351 + P338 - P321 - P501a
- Tariff number: 2834 29 80 00
- Applications: analytical chemistry, oxidizing agent, laboratory reagent.
- Appearance: Light purple crystalline powder

sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %  
calcium (Ca) . . . . .max. 0,02 %  
copper (Cu) . . . . .max. 0,005 %  
iron (II) (Fe (II)) . . . . .max. 0,01 %  
lead (Pb) . . . . .max. 0,005 %  
magnesium (Mg) . . . . .max. 0,02 %  
zinc (Zn) . . . . .max. 0,01 %

**Specifications:**  
assay (iodometric) . . . . .min. 99 %  
insoluble in water . . . . .max. 0,05 %  
free acid (as HNO<sub>3</sub>) . . . . .max. 0,3 %  
chlorides (Cl) . . . . .max. 0,005 %

Art. No.	Volume	Container
HI03400500	500 g	
HI03401000	1 kg	



## Iron(III) oxide

## HI0341 Iron(III) oxide, synthesis grade

- Fe<sub>2</sub>O<sub>3</sub>
- M = 159,70 g/mol
- CAS [1309-37-1]
- EINECS-No.: 215-168-2
- Solub. in water: (20 °C): insoluble
- Melting point: 1562 °C (decomposes)
- Tariff number: 2821 10 00 90

- Applications: analytical chemistry, in the rubber industry (pigment), painting, in porcelain industry, in semiconductors industry, catalyst.

manganese (Mn) . . . . .max. 0,25 %  
residue on ignition . . . . .max. 0,5 %

**Specifications:**

assay (iodometric) . . . . .min. 96 %  
solubility in water . . . . .max. 1 %  
phosphates (as PO<sub>4</sub>) . . . . .max. 0,3 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,5 %

Art. No.	Volume	Container
HI03410500	500 g	
HI03411000	1 kg	
HI0341005P	5 kg	

## Iron(II) sulfate heptahydrate

- Synonyms: Iron vitriol
- FeSO<sub>4</sub>·7H<sub>2</sub>O
- M = 278,02 g/mol
- CAS [7782-63-0]
- EINECS-No.: 231-753-5

- Solub. in water: (20 °C): 665 g/l
- Melting point: > 60 °C (release of crystalline water)
- LD 50 (oral, rat): 319 mg/kg (anhydrous substance)
- GHS-signal word: Warning
- GHS-H sentences: H302 - H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2833 29 80 80
- Applications: analytical chemistry, determining COD.

## HI0350 Iron(II) sulfate heptahydrate, extra pure, Phmpur®, Ph Eur, BP, USP

assay (cerimetric) . . . . .99,5 - 104,5 %  
identification . . . . .passes test  
appearance solution (10 % in diluted H<sub>2</sub>SO<sub>4</sub>) . . . . .passes test  
pH (5 %, H<sub>2</sub>O) . . . . .3 - 4  
chlorides (Cl) . . . . .max. 0,02 %  
arsenic (As) . . . . .max. 0,0003 %  
chromium (Cr) . . . . .max. 0,005 %  
copper (Cu) . . . . .max. 0,005 %

iron (III) (Fe (III)) . . . . .max. 0,3 %  
lead (Pb) . . . . .max. 0,001 %  
manganese (Mn) . . . . .max. 0,1 %  
mercury (Hg) . . . . .max. 0,0001 %  
nickel (Ni) . . . . .max. 0,005 %  
zinc (Zn) . . . . .max. 0,005 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
it is not to be used if it is coated with brownish spots

Art. No.	Volume	Container
HI03500500	500 g	
HI03501000	1 kg	
HI0350005P	5 kg	
HI0350025P	25 kg	

## HI0351 Iron(II) sulfate heptahydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (permanganometric) . . . . .min. 99,5 %  
identity . . . . .passes test  
appearance of solution . . . . .passes test  
insoluble in water . . . . .max. 0,01 %  
pH (5 %, H<sub>2</sub>O) . . . . .3,0 - 4,0  
chlorides (Cl) . . . . .max. 0,0005 %  
phosphates (as PO<sub>4</sub>) . . . . .max. 0,001 %  
total nitrogen (as N) . . . . .max. 0,001 %  
arsenic (As) . . . . .max. 0,0002 %

calcium (Ca) . . . . .max. 0,005 %  
copper (Cu) . . . . .max. 0,001 %  
heavy metals (as Pb) . . . . .max. 0,005 %  
iron (III) (Fe (III)) . . . . .max. 0,02 %  
lead (Pb) . . . . .max. 0,0005 %  
magnesium (Mg) . . . . .max. 0,002 %  
manganese (Mn) . . . . .max. 0,05 %  
potassium (K) . . . . .max. 0,002 %  
sodium (Na) . . . . .max. 0,02 %

zinc (Zn) . . . . .max. 0,005 %  
substances not precipitated by ammonium hydroxide . . . . .max. 0,05 %

Art. No.	Volume	Container
HI03510500	500 g	
HI03511000	1 kg	
HI0351005P	5 kg	

## Iron(III) sulfate hydrate

## HI0352 Iron(III) sulfate hydrate, reagent grade

- Fe<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>·xH<sub>2</sub>O
- M = 399,87 g/mol
- CAS [15244-10-7]
- EINECS-No.: 233-072-9
- Solub. in water: (20 °C): freely soluble
- Tariff number: 2833 29 80 80
- Applications: laboratory reagent, analytical chemistry, flotation agent (water).

**Specifications:**

assay (iodometric, as Fe<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>) . . . . .min. 75 %  
insoluble in H<sub>2</sub>SO<sub>4</sub> . . . . .max. 0,025 %  
chlorides (Cl) . . . . .max. 0,01 %  
nitrates (NO<sub>3</sub>) . . . . .max. 0,02 %  
copper (Cu) . . . . .max. 0,005 %  
iron (II) (Fe (II)) . . . . .max. 0,1 %  
potassium (K) . . . . .max. 0,01 %  
sodium (Na) . . . . .max. 0,05 %

Art. No.	Volume	Container
HI03520500	500 g	
HI03521000	1 kg	
HI0352005P	5 kg	
HI0352025P	25 kg	

## Iron(II) sulfide

## HI0360 Iron(II) sulfide, for producing hydrogen sulfide

- FeS
- M = 87,92 g/mol
- CAS [1317-37-9]
- EINECS-No.: 215-268-6
- Solub. in water: (20 °C): almost insoluble
- Melting point: ~ 1195 °C
- Tariff number: 2830 90 11 00

- Applications: for the synthesis of: hydrogen sulfide, in porcelain industry, pigment, in lubricant compositions.

**Specifications:**

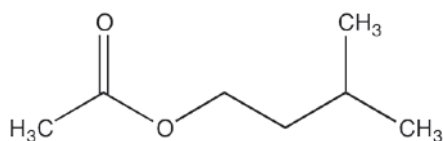
sulphide content . . . . .approx. 29 %

Art. No.	Volume	Container
HI03600500	500 g	
HI03601000	1 kg	

# Isoamy

## Isoamyl acetate

AC0157 Isoamyl acetate, extra pure



- Synonyms: Acetic acid isoamyl ester, 3-Methylbutyl acetate
- $C_7H_{14}O_2$
- $M = 130,19 \text{ g/mol}$
- CAS [123-92-2]
- EINECS-No.: 204-662-3
- Density:  $0,87 \text{ g/cm}^3$
- Solub. in water: ( $19,4 \text{ }^\circ\text{C}$ ):  $2,12 \text{ g/l}$
- Melting point:  $-78 \text{ }^\circ\text{C}$
- Boiling point:  $141 \text{ }^\circ\text{C}$
- Flash pt.  $25 \text{ }^\circ\text{C}$
- Ignition temp.:  $355 \text{ }^\circ\text{C}$
- Vapour pressure: ( $20 \text{ }^\circ\text{C}$ )  $4 \text{ hPa}$
- LD 50 (oral, rat):  $> 5000 \text{ mg/kg}$
- EC-Index-No.: 607-130-00-2 [2]
- ADR: 3 F1 III UN 1104
- IMDG: 3 III UN 1104
- IATA/ICAO: 3 III UN 1104
- GHS-signal word: Warning
- GHS-H sentences: H226 - EUH066
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a

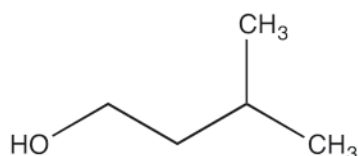
- Tariff number: 2915 39 30 00
- Applications: analytical chemistry, solvents, synthesis of organic products, perfumery.

### Specifications:

assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density ( $20^\circ/4^\circ$ ) ..... $0,872 - 0,873$   
 free acid (as  $\text{CH}_3\text{COOH}$ ) .....max.  $0,02 \%$   
 copper (Cu) .....max.  $0,00002 \%$   
 iron (Fe) .....max.  $0,00005 \%$   
 lead (Pb) .....max.  $0,00002 \%$   
 nickel (Ni) .....max.  $0,00002 \%$   
 isoamyl alcohol (G.C.) .....max.  $1 \%$   
 residue on evaporation .....max.  $0,005 \%$   
 water (K.F.) .....max.  $0,1 \%$

Art. No.	Volume	Container
AC01571000	1 l	0

## Isoamyl alcohol



- Synonyms: 3-Methyl-1-butanol, Isopentyl alcohol
- $C_5H_{12}O$
- $M = 88,15 \text{ g/mol}$
- CAS [123-51-3]
- EINECS-No.: 204-633-5
- Density:  $0,81 \text{ g/cm}^3$
- Solub. in water: ( $20 \text{ }^\circ\text{C}$ ):  $25 \text{ g/l}$
- Melting point:  $-117 \text{ }^\circ\text{C}$
- Boiling point:  $131 \text{ }^\circ\text{C}$
- Flash pt.  $43 \text{ }^\circ\text{C}$
- Ignition temp.:  $340 \text{ }^\circ\text{C}$
- Vapour pressure: ( $20 \text{ }^\circ\text{C}$ )  $3,1 \text{ hPa}$
- Dielectric const.: ( $20 \text{ }^\circ\text{C}$ )  $14,7$

- LD 50 (oral, rat):  $> 5000 \text{ mg/kg}$
- EC-Index-No.: 603-006-00-7
- ADR: 3 F1 III UN 1105
- IMDG: 3 III UN 1105
- IATA/ICAO: 3 III UN 1105
- GHS-signal word: Warning
- GHS-H sentences: H226 - H302
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2905 19 00 98
- Applications: analytical chemistry, solvents, synthesis of organic products, for determination of: fats in milk.

## AL0285 Isoamyl alcohol, mixture of isomers, extra pure



total isomer content (G.C.) .....min. 99 %  
 organic impurities .....passes test  
 suitability for det. of fat in  
 milk .....passes test  
 water (K.F.) .....max.  $0,3 \%$

Art. No.	Volume	Container
AL02851000	1 l	0
AL02852500	2,5 l	0
AL0285005P	5 l	0

## ME0376 Isoamyl alcohol, reagent grade, ACS



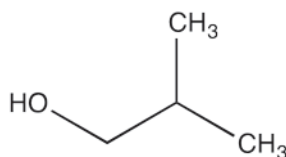
assay (G.C.) .....min. 98,5 %  
 identity (IR-spectrum) .....passes test  
 density ( $20^\circ/4^\circ$ ) ..... $0,808 - 0,809$   
 appearance .....clear  
 colour (Hazen) .....max. 10  
 acidity .....max.  $0,002 \text{ meq/g}$   
 aluminium (Al) .....max.  $0,00005 \%$   
 barium (Ba) .....max.  $0,00001 \%$   
 boron (B) .....max.  $0,000002 \%$   
 cadmium (Cd) .....max.  $0,000005 \%$   
 calcium (Ca) .....max.  $0,00005 \%$   
 chromium (Cr) .....max.  $0,000002 \%$   
 cobalt (Co) .....max.  $0,000002 \%$

copper (Cu) .....max.  $0,000002 \%$   
 iron (Fe) .....max.  $0,00001 \%$   
 lead (Pb) .....max.  $0,00001 \%$   
 magnesium (Mg) .....max.  $0,00001 \%$   
 manganese (Mn) .....max.  $0,000002 \%$   
 nickel (Ni) .....max.  $0,000002 \%$   
 tin (Sn) .....max.  $0,00001 \%$   
 zinc (Zn) .....max.  $0,00001 \%$   
 acids, esters (as  
 pentyacetate) .....max.  $0,06 \%$   
 carbonyl compounds (as CO) .....max.  $0,005 \%$   
 furfural .....max.  $0,0001 \%$   
 2,2- dimethyl-1- propanol (G.C.) .....max.  $0,2 \%$

2- methyl-1- butanol (G.C.) .....max.  $1 \%$   
 1-pentanal (G.C.) .....max.  $0,5 \%$   
 1-pentanol (G.C.) .....max.  $0,5 \%$   
 substances darkened by  $\text{H}_2\text{SO}_4$  .....passes test  
 residue on evaporation .....max.  $0,002 \%$   
 water (K.F.) .....max.  $0,2 \%$

Art. No.	Volume	Container
ME03761000	1 l	0
ME03762500	2,5 l	0
ME0376005P	5 l	0

## Isobutanol



- Synonyms: 2-Methyl-1-propanol, Isobutyl alcohol, Isopropylcarbinol, iso-Butanol
- $C_4H_{10}O$
- $M = 74,12 \text{ g/mol}$
- CAS [78-83-1]
- EINECS-No.: 201-148-0
- Density:  $0,8 \text{ g/cm}^3$
- Solub. in water: ( $20 \text{ }^\circ\text{C}$ ):  $80 \text{ g/l}$
- Melting point:  $-108 \text{ }^\circ\text{C}$
- Boiling point:  $108 \text{ }^\circ\text{C}$
- Flash pt.  $28 \text{ }^\circ\text{C}$
- Ignition temp.:  $430 \text{ }^\circ\text{C}$
- Vapour pressure: ( $20 \text{ }^\circ\text{C}$ )  $12 \text{ hPa}$
- Refraction index: ( $n_{20 \text{ }^\circ\text{C}/D}$ )  $1,3955$
- Dielectric const.: ( $20 \text{ }^\circ\text{C}$ )  $17,7$

- LD 50 (oral, rat):  $2460 \text{ mg/kg}$
- EC-Index-No.: 603-108-00-1
- ADR: 3 F1 III UN 1212
- IMDG: 3 III UN 1212
- IATA/ICAO: 3 III UN 1212
- GHS-signal word: Danger
- GHS-H sentences: H318 - H226 - H335 - H336 - H315
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2905 14 90 00
- Applications: synthesis of organic products, perfumery, solvents (painting), analytical chemistry, laboratory reagent.
- Appearance: Colourless clear liquid

## AL0293 Isobutanol, synthesis grade



assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,801 - 0,802  
 residue on evaporation . . . . .max. 0,005 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AL02931000	1 l	Ø
AL02932500	2,5 l	Ø
AL0293005P	5 l	Ø
AL0293025P	25 l	Ø

## AL0295 Isobutanol, reagent grade, ACS



assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,801 - 0,802  
 colour (Hazen) . . . . .max. 10  
 acidity . . . . .max. 0,0005 meq/g  
 solubility in water . . . . .passes test  
 aluminium (Al) . . . . .max. 0,00005 %  
 boron (B) . . . . .max. 0,000002 %  
 barium (Ba) . . . . .max. 0,00001 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %

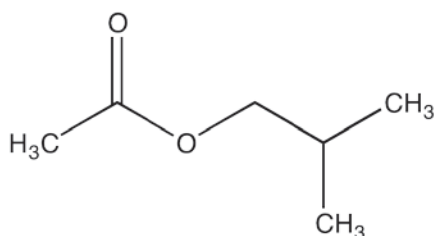
cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 n-butyl alcohol (G.C.) . . . . .max. 0,1 %  
 isobutyraldehyde (G.C.) . . . . .max. 0,05 %  
 n-butyraldehyde (G.C.) . . . . .max. 0,01 %

2-butanol (G.C.) . . . . .max. 0,05 %  
 methylethylketone (G.C.) . . . . .max. 0,02 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . .max. 0,001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,05 %

Art. No.	Volume	Container
AL02951000	1 l	Ø
AL02952500	2,5 l	Ø
AL0295005P	5 l	Ø

## Isobutyl acetate

### AC0170 Isobutyl acetate, synthesis grade



- Synonyms: Acetic acid isobutyl ester
- C<sub>6</sub>H<sub>12</sub>O<sub>2</sub>
- M = 116,16 g/mol
- CAS [110-19-0]
- EINECS-No.: 203-745-1
- Density: 0,87 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 7 g/l
- Melting point: -99 °C
- Boiling point: 116 - 118 °C
- Flash pt. 18 °C
- Ignition temp.: 510 °C
- Vapour pressure: (20 °C) 17 hPa
- Refraction index: (n 20 °C/D) 1,3877
- Dielectric const.: (20 °C) 5,3
- LD 50 (oral, rat): 13400 mg/kg
- EC-Index-No.: 607-026-00-7 [3]
- ADR: 3 F1 II UN 1213
- IMDG: 3 II UN 1213

- IATA/ICAO: 3 II UN 1213
- GHS-signal word: Danger
- GHS-H sentences: H225 - EUH066
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2915 34 00 00
- Applications: synthesis of organic products, solvents, in food industry.

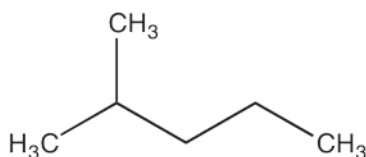
#### Specifications:

assay (G.C.) . . . . .min. 96 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,870 - 0,875  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AC01701000	1 l	Ø

## Isohexane

### IS0122 Isohexane, Multisolvent® HPLC grade UV-VIS



(main isomer)

- C<sub>6</sub>H<sub>14</sub>
- M = 86,18 g/mol
- CAS [73513-42-5]
- EINECS-No.: 295-570-2
- Density: 0,65 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,02 g/l
- Melting point: -153 °C
- Boiling point: 53 - 63 °C
- Flash pt. -26 °C
- Ignition temp.: 260 °C
- Vapour pressure: (20 °C) 240 hPa
- LD 50 (oral, rat): > 5000 mg/kg
- EC-Index-No.: 601-007-00-7
- ADR: 3 F1 II UN 1208
- IMDG: 3 II UN 1208
- IATA/ICAO: 3 II UN 1208
- GHS-signal word: Danger
- GHS-H sentences: H224 - H304 - H315 - H336 - H411
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2901 10 00 00
- Applications: analytical chemistry, chromatography, solvent for fat and oil extractions.
- Appearance: Colourless, clear liquid

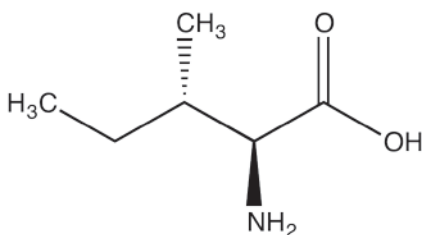
boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000001 %  
 calcium (Ca) . . . . .max. 0,00003 %  
 chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,000002 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000001 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,000001 %  
 n-hexane (G.C.) . . . . .max. 3 %  
 aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) . . . . .max. 0,01 %  
 sulfur compounds (as S) . . . . .max. 0,005 %  
 thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . .max. 0,0001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test  
 residue on evaporation . . . . .max. 0,0002 %  
 water (K.F.) . . . . .max. 0,005 %  
 min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 200 nm . . . . .10 % 1,000 AU  
 210 nm . . . . .50 % 0,301 AU  
 217 nm . . . . .70 % 0,155 AU  
 225 nm . . . . .80 % 0,097 AU  
 245 nm . . . . .98 % 0,009 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
IS01221000	1 l	Ø
IS01222500	2,5 l	Ø

# Isoleu

## L-Isoleucine

### IS0140 L-Isoleucine, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms: Ile, 2-Amino-3-methylvaleric acid, (2S,3S)-2-Amino-3-methylpentanoic acid
- $C_6H_{13}NO_2$
- $M = 131,18$  g/mol
- CAS [73-32-5]
- EINECS-No.: 200-798-2
- Solub. in water: (20 °C): 32,1 g/l
- Melting point: 279 - 280 °C (decomposes)
- Tariff number: 2922 49 95 90
- Applications: synthesis of organic products, for pharmaceuticals synthesizing, in food industry.

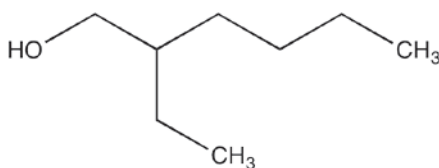
#### Specifications:

assay (titration with  $HClO_4$ , on dried sample) ..... 98,5 - 101,5 %  
 identification ..... passes test  
 appearance of solution ..... passes test

specific rotation( $[\alpha]_{20}^D$ ;  $c = 4$ , HCl 6N, on dried sample) ..... + 38,9° - + 43,0°  
 pH (1 %,  $H_2O$ ) ..... 5,5 - 7,0  
 chlorides ( $Cl^-$ ) ..... max. 0,05 %  
 sulfates ( $SO_4$ ) ..... max. 0,03 %  
 heavy metals (as Pb) ..... max. 0,0015 %  
 iron (Fe) ..... max. 0,003 %  
 ninhydrin-positive substances ..... max. 0,5 %  
 residue on ignition ..... max. 0,3 %  
 loss on drying (105 °C, 3 h) ..... max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
IS01400025	25 g	0

## Isooctanol



- Synonyms: 2-Ethyl-1-hexanol, Isooctyl alcohol
- $C_8H_{18}O$
- $M = 130,23$  g/mol
- CAS [104-76-7]
- EINECS-No.: 203-234-3
- Density: 0,83 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 1,1 g/l
- Melting point: -76 °C
- Boiling point: 185 °C
- Flash pt. 75 °C
- Ignition temp.: 270 - 330 °C
- Vapour pressure: (20 °C) 0,13 hPa
- Refraction index: (n 20 °C/D) 1,4317

- Dielectric const.: (20 °C) 7,7
- LD 50 (oral, rat): 3730 mg/kg
- ADR: Not regulated/MDG: Not regulated/IATA/ICAO: 9 UN 3334
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2905 16 85 10
- Applications: analytical chemistry, chromatography, in the textile industry, solvents (manufacture of dyes, resins, oils), antifoaming agent.

### ET0205 Isooctanol, extra pure

assay (G.C.) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/4°) ..... 0,832 - 0,833  
 acidity ..... max. 0,002 meq/g

copper (Cu) ..... max. 0,00002 %  
 iron (Fe) ..... max. 0,00005 %  
 lead (Pb) ..... max. 0,00002 %  
 nickel (Ni) ..... max. 0,00002 %

water (K.F.) ..... max. 0,15 %

Art. No.	Volume	Container
ET02051000	1 l	0

### IS0162 Isooctanol, HPLC grade

assay (G.C.) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/4°) ..... 0,832 - 0,833  
 acidity ..... max. 0,002 meq/g  
 alkalinity ..... max. 0,001 meq/g  
 residue on evaporation ..... max. 0,0003 %

water (K.F.) ..... max. 0,15 %  
 min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 T(%) A (AU)  
 240 nm ..... 40 % 0,398 AU  
 260 nm ..... 80 % 0,097 AU

Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
IS01622500	2,5 l	0

## Isoparaffin L

### IS0170 Isoparaffin L, synthesis grade

- Synonyms: Isopar L
- CAS [64742-48-9]
- EINECS-No.: 265-150-3
- Density: 0,770 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: 260 °C
- Refraction index: (n 20 °C/D) 1,428
- EC-Index-No.: 649-327-00-6
- GHS-signal word: Danger

- GHS-H sentences: H340 - H350 - H304
- GHS-P sentences: P281 - P301 + P310 - P308 + P313 - P331 - P405 - P501a
- Tariff number: 2712 20 90 00
- Applications: solvents, substitute of xylene, in combustion processes.

#### Specifications:

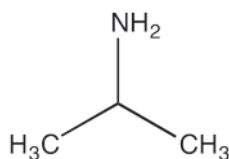
aromatic hydrocarbons (as  $C_6H_6$ ) ..... max. 0,1 %

sulfur compounds (as S) ..... max. 0,001 %  
 residue on ignition ..... max. 0,005 %  
 water (K.F.) ..... max. 0,05 %

Art. No.	Volume	Container
IS01701000	1 l	0
IS0170005P	5 l	0
IS0170025P	25 l	0

## Isopropylamine

## IS0175 Isopropylamine, synthesis grade



- Synonyms: 2-Aminopropane
- $C_3H_7N$
- $M = 59,11$  g/mol
- CAS [75-31-0]
- EINECS-No.: 200-860-9
- Density: 0,69 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -101 °C
- Boiling point: 31 - 33 °C
- Flash pt. -37 °C
- Ignition temp.: 330 °C
- Vapour pressure: (20 °C) 632 hPa
- Refraction index: (n 20 °C/D) 1,3746
- LD 50 (oral, rat): 550 mg/kg
- EC-Index-No.: 612-007-00-1
- ADR: 3 FC I UN 1221
- IMDG: 3 I UN 1221
- IATA/CAO: 3 I UN 1221

- GHS-signal word: Danger
- GHS-H sentences: H224 - H315 - H319 - H335
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2921 19 30 00
- Applications: synthesis of organic products, analytical chemistry, chromatography.

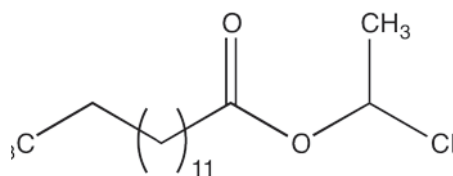
## Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,687 - 0,688  
 water (K.F.) . . . . .max. 0,5 %

Art. No.	Volume	Container
IS01751000	1 l	0

## Isopropyl myristate

## MI0020 Isopropyl myristate, synthesis grade



- Synonyms: Tetradecanoic acid isopropyl ester, Myristic acid isopropyl ester
- $C_{17}H_{34}O_2$
- $M = 270,46$  g/mol
- CAS [110-27-0]
- EINECS-No.: 203-751-4
- Density: 0,85 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: 0 - 1 °C
- Boiling point: (3 hPa) 140 °C
- Flash pt. 150 °C
- Ignition temp.: > 300 °C
- Vapour pressure: (20 °C) < 1hPa
- Refraction index: (n 20 °C/D) 1,4340

- Tariff number: 2915 90 80 90
- Applications: synthesis of organic products, cosmetics, for pharmaceuticals synthesizing.

## Specifications:

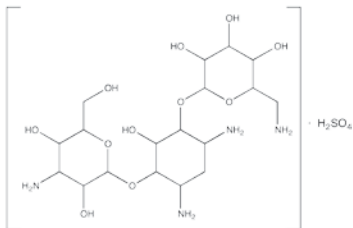
assay (G.C.) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,853 - 0,854  
 residue on ignition . . . . .max. 0,01 %  
 water (K.F.) . . . . .max. 0,05 %

Art. No.	Volume	Container
MI00201000	1 l	0

# Kanamy

## Kanamycin sulfate

### KA0010 Kanamycin sulfate, molecular biology grade



- Synonyms: Kanamycin A sulfate
- $C_{18}H_{36}N_8O_{11} \cdot H_2SO_4$
- $M = 582,58 \text{ g/mol}$
- CAS [25389-94-0]
- EINECS-No.: 246-933-9
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H360
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a

- Tariff number: 2941 90 00 90
- Applications: for microbiology, antibiotic.

#### Specifications:

specific rotation ( $[\alpha]_{20}^D$ ,  $c = 1, H_2O$ ) . + 112 ° - + 123 °  
 pH (1 %,  $H_2O$ ) . . . . . 6,5 - 8,5  
 loss on drying (60 °C, 1Torr) . . . . . max. 1,5 %

Art. No.	Volume	Container
KA00100005	5 g	0
KA00100025	25 g	0

## Karl Fischer reagents, free from pyridine, for volumetric titration

### AQ0003 Aquagent® Complet 5, free from pyridine, one-component reagent for volumetric Karl Fischer titration



- Density: 1,17 g/cm<sup>3</sup>
- Boiling point: 194 °C
- Flash pt. 90 °C
- GHS-signal word: Danger
- GHS-H sentences: H360D
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent.

#### Specifications:

1 ml = 5 mg  $H_2O$  approx.  
 Contains imidazole, sulfur dioxide and diethyleneglycol monoethyl ether Air humidity will change the titre  
 Protect from moisture

Art. No.	Volume	Container
AQ00030500	500 ml	0
AQ00031000	1 l	0
AQ00032500	2,5 l	0

### AQ0007 Aquagent® Complet 2, free from pyridine, one-component reagent for volumetric Karl Fischer titration



- Density: 1,13 g/cm<sup>3</sup>
- Boiling point: 194 °C
- Flash pt. 90 °C
- GHS-signal word: Danger
- GHS-H sentences: H319 - H360D
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, laboratory reagent.

#### Specifications:

1 ml = 2 mg  $H_2O$  approx.  
 Contains imidazole, sulfur dioxide and diethyleneglycol monoethyl ether Air humidity will change the titre  
 Protect from moisture

Art. No.	Volume	Container
AQ00070500	500 ml	0
AQ00071000	1 l	0
AQ00072500	2,5 l	0

### AQ0009 Aquagent® buffer, free from pyridine, buffer capacity 5 mmol acid/ml



- Density: ~ 0,96 g/cm<sup>3</sup>
- Flash pt. 11 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger

- GHS-H sentences: H225 - H331 - H370 - H314 - H360D
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent.

**Specifications:**  
 contains methanol

Art. No.	Volume	Container
AQ00090500	500 ml	0
AQ00091000	1 l	0

### AQ0004 Aquagent® Complet 5K, free from pyridine, one-component reagent for volumetric Karl Fischer titration (ketones, aldehydes)



- Density: 1,17 g/cm<sup>3</sup>
- Boiling point: 194 °C
- Flash pt. 90 °C
- GHS-signal word: Danger
- GHS-H sentences: H360D
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent.

#### Specifications:

1 ml = 5 mg  $H_2O$  approx.  
 Contains imidazole, sulfur dioxide and diethyleneglycol monoethyl ether Air humidity will change the titre  
 Protect from moisture

Art. No.	Volume	Container
AQ00040500	500 ml	0
AQ00041000	1 l	0

### AQ0005 Aquagent® Medium K, free from pyridine, solvent for volumetric Karl Fischer titration (ketones, aldehydes)



- Density: 1,35 g/cm<sup>3</sup>
- Boiling point: 60 °C
- ADR: 6.1 T1 I UN 2810
- IMDG: 6.1 I UN 2810
- IATA/ICAO: 6.1 I UN 2810
- GHS-signal word: Danger
- GHS-H sentences: H301 - H310 - H310 - H330 - H351 - H373 - H315 - EUH209

- GHS-P sentences: P260 - P301 + P310 - P320 - P361 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent.

#### Specifications:

For use with: Aquagent® Complet 5K (AQ0004)  
 contains trichloromethane and 2-chloroethanol

Art. No.	Volume	Container
AQ00050500	500 ml	0
AQ00051000	1 l	0

### AQ0006 Aquagent® Titrant 2, free from pyridine, titrant-component for volumetric Karl Fischer titration



- Flash pt. 11 °C
- LD 50 (oral, rat): 5628 mg/kg (methanol)
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger
- GHS-H sentences: H225 - H331 - H370

- GHS-P sentences: P210 - P241 - P260 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent.

#### Specifications:

For use with: Aquagent® Solvent (AQ0002)

1 ml = 2,00 ± 0,02 mg  $H_2O$  (20 °C)  
 Contains methanol

Art. No.	Volume	Container
AQ00060500	500 ml	0
AQ00061000	1 l	0

**AQ0001 Aquagent® Titrant 5, free from pyridine, titrant-component for volumetric Karl Fischer titration**



- Density: ~ 0,86 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 11 °C
- LD 50 (oral, rat): 5628 mg/kg (methanol)
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger

- GHS-H sentences: H225 - H331 - H370
- GHS-P sentences: P210 - P241 - P260 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent.

1 ml = 5,00 ± 0,02 mg H<sub>2</sub>O (20 °C)  
Contains methanol

**Specifications:**  
For use with: Aquagent® Solvent (AQ0002)

Art. No.	Volume	Container
AQ00010500	500 ml	0
AQ00011000	1 l	0
AQ00012500	2,5 l	0

**AQ0002 Aquagent® Solvent, free from pyridine, solvent-component for volumetric Karl Fischer titration**



- Density: ~ 0,91 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 12 °C
- LD 50 (oral, rat): 5628 mg/kg (methanol)
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger

- GHS-H sentences: H225 - H331 - H370 - H314 - H360D
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent.

**Specifications:**  
For use with: Aquagent® Titrant 5 (AQ0001) Aquagent® Titrant 2 (AQ0006)  
Contains imidazole, sulfur dioxide and methanol

Art. No.	Volume	Container
AQ00021000	1 l	0
AQ00022500	2,5 l	0

**AQ0011 Aquagent® Methanol Fast**



- Density: 0,82 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 11 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger
- GHS-H sentences: H225 - H331 - H314 - H360D - H370

- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00

**Specifications:**  
For use with: Aquagent® Complet 5 (AQ0003) Aquagent® Complet 2 (AQ0007)  
Reagent for accelerated volumetric titration  
Contains imidazole, sulfur dioxide and methanol

Art. No.	Volume	Container
AQ00111000	1 l	0
AQ00112500	2,5 l	0

**AQ0008 Aquagent® Solvent CM, solvent-component for volumetric Karl Fischer titration in oils and fats**



- Density: 1,33 g/cm<sup>3</sup>
- Boiling point: 60 - 65 °C
- Flash pt. > 100 °C
- ADR: 6.1 T1 II UN 2810
- IMDG: 6.1 II UN 2810
- IATA/ICAO: 6.1 II UN 2810
- GHS-signal word: Danger
- GHS-H sentences: H311 - H370 - H351 - H373 - H314 - H302 - H332 - EUH209 - H360D

- GHS-P sentences: P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for water determination.

Contains imidazole, sulfur dioxide, chloroform and methanol

**Specifications:**  
For use with: Aquagent® Titrant 5 (AQ0001) Aquagent® Titrant 2 (AQ0006)

Art. No.	Volume	Container
AQ00081000	1 l	0
AQ00082500	2,5 l	0

**AQ0010 Aquagent® Solvent Oil, solvent-component for volumetric Karl Fischer titration in oils and fats, free from halogenated hydrocarbons**



- Density: ~ 0,835 g/cm<sup>3</sup>
- Boiling point: 63 °C
- Flash pt. 17 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger
- GHS-H sentences: H225 - H370 - H302 - H332 - H315 - H360D -

- GHS-P sentences: P210 - P241 - P260 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent.

1-hexanol and methanol. Contains imidazole, sulfur dioxide, Free from halogenated hydrocarbons

**Specifications:**  
For use with: Aquagent® Titrant 5 (AQ0001) Aquagent® Titrant 2 (AQ0006)

Art. No.	Volume	Container
AQ00101000	1 l	0

**Karl Fischer reagents, free from pyridine, for coulometric titration**

**AQ0022 Aquagent® Coulometric A, anolyte for coulometric Karl Fischer titration**



- Density: 1,07 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: 59 °C
- Flash pt. 11 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger

- GHS-H sentences: H225 - H311 - H331 - H370 - H351 - H373 - H314 - H302 - H360D
- GHS-P sentences: P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 3822 00 00 00

Contains methanol, chloroform, imidazole, sulfur dioxide.  
Suitable for cells with diaphragm.  
Protect from moisture.

**Specifications:**  
Suitability for coulometric  
KF titration . . . . .passes test

Art. No.	Volume	Container
AQ00220500	500 ml	0

**AQ0023 Aquagent® Coulometric CG, catholyte for coulometric Karl Fischer titration**



- Density: 1,06 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: 63 °C
- Flash pt. 14 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger

- GHS-H sentences: H225 - H331 - H370 - H319
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 3822 00 00 00

Contains methanol.  
Suitable for cells with diaphragm.  
Protect from moisture.

**Specifications:**  
Suitability for coulometric  
KF titration . . . . .passes test

Art. No.	Volume	Container
AQ00230050	10 x 5 ml	0
AQ00230100	100 ml	0

# Karlfi

## AQ0024 Aquagent® Coulometric AG, for coulometric Karl Fischer titration, suitable for cells without diaphragm



- Density: 0,93 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: 63 °C
- Flash pt. 14 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger

- GHS-H sentences: H225 - H331 - H370 - H314 - H360D
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00

Contains methanol, diethanolamine, imidazole, sulfur dioxide.  
Protect from moisture.

Art. No.	Volume	Container
AQ00240500	500 ml	
AQ00241000	1 l	

**Specifications:**  
Suitability for coulometric KF titration . . . . . passes test

## AQ0025 Aquagent® Coulometric Oil



- Density: 0,98 g/cm<sup>3</sup>
- Flash pt. 8 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger
- GHS-H sentences: H225 - H301 + H311 + H331 - H314 - H351 - H360D - H370 - H372

- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 3822 00 00 00

Contains methanol, chloroform, imidazole, xylol, sulfur dioxide.  
Suitable for cells with diaphragm.  
Protect from moisture.

Art. No.	Volume	Container
AQ00250100	100 ml	

**Specifications:**  
Suitability for coulometric KF titration . . . . . passes test

## Karl Fischer reagents, with pyridine

### RE0013 Karl Fischer reagent 5, one-component reagent



- Density: 1,19 g/cm<sup>3</sup>
- Flash pt. 35 °C
- ADR: 3 FT1 III UN 1992
- IMDG: 3 III UN 1992
- IATA/ICAO: 3 III UN 1992
- GHS-signal word: Danger

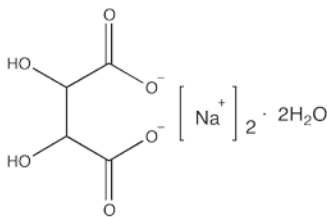
- GHS-H sentences: H360FD - H226 - H312 - H332 - H315
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P321 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for water determination.

**Specifications:**  
1 ml = 5 mg H<sub>2</sub>O approx.

Art. No.	Volume	Container
RE00131000	1 l	

## Karl Fischer reagents, standards

### AQ0030 Aquagent®, di-Sodium tartrate dihydrate, secondary standard for volumetric Karl-Fischer titration



- Synonyms: Tartaric acid sodium salt dihydrate
- C<sub>4</sub>H<sub>4</sub>Na<sub>2</sub>O<sub>6</sub>·2H<sub>2</sub>O
- M = 230,08 g/mol
- CAS [6106-24-7]
- EINECS-No.: 212-773-3
- Solub. in water: (20 °C): 290 g/l
- Melting point: 154 °C
- LD 50 (oral, rat): 1290 mg/kg
- Tariff number: 2918 13 00 90

Applications: analytical chemistry, for water determination.

**Specifications:**  
water . . . . . 15,61 - 15,71 %

Art. No.	Volume	Container
AQ00300025	25 g	
AQ00300100	100 g	

### AQ0020 Aquagent®, standard solution 10



- Density: 1,00 g/cm<sup>3</sup>
- Flash pt. 30 °C
- ADR: 3 F1 III UN 1993
- IMDG: 3 III UN 1993
- IATA/ICAO: 3 III UN 1993
- GHS-signal word: Danger
- GHS-H sentences: H318 - H226 - H335 - H336 - H315

- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00

Air humidity will change the water content. Protect from moisture.

Art. No.	Volume	Container
AQ00200080	10 x 8 ml	

**Specifications:**  
Water standard for volumetric KF titration.  
water content . . . . . 10,0 mg/g  
contains . . . . . 10,0 mg H<sub>2</sub>O/1 g standard

### AQ0021 Aquagent®, standard solution 5



- Density: 0,85 g/cm<sup>3</sup>
- Flash pt. 21 °C
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993
- GHS-signal word: Danger
- GHS-H sentences: H225 - H318 - H332 - H335 - H336 - H315
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, standard (for water determination).

Air humidity will change the water content. Protect from moisture.

Art. No.	Volume	Container
AQ00210100	100 ml	
AQ00210500	500 ml	

**Specifications:**  
Water standard for volumetric KF titration.  
water content . . . . . 5,00 ± 0,02 mg/ml  
(5,88 ± 0,02 mg/g)  
contains . . . . . 5,00 mg H<sub>2</sub>O/ml standard

### AQ0019 Aquagent®, standard solution 1



- Density: 1,00 g/cm<sup>3</sup>
- Flash pt. 43 °C
- ADR: 3 F1 III UN 2222
- IMDG: 3 III UN 2222
- IATA/ICAO: 3 III UN 2222
- GHS-signal word: Warning
- GHS-H sentences: H226
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a

- Tariff number: 2909 30 90 90
  - Applications: analytical chemistry, standard (for water determination).
- Specifications:**  
Water standard for coulometric KF titration.  
water content . . . . . 1,0 mg/g  
contains . . . . . 1,0 mg H<sub>2</sub>O/1 g standard

Air humidity will change the water content. Protect from moisture.

Art. No.	Volume	Container
AQ00190040	10 x 4 ml	



## Kerosene

## KE0100 Kerosene, pure



- Synonyms: Coal oil, Deobase
- CAS [8008-20-6]
- EINECS-No.: 232-366-4
- Density: 0,78 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Boiling point: 190 - 250 °C
- Flash pt. 77 °C
- Ignition temp.: 227 °C
- Vapour pressure: (20 °C) 0,23 mm
- Refraction index: (n 20 °C/D) 1,437

- EC-Index-No.: 649-404-00-4
- ADR: 3 F1 III UN 1223
- IMDG: 3 III UN 1223
- IATA/ICAO: 3 III UN 1223
- GHS-signal word: Danger
- GHS-H sentences: H304 -
- GHS-P sentences: P301 + P310 - P331 - P405 - P501a
- Tariff number: 2710 19 25 00
- Applications: as fuel, solvents, degreasing agent.

**Specifications:**

refractive index n<sub>20</sub>/D. . . . . 1,441 - 1,451  
 residue on ignition . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,01 %

Art. No.	Volume	Container
KE01002500	2,5 l	
KE0100005L	5 l	
KE0100025L	25 l	

## Kjeldahl catalysts

## ME0680 Kjeldahl catalyst (Cu-Se), for quick determination of nitrogen, according to Wieninger

- Synonyms: Wieninger's reagent
- Solub. in water: (20 °C): partially soluble
- GHS-H sentences: H412
- GHS-P sentences: P273 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, nitrogen determinations.

**Specifications:**

assay of copper(II) sulfate (complexometric). . . . . min. 1,45 %  
 assay of selenium (gravimetric). . . . . min. 1,5 %  
 assay of sodium sulfate (acidimetric). . . . . min. 94 %  
 suitability for det. of total N . . . . . passes test

Art. No.	Volume	Container
ME06801000	1 kg	
ME0680005P	5 kg	

- GHS-signal word: Warning
- GHS-H sentences: H373 - H411 - H401

- GHS-P sentences: P260 - P273 - P270 - P304 + P340 - P312 - P501a

- Tariff number: 3815 90 90 90
- Applications: catalyst.

## CA0393 Kjeldahl catalyst (Cu-Se), tablets 5 g



composition:  
 potassium sulfate (K<sub>2</sub>SO<sub>4</sub>) . . . . . approx. 96,5 %  
 copper (II) sulfate 5-hydrate . . . . . approx. 1,5 %  
 selenium (Se) . . . . . approx. 2 %

Art. No.	Volume	Container
CA03931000	1 kg	
CA0393005P	5 kg	

## CA0394 Kjeldahl catalyst (Cu-Se), tablets 1 g



composition:  
 potassium sulfate (K<sub>2</sub>SO<sub>4</sub>) . . . . . approx. 96,5 %  
 copper (II) sulfate 5-hydrate . . . . . approx. 1,5 %

selenium (Se) . . . . . approx. 2 %

Art. No.	Volume	Container
CA03941000	1 kg	

## CA0396 Kjeldahl catalyst (Cu), tablets 4 g



- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-H sentences: H411
- GHS-P sentences: P273 - P391 - P501a

- Tariff number: 3822 00 00 00

copper (II) sulfate 5-hydrate . . . . . approx. 6,25 %

**Specifications:**

composition:  
 potassium sulfate (K<sub>2</sub>SO<sub>4</sub>) . . . . . approx. 93,75 %

Art. No.	Volume	Container
CA0396004P	4 kg	

## Kovacs' reagent

## RE0007 Kovacs' reagent, for microbiology



- Density: 0,89 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 36 °C
- ADR: 3 F1 III UN 1993
- IMDG: 3 III UN 1993
- IATA/ICAO: 3 III UN 1993
- GHS-signal word: Warning
- GHS-H sentences: H226 - H302 - H315 - H319 - H335

- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: laboratory reagent, antibiotic.

hydrochloric acid 37 % . . . . . 240 ml  
 suitability for microbiology. . . . . passes test

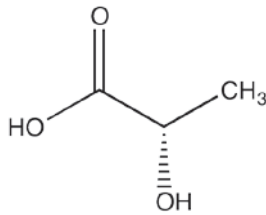
**Specifications:**

composition:  
 4-Dimethylamino benzaldehyde . . . . . 50 g  
 isoamyl alcohol. . . . . 710 ml

Art. No.	Volume	Container
RE0007G100	100 ml	
RE00071000	1 l	

# Lactic

## L(+)-Lactic acid



- Synonyms: 2-Hydroxypropanoic acid, Lactol
- $C_3H_6O_3$
- $M = 90,08$  g/mol
- CAS [79-33-4]
- EINECS-No.: 200-018-0
- Density: 1,21 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 18 °C
- Boiling point: (20 hPa) 122 °C

- LD 50 (oral, rat): 3543 mg/kg (pure substance)
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2918 11 00 00
- Applications: in food industry.

### AC1380 L(+) -Lactic acid, 88 - 92%, extra pure, Pharpur®, Ph Eur, BP

assay (acidimetric) . . . . . 88 - 92 %  
 identification . . . . . passes test  
 density (20°/4°) . . . . . 1,20 - 1,21  
 appearance . . . . . passes test  
 ether-insoluble substances . . . . . passes test  
 citric, oxalic and phosphoric acids . . . . . passes test  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,02 %

calcium (Ca) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 methanol . . . . . max. 0,005 %  
 sugars and other reducing  
 substances . . . . . passes test  
 residue on ignition (600 °C) . . . . . max. 0,1 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC13801000	1 l	
AC1380005P	5 l	

### AC1381 L(+) -Lactic acid, 88- 90%, reagent grade, ACS, Reag. Ph Eur

assay (acidimetric) . . . . . min. 88 %  
 density (20°/4°) . . . . . 1,20 - 1,21  
 insoluble in C<sub>2</sub>H<sub>5</sub>OC<sub>2</sub>H<sub>5</sub> . . . . . passes test  
 aldehydes . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,002 %  
 arsenic (As) . . . . . max. 0,00001 %

copper (Cu) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0002 %  
 lead (Pb) . . . . . max. 0,0005 %  
 nickel (Ni) . . . . . max. 0,0005 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on ignition . . . . . max. 0,01 %

Art. No.	Volume	Container
AC13811000	1 l	
AC1381005P	5 l	

## Lactophenol blue, solution

### AZ0175 Lactophenol blue, solution for microscopy

- Density: 1,18 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 6.1 TC1 II UN 2927
- IMDG: 6.1 II UN 2927
- IATA/ICAO: 6.1 II UN 2927
- GHS-signal word: Danger
- GHS-H sentences: H314 - H341 - H373 - H302 - H332

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00

glycerol . . . . . 520 ml  
 cotton blue . . . . . 0,4 g  
 distilled water . . . . . 26 ml  
 suitability for microscopy . . . . . passes test

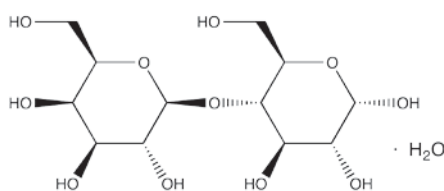
#### Specifications:

composition :  
 lactic acid 90 % . . . . . 260 ml  
 phenol . . . . . 260 g

Art. No.	Volume	Container
AZ0175G100	100 ml	

## D(+)-Lactose monohydrate

### LA0060 D(+) -Lactose monohydrate, extra pure, Pharpur®, Ph Eur, BP, NF



- Synonyms: Lactobiose, Milk sugar
- $C_{12}H_{22}O_{11} \cdot H_2O$
- $M = 360,32$  g/mol
- CAS [10039-26-6]
- EINECS-No.: 200-559-2
- Solub. in water: (20 °C): freely soluble
- Melting point: 202 °C
- Tariff number: 1702 11 00 00

• Applications: analytical chemistry, synthesis of organic products, in food industry, for pharmaceuticals synthesizing, in biochemistry, nutrient media for bacterial culture, in pharma industry.

#### Specifications:

identity (IR-spectrum) . . . . . passes test  
 specific rotation ( $[\alpha]_D^{20}$ , c = 10, H<sub>2</sub>O) . . . . . + 54,4 ° - + 55,9 °  
 acidity or alkalinity . . . . . passes test  
 appearance of solution (10 %, H<sub>2</sub>O) . . . . . passes test

absorbance . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 total aerobic microbial count (TAMC) . . . . . max. 100 cfu/g  
 total combined yeast and mould count (TYMC) . . . . . max. 50 cfu/g  
 absence of escherichia coli . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 loss on drying (80 °C, 2 h) . . . . . max. 0,5 %  
 water (K.F.) . . . . . 4,5 - 5,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
LA00600500	500 g	
LA00601000	1 kg	
LA0060005P	5 kg	
LA0060025P	25 kg	

## Lanthanum(III) chloride heptahydrate

### LA0090 Lanthanum(III) chloride heptahydrate, reagent grade, ACS

- LaCl<sub>3</sub> · 7H<sub>2</sub>O
- $M = 371,37$  g/mol
- CAS [10025-84-0]
- EINECS-No.: 233-237-5
- Solub. in water: (20 °C): soluble
- Melting point: 91 °C (release of crystalline water)
- LD 50 (oral, rat): 4184 mg/kg (anhydrous substance)
- Tariff number: 2846 90 00 00
- Applications: analytical chemistry, laboratory reagent, desiccant (painting), catalyst (in the petrochemical industry).

#### Specifications:

assay (gravimetric) . . . . . min. 98 %  
 identity . . . . . passes test  
 insoluble in water . . . . . max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
 calcium (Ca) . . . . . max. 0,001 %  
 copper (Cu) . . . . . max. 0,0003 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0005 %  
 magnesium (Mg) . . . . . max. 0,0001 %

potassium (K) . . . . . max. 0,001 %  
 sodium (Na) . . . . . max. 0,005 %  
 zinc (Zn) . . . . . max. 0,0003 %

Art. No.	Volume	Container
LA00900100	100 g	
LA00900250	250 g	

## Lanthanum(III) nitrate hexahydrate

## LA0100 Lanthanum(III) nitrate hexahydrate, reagent grade



- $\text{La}(\text{NO}_3)_3 \cdot 6\text{H}_2\text{O}$
- $M = 433,02 \text{ g/mol}$
- CAS [10277-43-7]
- EINECS-No.: 233-238-0
- Solub. in water: (20 °C): soluble
- Melting point: 40 °C
- Boiling point: 126 °C (decomposes)
- ADR: 5.1 O2 II UN 1477
- IMDG: 5.1 II UN 1477
- IATA/ICAO: 5.1 II UN 1477
- GHS-signal word: Danger
- GHS-H sentences: H272 - H318
- GHS-P sentences: P221 - P210 - P220 - P305 + P351 + P338 - P310 - P501a

- Tariff number: 2846 90 00 00
- Applications: analytical chemistry, for biology, catalyst, in the electronic industry, stain for electron microscopy, manufacture of glass, in the ceramics industry.
- Appearance: White crystals

heavy metals (as Pb) . . . . .max. 0,002 %  
 iron (Fe) . . . . .max. 0,002 %  
 magnesium (Mg) . . . . .max. 0,002 %  
 neodymium (Nd) . . . . .max. 0,02 %  
 praseodymium (Pr) . . . . .max. 0,02 %  
 sodium (Na) . . . . .max. 0,001 %

**Specifications:**

assay (complexometric) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,005 %  
 chlorides (Cl) . . . . .max. 0,005 %  
 sulfates ( $\text{SO}_4$ ) . . . . .max. 0,005 %  
 calcium (Ca) . . . . .max. 0,005 %  
 cerium (Ce) . . . . .max. 0,03 %

Art. No.	Volume	Container
LA01000100	100 g	P
LA01000250	250 g	P

## Lanthanum(III) oxide

## LA0110 Lanthanum(III) oxide, extra pure

- $\text{La}_2\text{O}_3$
- $M = 325,81 \text{ g/mol}$
- CAS [1312-81-8]
- EINECS-No.: 215-200-5
- Solub. in water: (20 °C): insoluble
- Melting point: 2315 °C
- Tariff number: 2846 90 00 00

- Applications: for spectroscopy, in the electronic industry, manufacture of glass, in the ceramics industry.

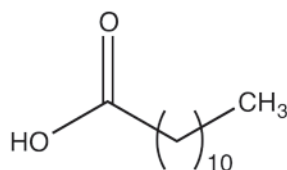
lead (Pb) . . . . .max. 0,005 %  
 nickel (Ni) . . . . .max. 0,005 %  
 iron (Fe) . . . . .max. 0,005 %

**Specifications:**

assay (complexometric) . . . . .min. 98 %  
 insoluble in  $\text{HNO}_3$  . . . . .max. 0,01 %  
 chlorides (Cl) . . . . .max. 0,01 %  
 copper (Cu) . . . . .max. 0,005 %

Art. No.	Volume	Container
LA01100100	100 g	P
LA01100250	250 g	P

## Lauric acid



- Synonyms: Dodecanoic acid
- $\text{C}_{12}\text{H}_{24}\text{O}_2$
- $M = 200,32 \text{ g/mol}$
- CAS [143-07-7]
- EINECS-No.: 205-582-1
- Solub. in water: (20 °C): insoluble
- Melting point: 42 - 45 °C
- Boiling point: (1,3 hPa) 131 °C
- Flash pt. > 160 °C

- Vapour pressure: (20 °C) < 0,01 hPa
- LD 50 (oral, rat): 12000 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2915 90 10 00
- Applications: synthesis of organic products, in food industry, for pharmaceuticals synthesizing.

## AC1392 Lauric acid, synthesis grade



assay (G.C., as methyl ester) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,05 %

Art. No.	Volume	Container
AC13921000	1 kg	P
AC1392005P	5 kg	P

## AC1395 Lauric acid, extra pure, Reag. Ph Eur

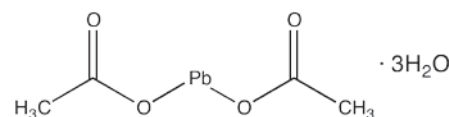


assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 melting range . . . . .43 - 45 °C  
 iodine index . . . . .max. 0,5

saponifiable compounds . . . . .max. 0,5 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,0001 %  
 residue on ignition . . . . .max. 0,01 %

Art. No.	Volume	Container
AC13950100	100 g	P

## Lead(II) acetate trihydrate



- Synonyms: Acetic acid lead salt trihydrate
- $\text{Pb}(\text{CH}_3\text{COO})_2 \cdot 3\text{H}_2\text{O}$
- $M = 379,34 \text{ g/mol}$
- CAS [6080-56-4]
- EINECS-No.: 206-104-4
- Solub. in water: (20 °C): 410 g/l
- Melting point: 75 °C
- LD 50 (oral, rat): 4665 mg/kg
- EC-Index-No.: 082-005-00-8
- ADR: 6.1 T5 III UN 1616

- IMDG: 6.1 III UN 1616
- IATA/ICAO: 6.1 III UN 1616
- GHS-signal word: Danger
- GHS-H sentences: H360Df - H373 - H410
- GHS-P sentences: P260 - P281 - P273 - P308 + P313 - P405 - P501a
- Tariff number: 2915 29 00 90
- Applications: analytical chemistry, manufacture of dyes, stain for electron microscopy.
- Appearance: Colourless to white solid

## PL0114 Lead(II) acetate trihydrate, extra pure



assay (complexometric) . . . . .99,5 - 102 %  
 insoluble in  $\text{CH}_3\text{COOH}$  . . . . .max. 0,005 %  
 chlorides (Cl) . . . . .max. 0,002 %  
 copper (Cu) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %  
 silver (Ag) . . . . .max. 0,001 %

zinc (Zn) . . . . .max. 0,005 %  
 alkali and alkaline earth metals . . . . .max. 0,5 %

Art. No.	Volume	Container
PL01140500	500 g	P
PL01141000	1 kg	P
PL0114005P	5 kg	P
PL0114025P	25 kg	P

# Leadia

## PL0115 Lead(II) acetate trihydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (complexometric) . . . . . 99,5 - 103,0 %	copper (Cu) . . . . . max. 0,001 %
insoluble in water . . . . . max. 0,01 %	iron (Fe) . . . . . max. 0,001 %
chlorides (Cl) . . . . . max. 0,0005 %	magnesium (Mg) . . . . . max. 0,005 %
nitrates and nitrites (as NO <sub>2</sub> ) . . . . . max. 0,005 %	potassium (K) . . . . . max. 0,005 %
total nitrogen (as N) . . . . . max. 0,001 %	sodium (Na) . . . . . max. 0,005 %
calcium (Ca) . . . . . max. 0,005 %	zinc (Zn) . . . . . max. 0,0005 %
cadmium (Cd) . . . . . max. 0,001 %	non precipitable with H <sub>2</sub> S (as SO <sub>4</sub> ) . . . . . max. 0,05 %

Art. No.	Volume	Container
PL01150500	500 g	
PL01151000	1 kg	
PL0115005P	5 kg	

## Lead(II) chloride

### PL0120 Lead(II) chloride, extra pure

- PbCl<sub>2</sub>
- M = 278,10 g/mol
- CAS [7758-95-4]
- EINECS-No.: 231-845-5
- Solub. in water: (20 °C): 10 g/l
- Melting point: 500 °C
- Boiling point: 950 °C
- LD 50 (oral, rat): > 1947 mg/kg
- EC-Index-No.: 082-001-00-6
- ADR: 6.1 T5 III UN 2291
- IMDG: 6.1 III UN 2291
- IATA/ICAO: 6.1 III UN 2291
- GHS-signal word: Danger
- GHS-H sentences: H360Df - H373 - H410 - H302 - H332
- GHS-P sentences: P260 - P261 - P281 - P301 + P312 - P405 - P501a
- Tariff number: 2827 39 80 90
- Applications: synthesis of organic products, pigment, in solders, laboratory reagent.

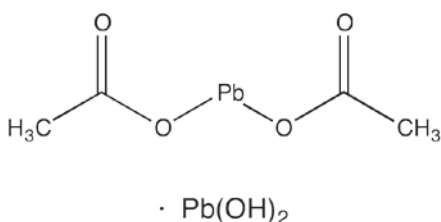
#### Specifications:

assay (complexometric) . . . . . min. 99 %
nitrites (NO <sub>2</sub> ) . . . . . max. 0,01 %
iron (Fe) . . . . . max. 0,005 %

Art. No.	Volume	Container
PL01200500	500 g	
PL01201000	1 kg	
PL0120005P	5 kg	

## Lead(II) hydroxide acetate

### PL0135 Lead(II) hydroxide acetate, reagent grade, for determination of sugar according to Horne, ACS



- Synonyms: Horne's compound, Lead(II) acetate basic, Lead subacetate
- C<sub>4</sub>H<sub>8</sub>O<sub>6</sub>Pb<sub>2</sub>
- M = 566,50 g/mol
- CAS [51404-69-4]
- EINECS-No.: 257-175-3
- Solub. in water: (20 °C): soluble
- EC-Index-No.: 082-001-00-6
- ADR: 6.1 T5 III UN 2291
- IMDG: 6.1 III UN 2291
- IATA/ICAO: 6.1 III UN 2291
- GHS-signal word: Danger
- GHS-H sentences: H360Df - H351 - H373 - H410
- GHS-P sentences: P260 - P281 - P273 - P308 + P313 - P405 - P501a
- Tariff number: 2915 29 00 90
- Applications: analytical chemistry, for determination of sugars.

#### Specifications:

assay (PbO) . . . . . min. 33,0 %
insoluble in diluted CH <sub>3</sub> COOH . . . . . max. 0,02 %
insoluble in water . . . . . max. 1,0 %
chlorides (Cl) . . . . . max. 0,003 %
nitrates and nitrites (as NO <sub>2</sub> ) . . . . . passes test
total nitrogen (as N) . . . . . max. 0,0005 %
calcium (Ca) . . . . . max. 0,01 %
copper (Cu) . . . . . max. 0,002 %
iron (Fe) . . . . . max. 0,002 %
potassium (K) . . . . . max. 0,02 %
sodium (Na) . . . . . max. 0,05 %
loss on drying (105 °C) . . . . . max. 1,0 %

Art. No.	Volume	Container
PL0135005P	5 kg	
PL0135025P	25 kg	

## Lead(II) nitrate

### PL0140 Lead(II) nitrate, reagent grade, ACS

- Pb(NO<sub>3</sub>)<sub>2</sub>
- M = 331,21 g/mol
- CAS [10099-74-8]
- EINECS-No.: 233-245-9
- Solub. in water: (20 °C): 525 g/l
- Melting point: ~ 470 °C
- EC-Index-No.: 082-001-00-6
- ADR: 5.1 OT2 II UN 1469
- IMDG: 5.1 II UN 1469
- IATA/ICAO: 5.1 II UN 1469
- GHS-signal word: Danger
- GHS-H sentences: H360Df - H373 - H410 - H302 - H332
- GHS-P sentences: P260 - P261 - P281 - P301 + P312 - P405 - P501a
- Tariff number: 2834 29 20 00
- Applications: analytical chemistry, laboratory reagent, manufacture of dyes, in explosive compositions, photography, in the textile industry.
- Appearance: White solid

insoluble matter . . . . . max. 0,005 %
chlorides (Cl) . . . . . max. 0,0005 %
calcium (Ca) . . . . . max. 0,005 %
copper (Cu) . . . . . max. 0,002 %
iron (Fe) . . . . . max. 0,0005 %
potassium (K) . . . . . max. 0,005 %
sodium (Na) . . . . . max. 0,02 %

Art. No.	Volume	Container
PL01400500	500 g	
PL01401000	1 kg	

## Lead(II) nitrate, volumetric solutions

### PL0145 Lead(II) nitrate, solution 0,05 mol/l

- Pb(NO<sub>3</sub>)<sub>2</sub>
- M = 331,21 g/mol
- CAS [10099-74-8]
- EINECS-No.: 233-245-9
- EC-Index-No.: 082-001-00-6
- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- GHS-signal word: Danger
- GHS-H sentences: H360D - H373 - H412 -
- GHS-P sentences: P260 - P281 - P273 - P308 + P313 - P405 - P501a
- Tariff number: 2834 29 20 00
- Applications: analytical chemistry, laboratory reagent.

#### Specifications:

factor . . . . . 0,999 - 1,001
uncertainty ± 0,001

1 ml = 0,01656 g Pb(NO<sub>3</sub>)<sub>2</sub> This volumetric solution was checked by means of potentiometric methods using an EDTA disodium salt standard solution, that was also checked against Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
PL01451000	1 l	

## Lead(II) oxide

- Synonyms: Litharge
- PbO
- M = 223,19 g/mol
- CAS [1317-36-8]
- EINECS-No.: 215-267-0
- Solub. in water: (20 °C): 0,017 g/l
- Melting point: 890 °C
- Boiling point: 1470 °C

- LD 50 (oral, rat): > 10000 mg/kg
- EC-Index-No.: 082-001-00-6
- ADR: 6.1 T5 III UN 2291
- IMDG: 6.1 III UN 2291
- IATA/ICAO: 6.1 III UN 2291
- GHS-signal word: Danger
- GHS-H sentences: H360Df - H373 - H410 - H302 - H332

- GHS-P sentences: P260 - P261 - P281 - P301 + P312 - P405 - P501a
- Tariff number: 2824 10 00 00
- Applications: laboratory reagent, in building materials, in the ceramics industry, painting (in porcelain industry, in the ceramics industry), pigment (in the rubber industry).

### PL0150 Lead(II) oxide, extra pure



assay (complexometric) . . . . . 99 - 100,5 %  
 insoluble in diluted CH<sub>3</sub>COOH . . . . .max. 0,2 %  
 chlorides (Cl) . . . . .max. 0,05 %  
 nitrates (NO<sub>3</sub>) . . . . .max. 0,05 %  
 iron (Fe) . . . . .max. 0,005 %  
 copper (Cu) . . . . .max. 0,005 %

silver (Ag) . . . . .max. 0,005 %  
 loss on calcination (700 °C) . . . . .max. 0,2 %

Art. No.	Volume	Container
PL01500500	500 g	
PL01501000	1 kg	
PL0150005P	5 kg	
PL0150025P	25 kg	

### PL0151 Lead(II) oxide, reagent grade



assay (complexometric) . . . . .min. 99 %  
 insoluble in diluted CH<sub>3</sub>COOH . . . . .max. 0,05 %  
 total nitrogen (as N) . . . . .max. 0,001 %  
 chlorides (Cl) . . . . .max. 0,005 %  
 bismuth (Bi) . . . . .max. 0,005 %  
 copper (Cu) . . . . .max. 0,001 %

iron (Fe) . . . . .max. 0,002 %  
 silver (Ag) . . . . .max. 0,0005 %  
 non precipitable with H<sub>2</sub>S (as SO<sub>4</sub>) . . . . .max. 0,3 %  
 loss on calcination (700 °C) . . . . .max. 0,2 %

Art. No.	Volume	Container
PL01510250	250 g	
PL01511000	1 kg	

## Lead(IV) oxide

### PL0149 Lead(IV) oxide, extra pure



- Synonyms: Lead dioxide, Lead peroxide, Lead oxide brown
- PbO<sub>2</sub>
- M = 239,20 g/mol
- CAS [1309-60-0]
- EINECS-No.: 215-174-5
- Solub. in water: (20 °C): almost insoluble
- Melting point: 290 °C (decomposes)
- EC-Index-No.: 082-001-00-6
- ADR: 5.1 OT2 III UN 1872
- IMDG: 5.1 III UN 1872
- IATA/ICAO: 5.1 III UN 1872
- GHS-signal word: Danger

- GHS-H sentences: H360Df - H373 - H410 - H302 - H332
- GHS-P sentences: P260 - P261 - P281 - P301 + P312 - P405 - P501a
- Tariff number: 2824 90 00 00
- Applications: analytical chemistry, electrolyte for batteries, oxidizing agent (manufacture of dyes), in the rubber industry, in pyrotechnics, pigment.
- Appearance: Brown-black powder

chlorides (Cl) . . . . .max. 0,003 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,003 %  
 carbon (C) . . . . .max. 0,005 %  
 total nitrogen (as N) . . . . .max. 0,005 %  
 copper (Cu) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,02 %  
 manganese (Mn) . . . . .max. 0,0002 %  
 non precipitable with H<sub>2</sub>S (as SO<sub>4</sub>) . . . . .max. 0,5 %

#### Specifications:

assay (iodometric) . . . . .min. 97 %  
 insoluble in acid . . . . .max. 0,05 %

Art. No.	Volume	Container
PL01490500	500 g	

## Lead(II) sulfate

### PL0155 Lead(II) sulfate, extra pure



- PbSO<sub>4</sub>
- M = 303,25 g/mol
- CAS [7446-14-2]
- EINECS-No.: 231-198-9
- Solub. in water: (20 °C): 0,045 g/l
- Melting point: 1170 °C
- EC-Index-No.: 082-001-00-6
- ADR: 8 C2 II UN 1794
- IMDG: 8 II UN 1794
- IATA/ICAO: 8 II UN 1794

- GHS-signal word: Danger
- GHS-H sentences: H360Df - H373 - H410 - H302 - H332
- GHS-P sentences: P260 - P261 - P281 - P301 + P312 - P405 - P501a
- Tariff number: 2833 29 70 00
- Applications: analytical chemistry, pigment, electrolyte for batteries.

#### Specifications:

assay (complexometric) . . . . .min. 98 %  
 insoluble in NH<sub>4</sub>CH<sub>3</sub>COO . . . . .max. 0,1 %  
 chlorides (Cl) . . . . .max. 0,01 %  
 iron (Fe) . . . . .max. 0,005 %

Art. No.	Volume	Container
PL01550500	500 g	
PL0155005P	5 kg	

## Lead tetraoxide

### PL0152 Lead tetraoxide, reagent grade



- Synonyms: Minium, Lead orthoplumbate, Saturn red
- Pb<sub>3</sub>O<sub>4</sub>
- M = 685,57 g/mol
- CAS [1314-41-6]
- EINECS-No.: 215-235-6
- Solub. in water: (20 °C): insoluble
- Melting point: ~ 470 °C (decomposes)
- EC-Index-No.: 082-001-00-6
- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288
- IATA/ICAO: 6.1 III UN 3288
- GHS-signal word: Danger

- GHS-H sentences: H360Df - H373 - H410 - H302 - H332
- GHS-P sentences: P260 - P261 - P281 - P301 + P312 - P405 - P501a
- Tariff number: 2824 20 00 00
- Applications: protection of iron against corrosion and rusting; in the ceramics industry, glass.

copper (Cu) . . . . .max. 0,005 %  
 iron (Fe) . . . . .max. 0,005 %  
 magnesium (Mg) . . . . .max. 0,01 %  
 manganese (Mn) . . . . .max. 0,001 %  
 potassium (K) . . . . .max. 0,01 %  
 sodium (Na) . . . . .max. 0,01 %  
 zinc (Zn) . . . . .max. 0,005 %

#### Specifications:

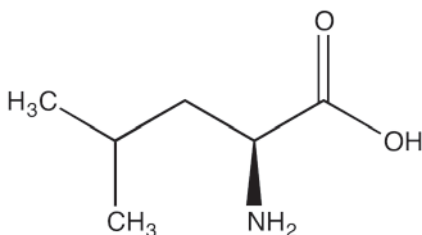
assay (as Pb<sub>3</sub>O<sub>4</sub>) . . . . .min. 97 %  
 solubility in water . . . . .max. 0,2 %  
 insoluble in HNO<sub>3</sub> . . . . .max. 0,05 %  
 calcium (Ca) . . . . .max. 0,01 %

Art. No.	Volume	Container
PL01520500	500 g	
PL01521000	1 kg	

# Leucin

## L-Leucine

### LE0055 L-Leucine, extra pure, Pharmapur®, Ph Eur, BP, USP



- Synonyms: 2-Amino-4-methylvaleric acid, α-Aminoisocaproic acid, 2-Amino-4-methylpentanoic acid
- $C_6H_{13}NO_2$
- M = 131,18 g/mol
- CAS [61-90-5]
- EINECS-No.: 200-522-0
- Solub. in water: (20 °C): 24 g/l
- Melting point: 300 °C (decomposes)
- Tariff number: 2922 49 95 90
- Applications: in biochemistry, in food industry, synthesis of organic products, in pharma industry.

#### Specifications:

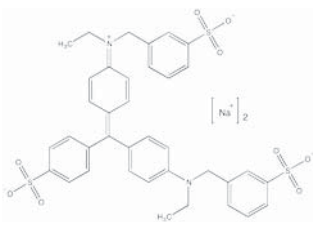
assay (titration with  $HClO_4$ , on dried sample) . . . . . 98,5 - 101 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . passes test

specific rotation ( $[\alpha]_{20}^D$ , c = 4, HCl 6 mol/l) . . . . . + 14,5° - + 17,3°  
 pH (1 %,  $H_2O$ ) . . . . . 5,5 - 7,0  
 chlorides (Cl) . . . . . max. 0,05 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,03 %  
 heavy metals (as Pb) . . . . . max. 0,0015 %  
 iron (Fe) . . . . . max. 0,003 %  
 ninhydrin-positive substances . . . . . max. 1 %  
 related substances . . . . . max. 2 %  
 residue on ignition (as  $SO_4$ ) . . . . . max. 0,4 %  
 loss on drying (105 °C) . . . . . max. 0,2 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
LE00550025	25 g	⊖
LE00550100	100 g	⊖

## Light green SF yellowish, C.I. 42095

### VE0160 Light green SF yellowish, C.I. 42095, for microscopy



- Synonyms: Acid green 5
- $C_{37}H_{34}N_4Na_2O_9S_3$
- M = 792,86 g/mol
- CAS [5141-20-8]
- EINECS-No.: 225-906-5
- Solub. in water: (25 °C): 200 g/l
- Melting point: 288 °C
- LD 50 (oral, rat): > 2000 mg/kg
- Tariff number: 3204 19 00 90

- Applications: manufacture of dyes, for biology, microscopy.

#### Specifications:

suitability for microscopy . . . . . passes test

Art. No.	Volume	Container
VE01600025	25 g	⊖
VE01600100	100 g	⊖

## Lithium carbonate

- $Li_2CO_3$
- M = 73,89 g/mol
- CAS [554-13-2]
- EINECS-No.: 209-062-5
- Solub. in water: (20 °C): 13 g/l
- Melting point: 720 °C

- LD 50 (oral, rat): 525 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302 - H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P301 + P312 - P337 + P313 - P501a
- Tariff number: 2836 91 00 90

- Applications: analytical chemistry, in the production of enamels (in porcelain industry, in the electronic industry), for pharmaceuticals synthesizing.

### LI0098 Lithium carbonate, extra pure, Pharmapur®, Ph Eur, BP, USP

assay (acidimetric) . . . . . 98,5 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 insoluble in diluted HCl . . . . . max. 0,02 %  
 chlorides (Cl) . . . . . max. 0,07 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,02 %  
 aluminium and iron . . . . . passes test

arsenic (As) . . . . . max. 0,0002 %  
 calcium (Ca) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 magnesium (Mg) . . . . . max. 0,015 %  
 potassium (K) . . . . . max. 0,03 %  
 sodium (Na) . . . . . max. 0,03 %  
 loss on drying (200°C, 4 h) . . . . . max. 1 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
LI00980500	500 g	⊖
LI00981000	1 kg	⊖

### LI0100 Lithium carbonate, reagent grade, ACS, Reag. Ph Eur

assay (acidimetric) . . . . . min. 99,0 %  
 insoluble in diluted HCl . . . . . max. 0,01 %  
 chlorides (Cl) . . . . . max. 0,002 %  
 nitrates ( $NO_3$ ) . . . . . max. 0,0005 %  
 calcium (Ca) . . . . . max. 0,005 %  
 heavy metals (as Pb) . . . . . max. 0,001 %

iron (Fe) . . . . . max. 0,001 %  
 magnesium (Mg) . . . . . max. 0,001 %  
 potassium (K) . . . . . max. 0,005 %  
 sodium (Na) . . . . . max. 0,005 %  
 sulphur compounds (as  $SO_4$ ) . . . . . max. 0,2 %

Art. No.	Volume	Container
LI01000250	250 g	⊖
LI01000500	500 g	⊖

## Lithium chloride

- LiCl
- M = 42,39 g/mol
- CAS [7447-41-8]
- EINECS-No.: 231-212-3
- Solub. in water: (20 °C): 832 g/l
- Melting point: 614 °C

- Boiling point: 1360 °C
- Vapour pressure: (547 °C) 1,33 hPa
- LD 50 (oral, rat): 526 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302 - H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2827 39 80 90
- Applications: analytical chemistry, in explosive compositions, in solders, for pharmaceuticals synthesizing, laboratory reagent.

### LI0110 Lithium chloride, extra pure

assay (argentometric) . . . . . min. 98 %  
 insoluble in water . . . . . max. 0,05 %  
 pH (5 %,  $H_2O$ ) . . . . . 6 - 9  
 nitrogen compounds (as N) . . . . . max. 0,005 %  
 phosphates (as  $PO_4$ ) . . . . . max. 0,003 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,05 %  
 calcium (Ca) . . . . . max. 0,01 %

copper (Cu) . . . . . max. 0,002 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,002 %  
 lead (Pb) . . . . . max. 0,002 %  
 nickel (Ni) . . . . . max. 0,002 %  
 potassium (K) . . . . . max. 0,01 %  
 sodium (Na) . . . . . max. 0,02 %

Art. No.	Volume	Container
LI01100100	100 g	⊖
LI01100250	250 g	⊖
LI01100500	500 g	⊖
LI0110025P	25 kg	⊖

**LI0112 Lithium chloride, molecular biology grade**

assay (argentometric) . . . . .min. 99 %	magnesium (Mg) . . . . .max. 0,005 %
pH (5 %, H <sub>2</sub> O) . . . . .5,0 - 7,0	DNases, RNases, Proteases . . . . . non detected
heavy metals (as Pb) . . . . .max. 0,0005 %	
iron (Fe) . . . . .max. 0,0005 %	

Art. No.	Volume	Container
LI01120250	250 g	
LI0112005P	x 5 kg	

**Lithium hydroxide monohydrate**

- LiOH·H<sub>2</sub>O
- M = 41,96 g/mol
- CAS [1310-66-3]
- EINECS-No.: 215-183-4
- Solub. in water: (20 °C): 124 g/l
- Melting point: 462 °C
- Boiling point: 924 °C (decomposes)
- ADR: 8 C6 II UN 2680
- IMDG: 8 II UN 2680
- IATA/ICAO: 8 II UN 2680
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2825 20 00 00
- Applications: analytical chemistry, laboratory reagent, for determination of: aminoacids.

**LI0140 Lithium hydroxide monohydrate, synthesis grade**

assay (acidimetric, LiOH) . . . . .min. 56 %
heavy metals (as Pb) . . . . .max. 0,002 %
iron (Fe) . . . . .max. 0,002 %

Art. No.	Volume	Container
LI01400500	500 g	
LI01401000	1 kg	

**LI0141 Lithium hydroxide monohydrate, reagent grade, ACS**

assay (acidimetric) . . . . .min. 99 %	calcium (Ca) . . . . .max. 0,005 %	nickel (Ni) . . . . .max. 0,001 %
assay of Li <sub>2</sub> CO <sub>3</sub> . . . . .max. 1 %	copper (Cu) . . . . .max. 0,001 %	potassium (K) . . . . .max. 0,05 %
insoluble in water . . . . .max. 0,01 %	heavy metals (as Pb) . . . . .max. 0,002 %	sodium (Na) . . . . .max. 0,05 %
chlorides (Cl) . . . . .max. 0,01 %	iron (Fe) . . . . .max. 0,001 %	
sulfates (SO <sub>4</sub> ) . . . . .max. 0,05 %	lead (Pb) . . . . .max. 0,001 %	
nitrates (NO <sub>3</sub> ) . . . . .max. 0,001 %	magnesium (Mg) . . . . .max. 0,005 %	

Art. No.	Volume	Container
LI01410250	250 g	

**Lithium metaborate****LI0090 Lithium metaborate, reagent grade**

- LiBO<sub>2</sub>
- M = 49,75 g/mol
- CAS [13453-69-5]
- EINECS-No.: 236-631-5
- Solub. in water: (20 °C): almost insoluble
- Melting point: ~ 840 °C
- Tariff number: 2840 20 90 00
- Applications: analytical chemistry, laboratory reagent, for spectroscopy.
- phosphates (as PO<sub>4</sub>) . . . . .max. 0,005 %
- silicates (SiO<sub>2</sub>) . . . . .max. 0,05 %
- sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %
- aluminium (Al) . . . . .max. 0,002 %
- arsenic (As) . . . . .max. 0,0002 %
- barium (Ba) . . . . .max. 0,002 %
- cadmium (Cd) . . . . .max. 0,0005 %
- calcium (Ca) . . . . .max. 0,005 %
- chromium (Cr) . . . . .max. 0,0005 %
- cobalt (Co) . . . . .max. 0,0002 %
- copper (Cu) . . . . .max. 0,0005 %
- iron (Fe) . . . . .max. 0,001 %
- lead (Pb) . . . . .max. 0,0002 %
- magnesium (Mg) . . . . .max. 0,01 %
- manganese (Mn) . . . . .max. 0,0005 %
- nickel (Ni) . . . . .max. 0,0005 %
- potassium (K) . . . . .max. 0,005 %
- sodium (Na) . . . . .max. 0,01 %
- strontium (Sr) . . . . .max. 0,001 %
- zinc (Zn) . . . . .max. 0,0005 %
- residue on ignition . . . . .max. 1 %

Art. No.	Volume	Container
LI00900100	100 g	
LI00900500	500 g	

**Specifications:**

assay (acidimetric) . . . . .min. 99 %
chlorides (Cl) . . . . .max. 0,005 %
fluorides (F) . . . . .max. 0,005 %

**Lithium nitrate****LI0175 Lithium nitrate, extra pure**

- Synonyms: Nitric acid lithium salt
- LiNO<sub>3</sub>
- M = 68,95 g/mol
- CAS [7790-69-4]
- EINECS-No.: 232-218-9
- Solub. in water: (20 °C): 522 g/l
- Melting point: 255 °C
- ADR: 5.1 O2 III UN 2722
- IMDG: 5.1 III UN 2722
- IATA/ICAO: 5.1 III UN 2722
- GHS-signal word: Warning
- GHS-H sentences: H272
- GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a
- Tariff number: 2834 29 80 00
- Applications: laboratory reagent, corrosion inhibitor.
- Appearance: White crystalline powder
- assay (argentometric) . . . . .min. 98 %
- insoluble in water . . . . .max. 0,05 %
- carbonates (CO<sub>3</sub>) . . . . .max. 0,005 %
- chlorides (Cl) . . . . .max. 0,005 %
- phosphates (as PO<sub>4</sub>) . . . . .max. 0,005 %
- sulfates (SO<sub>4</sub>) . . . . .max. 0,05 %
- ammonium (NH<sub>4</sub>) . . . . .max. 0,005 %
- calcium (Ca) . . . . .max. 0,005 %
- copper (Cu) . . . . .max. 0,005 %

iron (Fe) . . . . .max. 0,005 %
lead (Pb) . . . . .max. 0,005 %
nickel (Ni) . . . . .max. 0,005 %
potassium (K) . . . . .max. 0,02 %
sodium (Na) . . . . .max. 0,005 %

Art. No.	Volume	Container
LI01750250	250 g	
LI01750500	500 g	
LI0175005P	5 kg	

**Lithium sulfate monohydrate****LI0180 Lithium sulfate monohydrate, reagent grade, ACS**

- Li<sub>2</sub>SO<sub>4</sub>·H<sub>2</sub>O
- M = 127,96 g/mol
- CAS [10102-25-7]
- EINECS-No.: 233-820-4
- Solub. in water: (20 °C): 340 g/l
- Melting point: 120 °C
- Tariff number: 2833 29 90 00
- Applications: laboratory reagent, manufacture of glass, in building materials.
- assay (acidimetric, on dried sample) . . . . .min. 99 %
- insoluble in water . . . . .max. 0,01 %
- chlorides (Cl) . . . . .max. 0,002 %
- nitrates (NO<sub>3</sub>) . . . . .max. 0,001 %
- calcium (Ca) . . . . .max. 0,005 %
- heavy metals (as Pb) . . . . .max. 0,0005 %
- iron (Fe) . . . . .max. 0,0005 %

potassium (K) . . . . .max. 0,05 %
sodium (Na) . . . . .max. 0,005 %
loss on drying (150 °C) . . . . .13 - 15 %

Art. No.	Volume	Container
LI01800250	250 g	
LI01800500	500 g	

# Litmus

## Litmus, soluble

### T00280 Litmus, soluble, synthesis grade

- Synonyms: Lacmus, Tournesol, Lacca musica
- M = ~ 3300 g/mol
- CAS [1393-92-6]
- EINECS-No.: 215-739-6
- Solub. in water: (20 °C): soluble

- Tariff number: 3203 00 19 00
- Applications: indicator

#### Specifications:

pH range (red to blue) . . . . . 4,5 - 8,3

Art. No.	Volume	Container
T002800025	25 g	Ø
T002800250	250 g	Ø

## Lugol's solution

### LU0010 Lugol's solution, for microscopy

- Synonyms: Iodine-potassium iodide solution
- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: 100 °C
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent, for microbiology, bacterium staining.

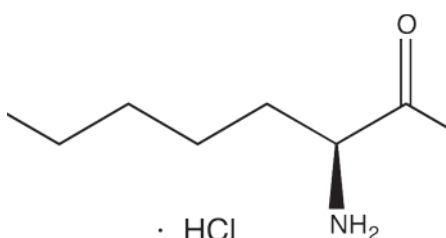
#### Specifications:

suitability for microscopy . . . . . passes test

Art. No.	Volume	Container
LU0010G100	100 ml	Ø
LU00100500	500 ml	Ø
LU00101000	1000 ml	Ø
LU00102500	2,5 l	Ø

## L-Lysine monohydrochloride

### LI0035 L-Lysine monohydrochloride, synthesis grade



- Synonyms: L-(+)-2,6-Diamino-N-caproic acid monohydrochloride
- C<sub>6</sub>H<sub>14</sub>N<sub>2</sub>O<sub>2</sub>·HCl
- M = 182,65 g/mol
- CAS [657-27-2]
- EINECS-No.: 211-519-9
- Solub. in water: (20 °C): 420 g/l
- Melting point: 263 - 264 °C
- LD 50 (oral, rat): 10000 mg/kg
- Tariff number: 2922 41 00 00
- Applications: in biochemistry, in food industry, synthesis of organic products.

#### Specifications:

assay (titration with HClO<sub>4</sub>) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 specific rotation ([α]<sub>20</sub><sup>o</sup>/D, c = 8, HCl 6 mol/l) . . . . . + 20,5 ° - + 21,5 °  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 other ninhydrin positive substances (as glycine) . . . . . max. 0,1 %

Art. No.	Volume	Container
LI00351000	1 kg	Ø
LI0035005P	5 kg	Ø



## Magnesium

## MA0020 Magnesium, powder, synthesis grade



- Mg
- M = 24,31 g/mol
- CAS [7439-95-4]
- EINECS-No.: 231-104-6
- Solub. in water: (20 °C): insoluble
- Melting point: 651 °C
- Boiling point: 1107 °C
- Flash pt. 500 °C
- EC-Index-No.: 012-001-00-3
- ADR: 4.3 WS II UN 1418

- IMDG: 4.3 II UN 1418
- IATA/ICAO: 4.3 II UN 1418
- GHS-signal word: Danger
- GHS-H sentences: H250 - H260
- GHS-P sentences: P210 - P222 - P231 + P232 - P280 - P422a - P501a
- Tariff number: 8104 30 00 00
- Applications: in explosive compositions, photography, alloys, for organometallic compounds synthesizing, metal alloys.

## Specifications:

assay (complexometric) . . . . .min. 99 %  
 insoluble in HCl . . . . .max. 0,05 %  
 iron (Fe) . . . . .max. 0,05 %

Art. No.	Volume	Container
MA00200025	25 g	0
MA00200250	250 g	0

## MA0025 Magnesium, turnings, synthesis grade, according to Grignard



- Mg
- M = 24,31 g/mol
- CAS [7439-95-4]
- EINECS-No.: 231-104-6
- Solub. in water: (20 °C): insoluble
- Melting point: 651 °C
- Boiling point: 1107 °C
- Flash pt. 500 °C
- EC-Index-No.: 012-002-00-9
- ADR: 4.1 F3 III UN 1869

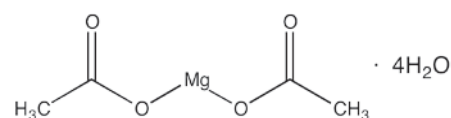
- IMDG: 4.1 III UN 1869
- IATA/ICAO: 4.1 III UN 1869
- GHS-signal word: Danger
- GHS-H sentences: H228 - H261 - H252
- GHS-P sentences: P210 - P231 + P232 - P241 - P280 - P235 + P410 - P501a
- Tariff number: 8104 90 00 90
- Appearance: Silvery solid

## Specifications:

assay (complexometric) . . . . .min. 99,5 %  
 insoluble in HCl . . . . .max. 0,01 %  
 iron (Fe) . . . . .max. 0,05 %

Art. No.	Volume	Container
MA00250100	100 g	0
MA00250250	250 g	0
MA00251000	1 kg	0

## Magnesium acetate tetrahydrate



- Synonyms: Acetic acid magnesium salt tetrahydrate
- $\text{Mg}(\text{CH}_3\text{COO})_2 \cdot 4\text{H}_2\text{O}$
- M = 214,46 g/mol
- CAS [16674-78-5]
- EINECS-No.: 205-554-9
- Solub. in water: (20 °C): soluble
- Melting point: 80 °C
- Tariff number: 2915 29 00 90
- Applications: analytical chemistry, in food industry.

## MA0027 Magnesium acetate tetrahydrate, extra pure, Pharmpur®, Ph Eur, BP

assay (complexometric, on dried sample) . . . . .98 - 101 %  
 identification . . . . .passes test  
 pH (5 %  $\text{H}_2\text{O}$ ) . . . . .7,5 - 8,5  
 chlorides (Cl) . . . . .max. 0,033 %  
 nitrates ( $\text{NO}_3$ ) . . . . .max. 0,0003 %  
 sulfates ( $\text{SO}_4$ ) . . . . .max. 0,06 %  
 aluminium (Al) . . . . .max. 0,0001 %

calcium (Ca) . . . . .max. 0,01 %  
 heavy metals (as Pb) . . . . .max. 0,004 %  
 potassium (K) . . . . .max. 0,1 %  
 sodium (Na) . . . . .max. 0,5 %  
 readily oxidisable substances . . . . .passes test  
 water (K.F.) . . . . .33 - 35 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
MA00270500	500 g	0
MA00271000	1 kg	0
MA0027005P	5 kg	0
MA0027025P	25 kg	0

## MA0028 Magnesium acetate tetrahydrate, reagent grade, ACS

assay (complexometric) . . . . .99,5 - 102 %  
 insoluble in water . . . . .max. 0,005 %  
 chlorides (Cl) . . . . .max. 0,001 %  
 sulfates ( $\text{SO}_4$ ) . . . . .max. 0,001 %  
 total nitrogen (as N) . . . . .max. 0,001 %  
 barium (Ba) . . . . .max. 0,001 %  
 calcium (Ca) . . . . .max. 0,001 %

copper (Cu) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0001 %  
 manganese (Mn) . . . . .max. 0,001 %  
 potassium (K) . . . . .max. 0,005 %  
 sodium (Na) . . . . .max. 0,001 %  
 strontium (Sr) . . . . .max. 0,005 %

zinc (Zn) . . . . .max. 0,0002 %

Art. No.	Volume	Container
MA00280500	500 g	0
MA00281000	1 kg	0

## Magnesium chloride hexahydrate

- $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$
- M = 203,30 g/mol
- CAS [7791-18-6]
- EINECS-No.: 232-094-6

- Solub. in water: (20 °C): 1670 g/l
- Melting point: ~ 117 °C (decomposes)
- LD 50 (oral, rat): 8100 mg/kg
- Tariff number: 2827 31 00 00

- Applications: analytical chemistry, laboratory reagent, disinfectant. Extinguishant.

## MA0035 Magnesium chloride hexahydrate, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (complexometric) . . . . .98 - 101 %  
 identification . . . . .passes test  
 appearance of solution (10 %  $\text{H}_2\text{O}$ ) . . . . .clear and colourless  
 pH . . . . .4,5 - 7  
 insoluble matter . . . . .max. 0,005 %  
 acidity or alkalinity . . . . .passes test  
 bromides (Br) . . . . .max. 0,05 %  
 chlorides (Cl) . . . . .max. 0,005 %  
 sulfates ( $\text{SO}_4$ ) . . . . .max. 0,005 %  
 aluminium (Al) . . . . .max. 0,0001 %

arsenic (As) . . . . .max. 0,0002 %  
 barium (Ba) . . . . .passes test  
 calcium (Ca) . . . . .max. 0,1 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %  
 potassium (K) . . . . .max. 0,05 %  
 water . . . . .51 - 55 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
MA00350250	250 g	0
MA00350500	500 g	0
MA00351000	1 kg	0
MA0035005P	5 kg	0
MA0035025P	25 kg	0

# Magnes

## MA0036 Magnesium chloride hexahydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (complexometric) . . . . . 99,0 - 101,0 %	aluminium (Al) . . . . . max. 0,0002 %	sodium (Na) . . . . . max. 0,001 %
identity . . . . . passes test	ammonium (NH <sub>4</sub> ) . . . . . max. 0,002 %	strontium (Sr) . . . . . max. 0,005 %
appearance of solution . . . . . passes test	arsenic (As) . . . . . max. 0,0002 %	zinc (Zn) . . . . . max. 0,001 %
insoluble in water . . . . . max. 0,005 %	barium (Ba) . . . . . max. 0,002 %	
pH (5 %, H <sub>2</sub> O) . . . . . 5,0 - 6,5	calcium (Ca) . . . . . max. 0,003 %	
total nitrogen (as N) . . . . . max. 0,0002 %	copper (Cu) . . . . . max. 0,0005 %	
acidity or alkalinity . . . . . passes test	heavy metals (as Pb) . . . . . max. 0,0005 %	
bromides (Br) . . . . . max. 0,05 %	iron (Fe) . . . . . max. 0,0005 %	
nitrate (NO <sub>3</sub> ) . . . . . max. 0,001 %	lead (Pb) . . . . . max. 0,0005 %	
phosphates (as PO <sub>4</sub> ) . . . . . max. 0,0005 %	manganese (Mn) . . . . . max. 0,0005 %	
sulfates (SO <sub>4</sub> ) . . . . . max. 0,002 %	potassium (K) . . . . . max. 0,001 %	

Art. No.	Volume	Container
MA00360250	250 g	P
MA00360500	500 g	P
MA00361000	1 kg	P
MA0036005P	5 kg	P

## MA0037 Magnesium chloride hexahydrate, molecular biology grade

assay (complexometric) . . . . . min. 99 %	DNases, RNases, Proteases . . . . . non detected
pH (5 %, H <sub>2</sub> O) . . . . . 5,0 - 6,5	
heavy metals (as Pb) . . . . . max. 0,0005 %	
iron (Fe) . . . . . max. 0,0005 %	

Art. No.	Volume	Container
MA00370100	100 g	P
MA00370500	500 g	P

## Magnesium chloride, volumetric solutions

### MA0038 Magnesium chloride, solution 0,1 mol/l (0,2 N)

<ul style="list-style-type: none"> <li>MgCl<sub>2</sub>·6H<sub>2</sub>O</li> <li>M = 203,30 g/mol</li> <li>CAS [7786-30-3]</li> <li>EINECS-No.: 232-094-6</li> <li>Density: ~ 1,01 g/cm<sup>3</sup></li> <li>Tariff number: 2827 31 00 00</li> <li>Applications: analytical chemistry, titrant in volumetric analysis.</li> </ul>	uncertainty ± 0,001 1 ml = 0,009521 g MgCl <sub>2</sub> . This volumetric solution was checked by means of potentiometric methods using an EDTA disodium salt standard solution, that was also checked against Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).
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Art. No.	Volume	Container
MA00381000	1 l	P

#### Specifications:

factor . . . . . 0,999 - 1,001

## Magnesium hydrogen phosphate trihydrate

### MA0045 Magnesium hydrogen phosphate trihydrate, extra pure

<ul style="list-style-type: none"> <li>Synonyms: Magnesium phosphate dibasic</li> <li>MgHPO<sub>4</sub>·3H<sub>2</sub>O</li> <li>M = 174,33 g/mol</li> <li>CAS [7782-75-4]</li> <li>EINECS-No.: 231-823-5</li> <li>Solub. in water: (20 °C): 0,25 g/l</li> <li>Tariff number: 2835 29 90 00</li> <li>Applications: in food industry (E 343).</li> </ul>	<b>Specifications:</b> assay (complexometric) . . . . . 98 - 102 % insoluble in HCl . . . . . max. 0,05 % chlorides (Cl) . . . . . max. 0,01 % sulfates (SO <sub>4</sub> ) . . . . . max. 0,03 % arsenic (As) . . . . . max. 0,0001 % barium (Ba) . . . . . passes test copper (Cu) . . . . . max. 0,005 % heavy metals (as Pb) . . . . . max. 0,002 % iron (Fe) . . . . . max. 0,005 %	lead (Pb) . . . . . max. 0,005 % nickel (Ni) . . . . . max. 0,005 % magnesium dihydrogenphosphate, magnesium phosphate . . . . . passes test
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Art. No.	Volume	Container
MA00450500	500 g	P
MA0045005P	5 kg	P
MA0045025P	25 kg	P

## Magnesium hydroxide carbonate pentahydrate

### MA0055 Magnesium hydroxide carbonate pentahydrate, synthesis grade

<ul style="list-style-type: none"> <li>Synonyms: Magnesium carbonate basic</li> <li>~ 4MgCO<sub>3</sub>·Mg(OH)<sub>2</sub>·5H<sub>2</sub>O</li> <li>M = ~ 485 g/mol</li> <li>CAS [12125-28-9]</li> <li>EINECS-No.: 235-192-7</li> <li>Solub. in water: (20 °C): insoluble</li> <li>Melting point: 700 °C</li> </ul>	<ul style="list-style-type: none"> <li>Tariff number: 2836 99 11 00</li> <li>Applications: analytical chemistry, in buffer solutions, in food industry, thickener, cosmetics.</li> </ul>	chlorides (Cl) . . . . . max. 0,1 % sulphur compounds (as SO <sub>2</sub> ) . . . . . max. 0,2 %
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Art. No.	Volume	Container
MA00551000	1 kg	P
MA0055005P	5 kg	P

## Magnesium nitrate hexahydrate

<ul style="list-style-type: none"> <li>Mg(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O</li> <li>M = 256,41 g/mol</li> <li>CAS [13446-18-9]</li> <li>EINECS-No.: 233-826-7</li> <li>Solub. in water: (20 °C): 1250 g/l</li> <li>Melting point: ~ 89 - 95 °C (decomposes)</li> </ul>	<ul style="list-style-type: none"> <li>LD 50 (oral, rat): 5440 mg/kg</li> <li>ADR: 5.1 O2 III UN 1474</li> <li>IMDG: 5.1 III UN 1474</li> <li>IATA/ICAO: 5.1 III UN 1474</li> <li>GHS-signal word: Danger</li> <li>GHS-H sentences: H272</li> </ul>	<ul style="list-style-type: none"> <li>GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a</li> <li>Tariff number: 2834 29 80 00</li> <li>Applications: analytical chemistry, laboratory reagent, oxidizing agent.</li> <li>Appearance: White crystals</li> </ul>
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## MA0048 Magnesium nitrate hexahydrate, extra pure, Reag. Ph Eur

assay (complexometric) . . . . . min. 98 % insoluble in water . . . . . max. 0,025 % pH (5 %, H <sub>2</sub> O) . . . . . 4,0 - 8,5 acidity (as HNO <sub>3</sub> ) . . . . . max. 0,01 % alkalinity (as MgO) . . . . . max. 0,005 % chlorides (Cl) . . . . . max. 0,01 % sulfates (SO <sub>4</sub> ) . . . . . max. 0,01 % ammonium (NH <sub>4</sub> ) . . . . . max. 0,01 %	arsenic (As) . . . . . max. 0,0001 % calcium (Ca) . . . . . max. 0,05 % copper (Cu) . . . . . max. 0,002 % iron (Fe) . . . . . max. 0,0005 % lead (Pb) . . . . . max. 0,002 % nickel (Ni) . . . . . max. 0,002 % potassium (K) . . . . . max. 0,001 % sodium (Na) . . . . . max. 0,001 %
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Art. No.	Volume	Container
MA00480500	500 g	P
MA00481000	1 kg	P
MA0048005P	5 kg	P

**MA0050 Magnesium nitrate hexahydrate, reagent grade, ACS**

assay (complexometric) . . . . .	99 - 102 %	barium (Ba) . . . . .	max. 0,005 %
insoluble in water . . . . .	max. 0,005 %	calcium (Ca) . . . . .	max. 0,005 %
pH (5 %, H <sub>2</sub> O) . . . . .	5 - 8,2	heavy metals (as Pb) . . . . .	max. 0,0005 %
chlorides (Cl) . . . . .	max. 0,001 %	iron (Fe) . . . . .	max. 0,0005 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,0005 %	manganese (Mn) . . . . .	max. 0,0005 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,002 %	potassium (K) . . . . .	max. 0,0005 %
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,001 %	sodium (Na) . . . . .	max. 0,0005 %
arsenic (As) . . . . .	max. 0,0001 %	strontium (Sr) . . . . .	max. 0,005 %

Art. No.	Volume	Container
MA00500500	500 g	
MA00501000	1 kg	
MA0050005P	5 kg	

**Magnesium oxide**

- Synonyms: Magnesia usta
- MgO
- M = 40,30 g/mol
- CAS [1309-48-4]

- EINECS-No.: 215-171-9
- Solub. in water: (20 °C): insoluble
- Melting point: ~ 2800 °C
- Boiling point: 3600 °C

- Tariff number: 2519 90 10 00
- Applications: in the ceramics industry, in optics, in building materials, in pharma industry.

**MA0060 Magnesium oxide, extra pure, Pharmpur®, Ph Eur, BP, USP**

assay (complexometric, on ignited substance) . . . . .	96 - 100,5 %	calcium (Ca) . . . . .	max. 1,5 %
appearance of solution . . . . .	passes test	heavy metals (as Pb) . . . . .	max. 0,003 %
insoluble in CH <sub>3</sub> COOH . . . . .	max. 0,1 %	iron (Fe) . . . . .	max. 0,1 %
free alkali and soluble salts . . . . .	max. 2 %	bulk density . . . . .	passes test
chlorides (Cl) . . . . .	max. 0,15 %	residue on ignition (900 °C) . . . . .	max. 10 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 1 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	
arsenic (As) . . . . .	max. 0,0004 %		

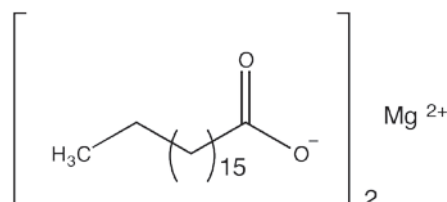
Art. No.	Volume	Container
MA00600250	250 g	
MA00600500	500 g	
MA00601000	1 kg	
MA0060005P	5 kg	

**MA0061 Magnesium oxide, light, powder, Pharmpur®, Ph Eur, GMP, suitable for use as excipient**

assay (on ignited sample) . . . . .	98 - 100,5 %	calcium (Ca) . . . . .	max. 1,5 %
identification . . . . .	passes test	heavy metals (as Pb) . . . . .	max. 0,003 %
appearance of solution . . . . .	passes test	iron (Fe) . . . . .	max. 0,1 %
solubility in water . . . . .	max. 2 %	residue on ignition (900 °C) . . . . .	max. 8 %
insoluble in CH <sub>3</sub> COOH . . . . .	max. 0,1 %	residual solvents (ICH) . . . . .	excluded by
chlorides (Cl) . . . . .	max. 0,15 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	
sulfates (SO <sub>4</sub> ) . . . . .	max. 1 %		
arsenic (As) . . . . .	max. 0,0004 %		

Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
MA00611000	1 kg	
MA0061025P	25 kg	

**Magnesium stearate****MA0040 Magnesium stearate, extra pure, Pharmpur®, Ph Eur, BP, NF**

- Synonyms: Stearic acid magnesium salt
- C<sub>36</sub>H<sub>70</sub>MgO<sub>4</sub>
- M = 591,27 g/mol
- CAS [557-04-0]
- EINECS-No.: 209-150-3
- Solub. in water: (20 °C): insoluble
- Tariff number: 2915 70 30 00
- Applications: in the pharmaceuticals industry, desiccant (painting), emulsifier, in pharma industry.

**Specifications:**

assay of Mg (referred to dried sample) . . . . .	4,0 - 5,0 %
identification . . . . .	passes test
acidity or alkalinity . . . . .	passes test

chlorides (Cl) . . . . .	max. 0,1 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 1 %
total content (palmitic + stearic) . . . . .	max. 90 % of the total (peak areas of all the fatty acids)
cadmium (Cd) . . . . .	max. 0,0003 %
lead (Pb) . . . . .	max. 0,001 %
magnesium (Mg) . . . . .	passes test
nickel (Ni) . . . . .	max. 0,0005 %
loss on drying (105 °C) . . . . .	max. 6 %
Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
MA00401000	1 kg	

**Magnesium sulfate anhydrous**

- MgSO<sub>4</sub>
- M = 120,37 g/mol
- CAS [7487-88-9]
- EINECS-No.: 231-298-2

- Solub. in water: (20 °C): 269 g/l
- Melting point: 1124 °C
- Tariff number: 2833 21 00 00

- Applications: analytical chemistry, manufacture of dyes, in fertilizer compositions, in explosive compositions, cosmetics, desiccant.

**MA0080 Magnesium sulfate anhydrous, extra pure**

assay (complexometric) . . . . .	min. 98 %	manganese (Mn) . . . . .	max. 0,1 %
calcium sulfate (CaSO <sub>4</sub> ) . . . . .	max. 0,5 %	loss on ignition (600 °C) . . . . .	max. 1 %
potassium chloride (KCl) . . . . .	max. 0,1 %		
potassium sulfate (K <sub>2</sub> SO <sub>4</sub> ) . . . . .	max. 0,6 %		
sodium chloride (NaCl) . . . . .	max. 0,1 %		
iron (Fe) . . . . .	max. 0,01 %		

Art. No.	Volume	Container
MA00800500	500 g	
MA00801000	1 kg	
MA0080005P	5 kg	
MA0080025P	25 kg	

**MA0081 Magnesium sulfate anhydrous, suitable for QuEChERS**

assay (complexometric) . . . . .	min. 98 %	sodium chloride (NaCl) . . . . .	max. 0,1 %
calcium sulfate (CaSO <sub>4</sub> ) . . . . .	max. 0,5 %	iron (Fe) . . . . .	max. 0,01 %
potassium chloride (KCl) . . . . .	max. 0,1 %	manganese (Mn) . . . . .	max. 0,1 %
potassium sulfate (K <sub>2</sub> SO <sub>4</sub> ) . . . . .	max. 0,6 %	loss on ignition (600 °C) . . . . .	max. 1 %

Art. No.	Volume	Container
MA0081025P	25 kg	

# Magnes

## Magnesium sulfate heptahydrate

- Synonyms: Bitter salt, Epsom salt, Sulfuric acid magnesium salt heptahydrate
- $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$
- $M = 246,48 \text{ g/mol}$

- CAS [10034-99-8]
- EINECS-No.: 231-298-2
- Solub. in water: (20 °C): 710 g/l
- Tariff number: 2833 21 00 00

- Applications: analytical chemistry, manufacture of dyes, in fertilizer compositions, in explosive compositions, cosmetics.

### MA0084 Magnesium sulfate heptahydrate, extra pure, Ph Eur, BP, USP

assay (complexometric, on dried sample) . . . 99,0 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 5 - 9,2  
 acidity or alkalinity . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,03 %  
 arsenic (As) . . . . . max. 0,0002 %  
 heavy metals (as Pb) . . . . . max. 0,001 %

iron (Fe) . . . . . max. 0,002 %  
 selenium (Se) . . . . . max. 0,003 %  
 loss on ignition (400°C) . . . . . 48 - 52 %  
 loss on drying . . . . . 40 - 52 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
MA00840500	500 g	Ⓒ
MA00841000	1 kg	Ⓒ
MA0084005P	5 kg	Ⓕ
MA0084025P	25 kg	Ⓕ

### MA0085 Magnesium sulfate heptahydrate, reagent grade, ACS, Reag. Ph Eur

assay (complexometric, on dried sample) . . . 99 - 102 %  
 identity . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . max. 0,005 %  
 pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 5,0 - 8,2  
 acidity or alkalinity . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,0003 %  
 nitrates ( $\text{NO}_3$ ) . . . . . max. 0,002 %  
 total nitrogen (as N) . . . . . max. 0,002 %  
 ammonium ( $\text{NH}_4$ ) . . . . . max. 0,002 %

arsenic (As) . . . . . max. 0,0002 %  
 calcium (Ca) . . . . . max. 0,005 %  
 copper (Cu) . . . . . max. 0,0001 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0001 %  
 lead (Pb) . . . . . max. 0,0001 %  
 manganese (Mn) . . . . . max. 0,0005 %  
 potassium (K) . . . . . max. 0,001 %  
 sodium (Na) . . . . . max. 0,001 %  
 strontium (Sr) . . . . . max. 0,005 %

loss on ignition (400°C) . . . . . 48 - 52 %

Art. No.	Volume	Container
MA00850250	250 g	Ⓒ
MA00850500	500 g	Ⓒ
MA00851000	1 kg	Ⓒ
MA0085005P	5 kg	Ⓕ
MA0085025P	25 kg	Ⓕ

### MA0086 Magnesium sulfate heptahydrate, molecular biology grade

assay (complexometric) . . . . . min. 99,5 %  
 pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 5 - 8  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0001 %

DNases, RNases, Proteases . . . . . passes test

Art. No.	Volume	Container
MA00860100	100 g	Ⓒ
MA00860500	500 g	Ⓒ

## Magnesium sulfate, volumetric solutions

### MA0087 Magnesium sulfate, solution 0,01 mol/l

- $\text{MgSO}_4$
- $M = 120,37 \text{ g/mol}$
- CAS [7487-88-9]
- EINECS-No.: 231-298-2
- Density: ~ 1 g/cm<sup>3</sup>
- Tariff number: 2833 21 00 00
- Applications: analytical chemistry.

uncertainty ± 0,001  
 1 ml = 0,0012037 g  $\text{MgSO}_4$ . This volumetric solution was checked by means of potentiometric methods using an EDTA disodium salt standard solution, that was also checked against Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

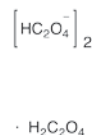
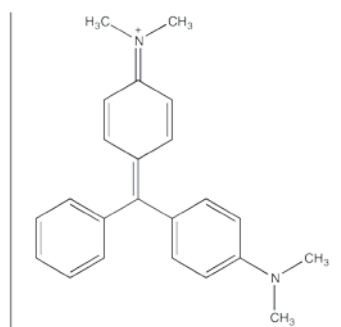
Art. No.	Volume	Container
MA00871000	1 l	Ⓒ

#### Specifications:

factor . . . . . 0,999 - 1,001

## Malachite green oxalate, C.I. 42000

### VE0100 Malachite green oxalate, C.I. 42000, reagent and microscopy grade



- Synonyms: Diamond green B
- $\text{C}_{30}\text{H}_{32}\text{O}_8\text{N}_4 \cdot \text{H}_2\text{C}_2\text{O}_4$
- $M = 927,02 \text{ g/mol}$
- CAS [2437-29-8]
- EINECS-No.: 219-441-7
- Solub. in water: (24 °C): 110 g/l
- Melting point: ~ 159 °C
- EC-Index-No.: 607-007-00-3
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312
- GHS-P sentences: P280 - P322 - P301 + P312 - P312 - P363 - P501a
- Tariff number: 3204 13 00 90

- Applications: analytical chemistry, for microbiology, microscopy.
- Appearance: Green powder

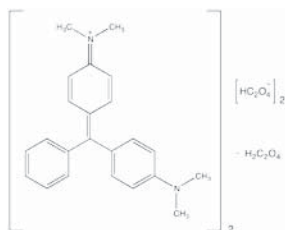
#### Specifications:

identity . . . . . passes test  
 Absorption maximum  $\lambda$  (in  $\text{H}_2\text{O}$ ) . . . . . 616 - 620 nm  
 Absorptivity ( $A_{1\%}^1/\text{cm}$ ;  $I$  max; 0,003 g/l,  $\text{H}_2\text{O}$ ) . . . . . 1730 - 1960  
 loss on drying (110 °C) . . . . . max. 7 %  
 TLC test . . . . . passes test

Art. No.	Volume	Container
VE01000025	25 g	Ⓒ
VE01000100	100 g	Ⓒ
VE01001000	1 kg	Ⓕ

## Malachite green oxalate, solution

### VE0101 Malachite green oxalate, solution for microscopy



- $C_{50}H_{52}O_8N_4 \cdot H_2C_2O_4$
- M = 927,02 g/mol
- CAS [2437-29-8]
- EINECS-No.: 219-441-7
- Density: 1,07 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 6.1 T1 III UN 2810
- IMDG: 6.1 III UN 2810
- IATA/ICAO: 6.1 III UN 2810
- GHS-signal word: Danger
- GHS-H sentences: H318 - H361 - H411
- GHS-P sentences: P280 - P281 - P305 + P351 + P338 - P310 - P405 - P501a

• Tariff number: 3822 00 00 00

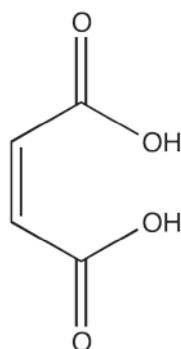
#### Specifications:

composition :  
malachite green oxalate . . . . . 70 g  
distilled water . . . . . 1000 ml  
suitability for microscopy . . . . . passes test

Art. No.	Volume	Container
VE0101G100	100 ml	0
VE01011000	1 l	0

## Maleic acid

### AC1410 Maleic acid, extra pure, Pharmpur®, Ph Eur, BP



- Synonyms: cis-Butenedioic acid
- $C_4H_4O_4$
- M = 116,07 g/mol
- CAS [110-16-7]
- EINECS-No.: 203-742-5
- Solub. in water: (25 °C): 788 g/l
- Melting point: 133 °C
- Boiling point: 135 °C (decomposes)
- Flash pt. 127 °C
- Vapour pressure: (20 °C) < 0,1 hPa
- LD 50 (oral, rat): 708 mg/kg
- EC-Index-No.: 607-095-00-3
- ADR: 8 C4 III UN 3261
- IMDG: 8 III UN 3261
- IATA/ICAO: 8 III UN 3261
- GHS-signal word: Warning
- GHS-H sentences: H302 - H315 - H319 - H317 - H335 -
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2917 19 90 90

- Applications: synthesis of organic products, manufacturing of synthetic resins, for pharmaceuticals synthesizing, manufacture of dyes, in pharma industry.

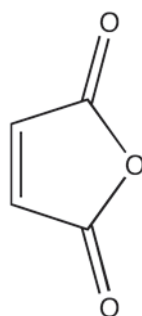
#### Specifications:

assay (acidimetric, referred to dried sample) . . . . . 99 - 101 %  
identification . . . . . passes test  
appearance of solution (10 %, H<sub>2</sub>O) . . . . . passes test  
fumaric acid (TLC) . . . . . max. 1,5 %  
heavy metals (as Pb) . . . . . max. 0,001 %  
iron (Fe) . . . . . max. 0,0005 %  
residue on ignition . . . . . max. 0,1 %  
water (K.F.) . . . . . max. 2 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC14100500	500 g	0
AC14101000	1 kg	0

## Maleic anhydride

### AN0250 Maleic anhydride, synthesis grade



- Synonyms: 2,5-Furanedione
- $C_4H_2O_3$
- M = 98,06 g/mol
- CAS [108-31-6]
- EINECS-No.: 203-571-6
- Solub. in water: (20 °C): hydrolysis reaction
- Melting point: 51 - 53 °C
- Boiling point: 200 °C
- Flash pt. 103 °C
- Ignition temp.: 475 °C
- Vapour pressure: (40 °C) 1,3 hPa
- LD 50 (oral, rat): 481 mg/kg
- EC-Index-No.: 607-096-00-9
- ADR: 8 C4 III UN 2215
- IMDG: 8 III UN 2215
- IATA/ICAO: 8 III UN 2215
- GHS-signal word: Danger

- GHS-H sentences: H334 - H314 - H302 - H317
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2917 14 00 00
- Applications: synthesis of organic products, manufacture of dyes, for pharmaceuticals synthesizing, in food industry, manufacturing of synthetic resins.

#### Specifications:

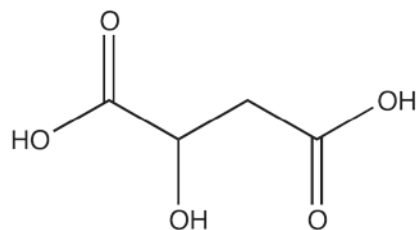
assay (morpholine method) . . . . . min. 99 %  
identity (IR-spectrum) . . . . . passes test  
residue on ignition . . . . . max. 0,01 %

Art. No.	Volume	Container
AN02500500	500 g	0
AN02501000	1 kg	0

# Malica

## DL-Malic acid

AC1420 DL-Malic acid, extra pure, Pharmapur®, Ph Eur, BP, NF



- Synonyms: DL-Hydroxysuccinic acid, DL-Malate
- $C_4H_6O_5$
- $M = 134,09$  g/mol
- CAS [6915-15-7]
- EINECS-No.: 230-022-8
- Solub. in water: (20 °C): ~ 530 g/l
- Melting point: 127-130 °C
- Boiling point: 150 °C (decomposes)
- Flash pt. 203 °C
- Ignition temp.: 349 °C
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2918 19 80 20
- Applications: in biochemistry, for pharmaceuticals synthesizing, synthesis of organic products, in pharma industry.

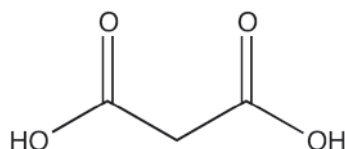
### Specifications:

assay (acidimetric, on dried sample) . . . . . 99 - 101 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 water-insoluble substances . . . . . max. 0,1 %  
 specific rotation ( $[\alpha]_{25}^{20}/D;c = 20, H_2O$ ) . . . . . - 0,10° - + 0,10°  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 fumaric acid . . . . . max. 1 %  
 maleic acid . . . . . max. 0,05 %  
 related substances . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 water (K.F.) . . . . . max. 2 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC14200500	500 g	Ⓜ
AC14201000	1 kg	Ⓜ

## Malonic acid

AC1430 Malonic acid, synthesis grade



- Synonyms: 1,3-Propanedioic acid
- $C_3H_4O_4$
- $M = 104,06$  g/mol
- CAS [141-82-2]
- EINECS-No.: 205-503-0
- Solub. in water: (20 °C): 735 g/l
- Melting point: 136 °C
- Flash pt. 157 °C
- LD 50 (oral, rat): 1310 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302 - H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P301 + P312 - P337 + P313 - P501a

- Tariff number: 2917 19 10 00
- Applications: synthesis of organic products, for pharmaceuticals synthesizing.

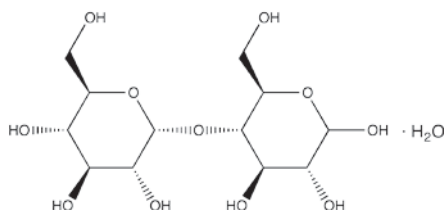
### Specifications:

assay (acidimetric) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test

Art. No.	Volume	Container
AC14300250	250 g	Ⓜ

## Maltose monohydrate

MA0100 Maltose monohydrate, for microbiology



- Synonyms: Maltobiose, 4-O- $\alpha$ -D-Glucopyranosyl-D-glucose
  - $C_{12}H_{22}O_{11} \cdot H_2O$
  - $M = 360,32$  g/mol
  - CAS [6363-53-7]
  - EINECS-No.: 200-716-5
  - Solub. in water: (20 °C): 1080 g/l
  - Melting point: 160 - 165 °C
  - Tariff number: 1702 90 10 90
- Specifications:**  
 appearance of solution . . . . . passes test  
 acidity or alkalinity . . . . . passes test  
 pH (5 %,  $H_2O$ ) . . . . . 4,5 - 6,0

specific rotation ( $[\alpha]_{20}^{20}/D, c = 10, H_2O$ ) . . . . . + 160 - + 165 °  
 arsenic (As) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,0005 %  
 calcium (Ca) . . . . . max. 0,005 %  
 copper (Cu) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 proteins . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 water (K.F.) . . . . . 4,5 - 5,5 %  
 suitability for microbiology . . . . . passes test

Art. No.	Volume	Container
MA01000500	500 g	Ⓜ

## Manganese

MA0120 Manganese, powder, synthesis grade

- Mn
- $M = 54,94$  g/mol
- CAS [7439-96-5]
- EINECS-No.: 231-105-1
- Solub. in water: (20 °C): insoluble
- Melting point: 1260 °C

- Boiling point: 1900 °C
- LD 50 (oral, rat): 9000 mg/kg
- Tariff number: 8111 00 11 00
- Applications: laboratory reagent, synthesis of organic products, inorganic salts, metal alloys, in building materials.

### Specifications:

assay (complexometric) . . . . . approx. 99 %

Art. No.	Volume	Container
MA01200250	250 g	Ⓜ

## Manganese(II) nitrate tetrahydrate

## MA0123 Manganese(II) nitrate tetrahydrate, reagent grade

- $\text{Mn}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$
- $M = 251,01 \text{ g/mol}$
- CAS [20694-39-7]
- EINECS-No.: 233-828-8
- Solub. in water: (20 °C): 3800 g/l
- Melting point: 37 °C
- ADR: 5.1 O2 III UN 2724
- IMDG: 5.1 III UN 2724
- IATA/ICAO: 5.1 III UN 2724
- GHS-signal word: Danger
- GHS-H sentences: H272
- GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a

- Tariff number: 2834 29 80 00
- Applications: analytical chemistry, laboratory reagent, for the synthesis of:  $\text{MnO}_2$ ; in porcelain industry.

## Specifications:

assay (complexometric) . . . . . min. 98,5 %  
 pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 2,8 - 3,6  
 chlorides (Cl) . . . . . max. 0,001 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,005 %  
 ammonium ( $\text{NH}_4$ ) . . . . . max. 0,05 %  
 calcium (Ca) . . . . . max. 0,001 %  
 copper (Cu) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %

lead (Pb) . . . . . max. 0,001 %  
 magnesium (Mg) . . . . . max. 0,005 %  
 nickel (Ni) . . . . . max. 0,0005 %  
 potassium (K) . . . . . max. 0,005 %  
 sodium (Na) . . . . . max. 0,005 %  
 zinc (Zn) . . . . . max. 0,001 %

Art. No.	Volume	Container
MA01231000	1 kg	P
MA0123005P	5 kg	P
MA01230500	500 g	P

## Manganese(II) chloride tetrahydrate

## MA0122 Manganese(II) chloride tetrahydrate, extra pure

- $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$
- $M = 197,91 \text{ g/mol}$
- CAS [13446-34-9]
- EINECS-No.: 231-869-6
- Solub. in water: (20 °C): soluble
- Melting point: 58 °C
- LD 50 (oral, rat): 1484 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a

- Tariff number: 2827 39 85 90
- Applications: analytical chemistry, for determination of: dissolved oxygen.

## Specifications:

assay (complexometric) . . . . . 98 - 102 %  
 insoluble in water . . . . . max. 0,025 %  
 pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 3,5 - 6,0  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,025 %  
 calcium (Ca) . . . . . max. 0,1 %  
 heavy metals (as Pb) . . . . . max. 0,002 %

iron (Fe) . . . . . max. 0,001 %  
 lead (Pb) . . . . . max. 0,001 %  
 nickel (Ni) . . . . . max. 0,005 %  
 zinc (Zn) . . . . . max. 0,01 %

Art. No.	Volume	Container
MA01220500	500 g	P
MA01221000	1 kg	P
MA0122005P	5 kg	P

## Manganese(IV) oxide

- Synonyms: Manganese dioxide, Pyrolusite, Black manganese oxide, Manganese superoxide
- $\text{MnO}_2$
- $M = 86,94 \text{ g/mol}$
- CAS [1313-13-9]
- EINECS-No.: 215-202-6
- Solub. in water: (20 °C): insoluble
- Melting point: 535 °C (decomposes)

- EC-Index-No.: 025-001-00-3
- ADR: 5.1 O2 II UN 1479
- IMDG: 5.1 II UN 1479
- IATA/ICAO: 5.1 II UN 1479
- GHS-signal word: Warning
- GHS-H sentences: H302 - H332
- GHS-P sentences: P261 - P264 - P301 + P312 - P304 + P340 - P312 - P501a

- Tariff number: 2820 10 00 90
- Applications: laboratory reagent, in building materials, oxidizing agent, electrolyte for batteries, manufacture of glass, painting (in porcelain industry), manufacture of dyes (in the textile industry), pigment.
- Appearance: Dark grey to black powder

## MA0126 Manganese(IV) oxide, synthesis grade

assay (permanganometric) . . . . . approx. 90 %

Art. No.	Volume	Container
MA01260500	500 g	P
MA01261000	1 kg	P
MA0126005P	5 kg	P

## MA0125 Manganese(IV) oxide, 90%, extra pure

assay (permanganometric) . . . . . approx. 90 %  
 insoluble in HCl . . . . . max. 0,05 %  
 chlorides (Cl) . . . . . max. 0,05 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,1 %

silicium dioxide ( $\text{SiO}_2$ ) . . . . . max. 3 %  
 iron (Fe) . . . . . max. 1 %  
 loss on drying (105 °C) . . . . . max. 1 %

Art. No.	Volume	Container
MA01250100	100 g	P
MA01250500	500 g	P

## Manganese(II) sulfate monohydrate

- $\text{MnSO}_4 \cdot \text{H}_2\text{O}$
- $M = 169,02 \text{ g/mol}$
- CAS [10034-96-5]
- EINECS-No.: 232-089-9
- Solub. in water: (20 °C): 762 g/l
- Melting point: 117 °C (decomposes)

- EC-Index-No.: 025-003-00-4
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning
- GHS-H sentences: H373 - H411

- GHS-P sentences: P260 - P273 - P314 - P391 - P501a
- Tariff number: 2833 29 90 00
- Applications: analytical chemistry, in porcelain industry.

## MA0130 Manganese(II) sulfate monohydrate, extra pure, Pharpur®, Ph Eur, BP, USP

assay (complex, on ignited sample) . . . . . 98 - 102 %  
 identification . . . . . passes test  
 appearance of solution . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,01 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,001 %

zinc (Zn) . . . . . max. 0,005 %  
 non precipitable with  $(\text{NH}_4)_2\text{S}$  . . . . . max. 0,5 %  
 residue on ignition (500 °C) . . . . . 10 - 13 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
MA01300500	500 g	P
MA01301000	1 kg	P
MA0130005P	5 kg	P
MA0130025P	25 kg	P

# Mangan

## MA0133 Manganese(II) sulfate monohydrate, powder, Pharmpur®, Ph Eur, USP, GMP, suitable for use as excipient

assay (complex, on ignited sample) . . . . .98 - 102 %  
 identification . . . . .passes test  
 appearance of solution . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,01 %  
 heavy metals (as Pb) . . . . .max. 0,002 %  
 iron (Fe) . . . . .max. 0,001 %  
 zinc (Zn) . . . . .max. 0,005 %

non precipitable with (NH<sub>4</sub>)<sub>2</sub>S . . . . .max. 0,5 %  
 residue on ignition (500 °C) . . . . .10 - 13 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
 Suitable for use as excipient according to requirements of GMP.




Art. No.	Volume	Container
MA01331000	1 kg	
MA0133025P	25 kg	

## MA0131 Manganese(II) sulfate monohydrate, reagent grade, ACS, Reag. Ph Eur

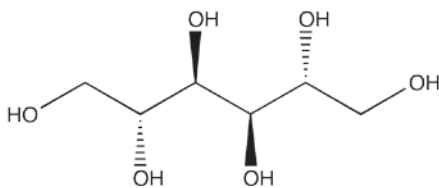
assay (complexometric) . . . . .99 - 101 %  
 identity . . . . .passes test  
 appearance of solution . . . . .passes test  
 insoluble in water . . . . .max. 0,01 %  
 chlorides (Cl) . . . . .max. 0,001 %  
 calcium (Ca) . . . . .max. 0,005 %  
 copper (Cu) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,001 %

iron (Fe) . . . . .max. 0,001 %  
 lead (Pb) . . . . .max. 0,001 %  
 magnesium (Mg) . . . . .max. 0,005 %  
 nickel (Ni) . . . . .max. 0,0005 %  
 potassium (K) . . . . .max. 0,005 %  
 sodium (Na) . . . . .max. 0,005 %  
 zinc (Zn) . . . . .max. 0,005 %  
 substances reducing KMnO<sub>4</sub> . . . . .passes test

residue on ignition (500 °C) . . . . .10 - 12 %

Art. No.	Volume	Container
MA01310500	500 g	
MA01311000	1 kg	
MA0131005P	5 kg	

## D(-)-Mannitol






- Synonyms: Manna sugar
- C<sub>6</sub>H<sub>14</sub>O<sub>6</sub>
- M = 182,17 g/mol
- CAS [69-65-8]
- EINECS-No.: 200-711-8
- Solub. in water: (25 °C): 213 g/l
- Melting point: 165-169 °C
- Boiling point: (4 hPa) 290 - 295 °C
- LD 50 (oral, rat): 13500 mg/kg

- Tariff number: 2905 43 00 00
- Applications: analytical chemistry, manufacturing of synthetic resins, for pharmaceuticals synthesizing, in food industry, for determination of: boric acid.

## MA0149 D(-)-Mannitol, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (HPLC on dried sample) . . . . .97 - 102 %  
 identity (IR-spectrum) . . . . .passes test  
 appearance of solution (10 %, H<sub>2</sub>O) . . . . .clear and colourless  
 conductivity (25°C; 20%, in H<sub>2</sub>O) . . . . .max. 20 µS/cm  
 specific rotation ([α]<sub>20</sub><sup>D</sup> / D, c = 10, ammonium molybdate solution) . . . . .+ 137 ° - + 145 °  
 melting point . . . . .165 - 170 °C  
 chlorides (as Cl) . . . . .max. 0,007 %  
 acidity . . . . .passes test

sulfates (as SO<sub>4</sub>) . . . . .max. 0,01 %  
 arsenic (As) . . . . .max. 0,0001 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 nickel (Ni) . . . . .max. 0,0001 %  
 related substances . . . . .passes test  
 reducing sugars (as glucose) . . . . .max. 0,1 %  
 loss on drying (105 °C, 4h) . . . . .max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.




Art. No.	Volume	Container
MA01490500	500 g	
MA01491000	1 kg	
MA0149005P	5 kg	

## MA0151 D(-)-Mannitol, powder, Pharmpur®, Ph Eur, USP, GMP, suitable for use as excipient

assay (referred to dried sample) . . . . .96 - 102 %  
 identification . . . . .passes test  
 appearance of solution . . . . .clear and colourless  
 melting range . . . . .164 - 170 °C  
 acidity . . . . .passes test  
 conductivity (20°C; 20 %, in H<sub>2</sub>O) . . . . .max. 20 µS/cm  
 specific rotation ([α]<sub>20</sub><sup>D</sup> / D; c = 8, Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub>) . . . . .+ 23 ° - + 25 °  
 specific rotation ([α]<sub>25</sub><sup>D</sup> / D; c = 1 ammonium molybdate) . . . . .+ 137 ° - + 145 °  
 chlorides (Cl) . . . . .max. 0,007 %

sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %  
 arsenic (As) . . . . .max. 0,0001 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 nickel (Ni) . . . . .max. 0,0001 %  
 total related substances . . . . .max. 2 %  
 reducing sugars (as glucose) . . . . .max. 0,1 %  
 loss on drying (105 °C, 4h) . . . . .max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Suitable for use as excipient according to requirements of GMP.



Art. No.	Volume	Container
MA01511000	1 kg	
MA0151005P	5 kg	
MA0151025P	25 kg	

## MA0150 D(-)-Mannitol, reagent grade, ACS, Reag. Ph Eur

assay (iodometric) . . . . .min. 99,0 %  
 identity (IR-spectrum) . . . . .passes test  
 specific rotation ([α]<sub>20</sub><sup>D</sup> / D, c=10 in borax, 13 %) . . . . .+ 23,3 ° - + 24,3 °  
 insoluble in water . . . . .max. 0,01 %  
 acidity . . . . .max. 0,0008 meq/g  
 chlorides (Cl) . . . . .max. 0,0025 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
 arsenic (As) . . . . .max. 0,0001 %

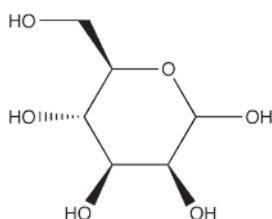
calcium (Ca) . . . . .max. 0,001 %  
 copper (Cu) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0005 %  
 lead (Pb) . . . . .max. 0,0005 %  
 nickel (Ni) . . . . .max. 0,0001 %  
 zinc (Zn) . . . . .max. 0,0005 %  
 reducing sugars (as glucose) . . . . .passes test  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test

loss on drying (105 °C) . . . . .max. 0,05 %  
 residue on ignition . . . . .max. 0,01 %

Art. No.	Volume	Container
MA01500500	500 g	
MA01501000	1 kg	
MA0150005P	5 kg	

## D(+)-Mannose

### MA0160 D (+)-Mannose, for biochemistry



- C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>
- M = 180,16 g/mol
- CAS [3458-28-4]
- EINECS-No.: 222-392-4
- Solub. in water: (20 °C): freely soluble
- Melting point: 133 °C
- Tariff number: 2940 00 00 10
- Applications: analytical chemistry, in biochemistry, in food industry, synthesis of organic products.

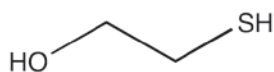
**Specifications:**  
 assay (HPLC) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 specific rotation ([α]<sub>20</sub><sup>D</sup> / D, c = 5, H<sub>2</sub>O) . . . . .+ 13,8 ° - + 14,4 °  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,5 %

Art. No.	Volume	Container
MA01600010	10 g	
MA01600100	100 g	



## 2-Mercaptoethanol

### ME0095 2-Mercaptoethanol, molecular biology grade



- Synonyms: Hydroxyethyl mercaptan, Thioethylene glycol, Thioglycol
- $C_2H_6OS$
- $M = 78,13 \text{ g/mol}$
- CAS [60-24-2]
- EINECS-No.: 200-464-6
- Density:  $1,12 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point:  $-100 \text{ °C}$
- Boiling point:  $157 \text{ °C}$
- Flash pt.  $68 \text{ °C}$
- Ignition temp.:  $295 \text{ °C}$
- Vapour pressure: (20 °C) 1 hPa
- LD 50 (oral, rat): 244 mg/kg
- ADR: 6.1 T1 II UN 2966
- IMDG: 6.1 II UN 2966
- IATA/ICAO: 6.1 II UN 2966
- GHS-signal word: Danger
- GHS-H sentences: H301 - H310 - H314 - H411

- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2930 90 99 99
- Applications: for microbiology, protector for carbonyl groups, for the synthesis of: sulfides.
- Appearance: Colourless liquid

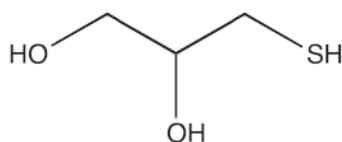
#### Specifications:

assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 heavy metals (as Pb) .....max. 0,0001 %  
 water (K.F.) .....max. 0,2 %  
 DNases, RNases, Proteases ..... non detected

Art. No.	Volume	Container
ME00950050	50 ml	0
ME00950250	250 ml	0

## 3-Mercapto-1,2-propanediol

### TI0220 3-Mercapto-1,2-propanediol, min. 98%, reagent grade



- Synonyms:  $\alpha$ -Thioglycerol
- $C_3H_8O_2S$
- $M = 108,16 \text{ g/mol}$
- CAS [96-27-5]
- EINECS-No.: 202-495-0
- Density:  $1,25 \text{ g/cm}^3$
- Solub. in water: (20 °C): sparingly miscible
- Boiling point:  $118 \text{ °C}$
- Flash pt.  $110 \text{ °C}$
- ADR: Not regulatedIMDG: Not regulatedIATA/ICAO: 9 UN 3334
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332 - H315 - H319 - H335

- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2930 90 99 99
- Applications: for pharmaceuticals synthesizing.

#### Specifications:

assay (iodometric) .....min. 98 %  
 identity (IR-spectrum) .....passes test  
 heavy metals (as Pb) .....max. 0,0005 %  
 iron (Fe) .....max. 0,0005 %  
 residue on ignition .....max. 0,05 %

Art. No.	Volume	Container
TI02202500	2,5 l	0

## Mercury

### ME0175 Mercury, metal, extra pure, washed, Reag. Ph Eur



- Hg
- $M = 200,59 \text{ g/mol}$
- CAS [7439-97-6]
- EINECS-No.: 231-106-7
- Density:  $13,55 \text{ g/cm}^3$
- Solub. in water: (25 °C): 0,0036 mg/l
- Melting point:  $-39 \text{ °C}$
- Boiling point:  $357 \text{ °C}$
- Vapour pressure: (20 °C) 0,0017 hPa
- EC-Index-No.: 080-001-00-0
- ADR: 8 CT1 III UN 2809
- IMDG: 8 III UN 2809

- IATA/ICAO: 8 III UN 2809
- GHS-signal word: Danger
- GHS-H sentences: H330 - H360D - H372 - H410
- GHS-P sentences: P260 - P284 - P310 - P320 - P405 - P501a
- Tariff number: 2805 40 90 00
- Applications: in thermometers, catalyst (synthesis of organic products), inorganic salts, amalgams, for pharmaceuticals synthesizing, for electroanalysis.

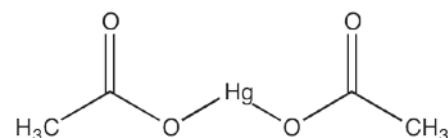
insoluble in  $HNO_3$  .....max. 0,002 %  
 heavy metals (as Pb) .....max. 0,0005 %  
 iron (Fe) .....max. 0,0005 %  
 loss on drying .....max. 0,003 %

Art. No.	Volume	Container
ME01750100	100 g	0
ME01750250	250 g	0
ME01751000	1 kg	0

#### Specifications:

assay .....min. 99,6 %

## Mercury(II) acetate



- Synonyms: Acetic acid mercury(II) salt, Mercuric salts
- $Hg(CH_3COO)_2$
- $M = 318,68 \text{ g/mol}$
- CAS [1600-27-7]
- EINECS-No.: 216-491-1
- Solub. in water: (20 °C): 400 g/l
- Melting point:  $178 - 180 \text{ °C}$
- LD 50 (oral, rat): 40,9 mg/kg
- EC-Index-No.: 080-002-00-6

- ADR: 6.1 T5 II UN 1629
- IMDG: 6.1 II UN 1629
- IATA/ICAO: 6.1 II UN 1629
- GHS-signal word: Danger
- GHS-H sentences: H300 - H310 - H330 - H373 - H410
- GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2852 10 00 00
- Applications: for mercuration of organic compounds.

### ME0120 Mercury(II) acetate, extra pure



assay (complexometric) .....min. 98,5 %  
 insoluble in water .....max. 0,05 %  
 chlorides (Cl) .....max. 0,025 %  
 sulfates ( $SO_4$ ) .....max. 0,02 %  
 copper (Cu) .....max. 0,005 %

iron (Fe) .....max. 0,005 %  
 lead (Pb) .....max. 0,005 %  
 mercury (I) (as Hg) .....max. 0,5 %  
 nickel (Ni) .....max. 0,005 %

Art. No.	Volume	Container
ME01200100	100 g	0
ME01200250	250 g	0
ME01201000	1 kg	0

# Mercur

## ME0121 Mercury(II) acetate, reagent grade, ACS, Reag. Ph Eur

assay (complexometric) . . . . .min. 99 %	other heavy metals (as Pb) . . . . .max. 0,002 %
insoluble in diluted CH <sub>3</sub> COOH . . . . .max. 0,01 %	iron (Fe) . . . . .max. 0,001 %
chlorides (Cl) . . . . .max. 0,005 %	mercury (I) (as Hg) . . . . .max. 0,3 %
nitrates (NO <sub>3</sub> ) . . . . .max. 0,005 %	sulfated ash after reduction . . . . .max. 0,02 %
sulfates (SO <sub>4</sub> ) . . . . .max. 0,005 %	

Art. No.	Volume	Container
ME01210100	100 g	
ME01211000	1 kg	

## Mercury(I) chloride

### ME0160 Mercury(I) chloride, synthesis grade

<ul style="list-style-type: none"> <li>Synonyms: Calomel, Mercurous salts</li> <li>Hg<sub>2</sub>Cl<sub>2</sub></li> <li>M = 472,09 g/mol</li> <li>CAS [10112-91-1]</li> <li>EINECS-No.: 233-307-5</li> <li>Solub. in water: (20 °C): 0,0023 g/l</li> <li>Vapour pressure: (120 °C) ~ 0,015 hPa</li> <li>LD 50 (oral, rat): 210 mg/kg</li> <li>EC-Index-No.: 080-003-00-1</li> <li>ADR: 9 M7 III UN 3077</li> </ul>	<ul style="list-style-type: none"> <li>IMDG: 9 III UN 3077</li> <li>IATA/ICAO: 9 III UN 3077</li> <li>GHS-signal word: Warning</li> <li>GHS-H sentences: H410 - H302 - H315 - H319 - H335</li> <li>GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a</li> <li>Tariff number: 2852 10 00 00</li> <li>Applications: laboratory reagent, in porcelain industry, electrolyte for batteries, fungicide, antiseptic.</li> </ul>
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**Specifications:**

assay (iodometric) . . . . .min. 99 %
residue on ignition . . . . .max. 0,1 %

Art. No.	Volume	Container
ME01600100	100 g	
ME01601000	1 kg	

## Mercury(II) chloride

<ul style="list-style-type: none"> <li>HgCl<sub>2</sub></li> <li>M = 271,50 g/mol</li> <li>CAS [7487-94-7]</li> <li>EINECS-No.: 231-299-8</li> <li>Solub. in water: (20 °C): 74 g/l</li> <li>Melting point: 280,7 °C</li> <li>Boiling point: 302 °C</li> </ul>	<ul style="list-style-type: none"> <li>Vapour pressure: (20 °C) 0,0001 hPa</li> <li>LD 50 (oral, rat): 1 mg/kg</li> <li>EC-Index-No.: 080-010-00-X</li> <li>ADR: 6.1 T5 II UN 1624</li> <li>IMDG: 6.1 II UN 1624</li> <li>IATA/ICAO: 6.1 II UN 1624</li> <li>GHS-signal word: Danger</li> </ul>	<ul style="list-style-type: none"> <li>GHS-H sentences: H300 - H372 - H341 - H361f - H314 - H410</li> <li>GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a</li> <li>Tariff number: 2852 10 00 00</li> <li>Applications: analytical chemistry, catalyst, synthesis of organic products.</li> </ul>
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## ME0169 Mercury(II) chloride, extra pure, Pharmpur®, Ph Eur, BP

assay (complexometric, on dried sample) . . . . .99,5 - 100,5 %	loss on drying (at vacuum) . . . . .max. 1 %
identification . . . . .passes test	Residual solvents are analysed according to guideline
appearance of solution . . . . .passes test	CPMP/ICH/283/95.
acidity or alkalinity . . . . .passes test	
mercury (I) chloride . . . . .passes test	

Art. No.	Volume	Container
ME01690100	100 g	
ME01690250	250 g	
ME01691000	1 kg	

## ME0170 Mercury(II) chloride, reagent grade, ACS, ISO

assay (complexometric) . . . . .min. 99,5 %	copper (Cu) . . . . .max. 0,001 %
identity . . . . .passes test	iron (Fe) . . . . .max. 0,002 %
appearance of solution . . . . .passes test	lead (Pb) . . . . .max. 0,001 %
insoluble in water . . . . .max. 0,01 %	magnesium (Mg) . . . . .max. 0,001 %
solution in ethyl ether . . . . .passes test	mercury(I) chloride (Hg <sub>2</sub> Cl <sub>2</sub> ) . . . . .max. 0,05 %
acidity or alkalinity . . . . .passes test	potassium (K) . . . . .max. 0,005 %
nitrates (NO <sub>3</sub> ) . . . . .max. 0,001 %	sodium (Na) . . . . .max. 0,005 %
total nitrogen (as N) . . . . .max. 0,002 %	Residue after reduction
calcium (Ca) . . . . .max. 0,001 %	(calcination residue, as sulfate) . . . . .max. 0,02 %

substances reducing KMnO <sub>4</sub> . . . . .passes test
loss on drying (on P <sub>2</sub> O <sub>5</sub> ) . . . . .max. 1 %

Art. No.	Volume	Container
ME01700100	100 g	
ME01700250	250 g	
ME01701000	1 kg	

## Mercury(II) iodide

### ME0250 Mercury(II) iodide, red, reagent grade, ACS

<ul style="list-style-type: none"> <li>HgI<sub>2</sub></li> <li>M = 454,40 g/mol</li> <li>CAS [7774-29-0]</li> <li>EINECS-No.: 231-873-8</li> <li>Solub. in water: (25 °C): 0,06 g/l</li> <li>Melting point: 259 °C</li> <li>Boiling point: 354 °C</li> <li>Vapour pressure: (60 °C) ~ 0,001 hPa</li> <li>LD 50 (oral, rat): 18 mg/kg</li> <li>EC-Index-No.: 080-002-00-6</li> <li>ADR: 6.1 T5 II UN 1638</li> <li>IMDG: 6.1 II UN 1638</li> </ul>	<ul style="list-style-type: none"> <li>IATA/ICAO: 6.1 II UN 1638</li> <li>GHS-signal word: Danger</li> <li>GHS-H sentences: H300 - H310 - H330 - H373 - H410</li> <li>GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a</li> <li>Tariff number: 2852 10 00 00</li> <li>Applications: analytical chemistry, laboratory reagent.</li> </ul>
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soluble mercury salts (as Hg) . . . . .max. 0,05 %
iron (Fe) . . . . .max. 0,001 %
mercury (I) (as Hg) . . . . .max. 0,1 %
other heavy metals (as Pb) . . . . .max. 0,001 %
Residue after reduction
(calcination residue, as sulfate) . . . . .max. 0,02 %

Art. No.	Volume	Container
ME02500050	50 g	
ME02500250	250 g	
ME02501000	1 kg	

## Mercury(I) nitrate dihydrate

### ME0193 Mercury(I) nitrate dihydrate, reagent grade

<ul style="list-style-type: none"> <li>Hg<sub>2</sub>(NO<sub>3</sub>)<sub>2</sub>·2H<sub>2</sub>O</li> <li>M = 561,22 g/mol</li> <li>CAS [14836-60-3]</li> <li>EINECS-No.: 233-886-4</li> <li>Solub. in water: (20 °C): 20 g/l</li> <li>Melting point: 70 °C (decomposes)</li> <li>EC-Index-No.: 080-002-00-6</li> <li>ADR: 6.1 T5 II UN 1627</li> <li>IMDG: 6.1 II UN 1627</li> <li>IATA/ICAO: 6.1 II UN 1627</li> <li>GHS-signal word: Danger</li> </ul>	<ul style="list-style-type: none"> <li>GHS-H sentences: H300 - H310 - H330 - H373 - H410</li> <li>GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a</li> <li>Tariff number: 2852 10 00 00</li> <li>Applications: analytical chemistry, laboratory reagent, inorganic salts.</li> </ul>
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sulfates (SO <sub>4</sub> ) . . . . .max. 0,005 %
iron (Fe) . . . . .max. 0,001 %
other heavy metals (as Pb) . . . . .max. 0,002 %
mercury(II) (as Hg) . . . . .max. 0,5 %
Residue after reduction
(calcination residue, as sulfate) . . . . .max. 0,01 %

Art. No.	Volume	Container
ME01930100	100 g	
ME01930250	250 g	

**Mercury(II) nitrate monohydrate****ME0195 Mercury(II) nitrate monohydrate, reagent grade, Reag. Ph Eur**

- Synonyms: Mercuric nitrate, Mercury pernitrate
- $\text{Hg}(\text{NO}_3)_2 \cdot \text{H}_2\text{O}$
- M = 342,62 g/mol
- CAS [7783-34-8]
- EINECS-No.: 233-152-3
- Solub. in water: (20 °C): hydrolysis reaction
- Melting point: 79 °C (anhydrous substance)
- LD 50 (oral, rat): 26 mg/l (anhydrous substance)
- EC-Index-No.: 080-002-00-6
- ADR: 6.1 T5 II UN 1625
- IMDG: 6.1 II UN 1625
- IATA/ICAO: 6.1 II UN 1625

- GHS-signal word: Danger
- GHS-H sentences: H300 - H310 - H330 - H373 - H410
- GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2852 10 00 00
- Applications: analytical chemistry, laboratory reagent, in pesticide compositions.

sulfates ( $\text{SO}_4$ ) . . . . .max. 0,002 %  
 copper (Cu) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,001 %  
 potassium (K) . . . . .max. 0,005 %  
 sodium (Na) . . . . .max. 0,005 %  
 residue after reduction . . . . .max. 0,01 %

**Specifications:**

assay (complexometric) . . . . .min. 99 %  
 chlorides (Cl) . . . . .max. 0,002 %

Art. No.	Volume	Container
ME01950100	100 g	Ⓟ
ME01950250	250 g	Ⓟ

**Mercury(II) nitrate, volumetric solutions****ME0197 Mercury(II) nitrate, solution 0,01 mol/l (0,02 N)**

- $\text{Hg}(\text{NO}_3)_2$
- M = 324,62 g/mol
- CAS [10045-94-0]
- EINECS-No.: 233-152-3
- Density: 1,007 g/cm<sup>3</sup>
- EC-Index-No.: 080-002-00-6
- ADR: 6.1 T4 III UN 2024
- IMDG: 6.1 III UN 2024
- IATA/ICAO: 6.1 III UN 2024
- GHS-signal word: Warning
- GHS-H sentences: H373 - H302 - H312 - H412

- GHS-P sentences: P260 - P280 - P322 - P301 + P312 - P312 - P501a
- Tariff number: 2852 10 00 00
- Applications: analytical chemistry, laboratory reagent.

1 ml = 0,003246 g  $\text{Hg}(\text{NO}_3)_2$  This volumetric solution was checked by means of classical methods using an EDTA disodium salt standard solution, that was also checked against Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**

factor . . . . .0,999 - 1,001  
 uncertainty ± 0,001

Art. No.	Volume	Container
ME01971000	1 l	Ⓟ

**Mercury(II) oxide**

- $\text{HgO}$
- M = 216,59 g/mol
- CAS [21908-53-2]
- EINECS-No.: 244-654-7
- Solub. in water: (25 °C): 0,052 g/l
- Melting point: > 400 °C (decomposes)

- Vapour pressure: (20 °C) 0,0012 hPa
- LD 50 (oral, rat): 18 mg/kg
- EC-Index-No.: 080-002-00-6
- ADR: 6.1 T5 II UN 1641
- IMDG: 6.1 II UN 1641
- IATA/ICAO: 6.1 II UN 1641

- GHS-signal word: Danger
- GHS-H sentences: H300 - H310 - H330 - H373 - H410
- GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2852 10 00 00

**ME0214 Mercury(II) oxide, red, extra pure**

assay (complexometric) . . . . .min. 99 %  
 identification . . . . .passes test  
 appearance of solution . . . . .passes test  
 insoluble in HCl . . . . .max. 0,05 %  
 acidic or alkaline substances . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,05 %

nitrates ( $\text{NO}_3$ ) . . . . .passes test  
 mercury (II) oxide, yellow . . . . .passes test  
 Residue after reduction  
 (calcination residue, as sulfate) . . . . .max. 0,05 %  
 loss on drying (105 °C) . . . . .max. 0,5 %

Art. No.	Volume	Container
ME02140100	100 g	Ⓟ
ME02140250	250 g	Ⓟ

**ME0215 Mercury(II) oxide, red, reagent grade, ACS**

assay (complexometric) . . . . .min. 99 %  
 insoluble in diluted HCl . . . . .max. 0,03 %  
 chlorides (Cl) . . . . .max. 0,025 %  
 sulfates ( $\text{SO}_4$ ) . . . . .max. 0,005 %  
 total nitrogen (as N) . . . . .max. 0,005 %  
 cadmium (Cd) . . . . .max. 0,0001 %

copper (Cu) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,005 %  
 lead (Pb) . . . . .max. 0,0005 %  
 zinc (Zn) . . . . .max. 0,0005 %  
 Residue after reduction  
 (calcination residue, as sulfate) . . . . .max. 0,025 %

Art. No.	Volume	Container
ME02150050	50 g	Ⓟ
ME02150100	100 g	Ⓟ
ME02150250	250 g	Ⓟ

- $\text{HgO}$
- M = 216,59 g/mol
- CAS [21908-53-2]
- EINECS-No.: 244-654-7
- Solub. in water: (25 °C): 0,052 g/l
- Melting point: > 400 °C (decomposes)
- Vapour pressure: (20 °C) 0,0012 hPa
- LD 50 (oral, rat): 18 mg/kg

- EC-Index-No.: 080-002-00-6
- ADR: 6.1 T5 II UN 1641
- IMDG: 6.1 II UN 1641
- IATA/ICAO: 6.1 II UN 1641
- GHS-signal word: Danger
- GHS-H sentences: H300 - H310 - H330 - H373 - H410

- GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2852 10 00 00
- Applications: analytical chemistry, laboratory reagent, catalyst (synthesis of organic products), painting, pigment (in porcelain industry), for determination of: nitrogen (Kjeldahl).

**ME0210 Mercury(II) oxide, yellow, extra pure**

assay (complexometric) . . . . .min. 99 %  
 insoluble in HCl . . . . .max. 0,05 %  
 chlorides (Cl) . . . . .max. 0,03 %  
 sulfates ( $\text{SO}_4$ ) . . . . .max. 0,025 %  
 nitrogen compounds (as N) . . . . .max. 0,01 %

copper (Cu) . . . . .max. 0,005 %  
 iron (Fe) . . . . .max. 0,005 %  
 lead (Pb) . . . . .max. 0,005 %  
 nickel (Ni) . . . . .max. 0,005 %  
 Residue after reduction  
 (calcination residue, as sulfate) . . . . .max. 0,2 %

Art. No.	Volume	Container
ME02100100	100 g	Ⓟ

**ME0213 Mercury(II) oxide, yellow, reagent grade, ACS, Reag. Ph Eur**

assay (complexometric) . . . . .min. 99 %  
 insoluble in HCl . . . . .max. 0,03 %  
 chlorides (Cl) . . . . .max. 0,025 %  
 sulfates ( $\text{SO}_4$ ) . . . . .max. 0,01 %  
 total nitrogen (as N) . . . . .max. 0,005 %

cadmium (Cd) . . . . .max. 0,001 %  
 copper (Cu) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,003 %  
 lead (Pb) . . . . .max. 0,001 %  
 nickel (Ni) . . . . .max. 0,001 %

zinc (Zn) . . . . .max. 0,001 %  
 residue after reduction . . . . .max. 0,05 %

Art. No.	Volume	Container
ME02130100	100 g	Ⓟ

# Mercur

## Mercury(II) sulfate

- Synonyms: Mercury bisulfate
- $\text{HgSO}_4$
- $M = 296,65 \text{ g/mol}$
- CAS [7783-35-9]
- EINECS-No.: 231-992-5
- Solub. in water: (20 °C): hydrolysis reaction
- Ignition temp.: > 450 °C

- LD 50 (oral, rat): 57 mg/kg
- EC-Index-No.: 080-002-00-6
- ADR: 6.1 T5 II UN 1645
- IMDG: 6.1 II UN 1645
- IATA/ICAO: 6.1 II UN 1645
- GHS-signal word: Danger

- GHS-H sentences: H300 - H310 - H330 - H373 - H410
- GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2852 10 00 00
- Applications: analytical chemistry, laboratory reagent, electrolyte for batteries.

### ME0226 Mercury(II) sulfate, extra pure

assay (complexometric) . . . . .min. 99 %  
 identification . . . . .passes test  
 insoluble in  $\text{H}_2\text{SO}_4$  . . . . .max. 0,01 %  
 chlorides (Cl) . . . . .max. 0,005 %  
 copper (Cu) . . . . .max. 0,005 %  
 iron (Fe) . . . . .max. 0,005 %

lead (Pb) . . . . .max. 0,005 %  
 mercury (I) (as Hg) . . . . .max. 0,2 %  
 nickel (Ni) . . . . .max. 0,005 %  
 Residue after reduction  
 (calcination residue, as sulfate) . . . . .max. 0,1 %

Art. No.	Volume	Container
ME02260100	100 g	Ⓟ
ME02260250	250 g	Ⓟ
ME02261000	1 kg	Ⓟ
ME0226005P	5 kg	Ⓟ

### ME0227 Mercury(II) sulfate, reagent grade, ACS

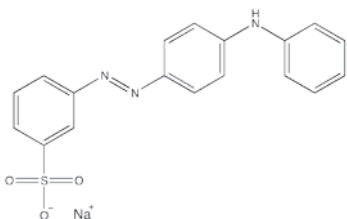
assay (complexometric) . . . . .min. 99 %  
 chlorides (Cl) . . . . .max. 0,003 %  
 nitrates ( $\text{NO}_3$ ) . . . . .passes test  
 cadmium (Cd) . . . . .max. 0,001 %  
 calcium (Ca) . . . . .max. 0,003 %  
 copper (Cu) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,003 %

lead (Pb) . . . . .max. 0,001 %  
 mercury (I) (as Hg) . . . . .max. 0,15 %  
 nickel (Ni) . . . . .max. 0,001 %  
 potassium (K) . . . . .max. 0,002 %  
 zinc (Zn) . . . . .max. 0,001 %  
 Residue after reduction . . . . .max. 0,02 %  
 suitability for COD . . . . .passes test

Art. No.	Volume	Container
ME02270100	100 g	Ⓟ
ME02270250	250 g	Ⓟ
ME02271000	1 kg	Ⓟ

## Metanil yellow, C.I. 13065

### AM0055 Metanil yellow, C.I. 13065, indicator



- Synonyms: 3-(4-Anilinophenylazo)benzenesulfonic acid sodium salt, Acid yellow 36
- $\text{C}_{18}\text{H}_{15}\text{N}_3\text{NaO}_3\text{S}$
- $M = 375,38 \text{ g/mol}$
- CAS [587-98-4]
- EINECS-No.: 209-608-2
- Solub. in water: (20 °C): soluble
- LD 50 (oral, rat): 5000 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H318 - H312 - H332

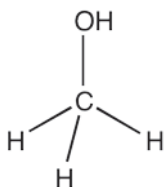
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P310 - P322 - P501a
- Tariff number: 2927 00 00 90
- Applications: analytical chemistry, indicator.

#### Specifications:

pH range (red to yellow) . . . . .1,2 - 2,8

Art. No.	Volume	Container
AM00550025	25 g	Ⓟ

## Methanol



- Synonyms: Methyl alcohol, Carbinol, Methynol, Wood alcohol
- $\text{CH}_3\text{OH}$
- $M = 32,04 \text{ g/mol}$
- CAS [67-56-1]
- EINECS-No.: 200-659-6
- Density: 0,79 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -98 °C
- Boiling point: 64,5 °C
- Flash pt. 11 °C
- Ignition temp.: 455 °C
- Vapour pressure: (20 °C) 128 hPa
- Refraction index: (n 20 °C/D) 1,3288
- Dielectric const.: (25 °C) 32,6

- LD 50 (oral, rat): 5628 mg/kg
- EC-Index-No.: 603-001-00-X
- ADR: 3 FT1 II UN 1230
- IMDG: 3 II UN 1230
- IATA/ICAO: 3 II UN 1230
- GHS-signal word: Danger
- GHS-H sentences: H225 - H301 - H311 - H331 - H370
- GHS-P sentences: P210 - P301 + P310 - P303 + P361 + P353 - P361 - P405 - P501a
- Tariff number: 2905 11 00 00
- Applications: solvents, synthesis of organic products, in antifreeze compositions, solvent for animal and vegetable oils extractions.

### ME0301 Methanol, extra pure, Pharmpur®, Ph Eur, BP, NF

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/20°) . . . . .0,791 - 0,793  
 appearance . . . . .clear and colourless  
 colour (Hazen) . . . . .max. 10  
 acidity or alkalinity . . . . .passes test  
 aldehydes and ketones (as  $\text{C}_2\text{H}_5\text{CHO}$ ) . . . . .max. 0,003 %  
 related substances . . . . .passes test  
 reducing substances . . . . .passes test  
 readily oxidisable substances . . . . .passes test  
 substances darkened by  $\text{H}_2\text{SO}_4$  . . . . .passes test

residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95. max. absorbance in a 1,0 cm cell at wavelength: A (AU)  
 290 nm. . . . .0,01 AU  
 270 nm. . . . .0,02 AU  
 250 nm. . . . .0,05 AU  
 230 nm. . . . .0,15 AU

Art. No.	Volume	Container
ME03011000	1 l	Ⓟ
ME03012500	2,5 l	Ⓟ
ME0301005L	5 l	Ⓟ
ME0301005P	5 l	Ⓟ
ME0301025P	25 l	Ⓟ
ME0301025S	25 l	Ⓟ

**ME0302 Methanol, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (G.C.)	min. 99,9 %	gallium (Ga)	max. 0,000002 %
identity (IR-spectrum)	passes test	gold (Au)	max. 0,000002 %
density (20°/4°)	0,790 - 0,792	indium (In)	max. 0,000002 %
density (20°/20°)	0,791 - 0,793	iron (Fe)	max. 0,00001 %
appearance	clear	lead (Pb)	max. 0,00001 %
colour (Hazen)	max. 10	lithium (Li)	max. 0,000005 %
boiling point	64 - 65 °C	magnesium (Mg)	max. 0,00001 %
solubility in water	passes test	manganese (Mn)	max. 0,000002 %
acidity	max. 0,0002 meq/g	molybdenum (Mo)	max. 0,000002 %
alkalinity	max. 0,0002 meq/g	nickel (Ni)	max. 0,000002 %
chlorides (Cl)	max. 0,00005 %	platinum (Pt)	max. 0,000005 %
sulfates (SO <sub>4</sub> )	max. 0,0001 %	silver (Ag)	max. 0,000002 %
aluminium (Al)	max. 0,00005 %	thallium (Tl)	max. 0,000002 %
arsenic (As)	max. 0,000002 %	tin (Sn)	max. 0,00001 %
barium (Ba)	max. 0,00001 %	titanium (Ti)	max. 0,000002 %
beryllium (Be)	max. 0,000002 %	vanadium (V)	max. 0,000002 %
bismuth (Bi)	max. 0,000002 %	zinc (Zn)	max. 0,00001 %
boron (B)	max. 0,000002 %	zirconium (Zr)	max. 0,000002 %
cadmium (Cd)	max. 0,000005 %	acetone (G.C.)	max. 0,001 %
calcium (Ca)	max. 0,00005 %	ethanol (G.C.)	max. 0,05 %
chromium (Cr)	max. 0,000002 %	aldehydes and ketones (as C <sub>2</sub> H <sub>5</sub> CHO)	max. 0,001 %
cobalt (Co)	max. 0,000002 %	benzene (G.C.)	max. 0,0002 %
copper (Cu)	max. 0,000002 %	acetaldehyde (CH <sub>3</sub> CHO)	max. 0,001 %

formaldehyde . . . . . max. 0,001 %  
 carbonyl compounds (as CO) . . . . . max. 0,001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 substances reducing KMnO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
ME03021000	1 l	
ME03022500	2,5 l	
ME03024000	4 l	
ME0302005P	5 l	
ME0302007E	7 l	
ME0302025P	25 l	
ME0302025S	25 l	
ME0302030S	30 l	
ME0302200E	200 l	
ME0302200L	200 l	

**ME0315 Methanol, Multisolvant® HPLC grade ACS ISO UV-VIS K.F.**

assay (G.C.)	min. 99,9 %	lead (Pb)	max. 0,00001 %
identity (IR-spectrum)	passes test	lithium (Li)	max. 0,000005 %
density (20°/4°)	0,790 - 0,792	magnesium (Mg)	max. 0,00001 %
appearance	clear	manganese (Mn)	max. 0,000001 %
colour (Hazen)	max. 10	molybdenum (Mo)	max. 0,000002 %
solubility in water	passes test	nickel (Ni)	max. 0,000002 %
acidity	max. 0,0002 meq/g	platinum (Pt)	max. 0,000005 %
alkalinity	max. 0,0002 meq/g	silver (Ag)	max. 0,000002 %
chlorides (Cl)	max. 0,00005 %	thallium (Tl)	max. 0,000002 %
sulfates (SO <sub>4</sub> )	max. 0,0001 %	tin (Sn)	max. 0,00001 %
aluminium (Al)	max. 0,00001 %	titanium (Ti)	max. 0,000002 %
arsenic (As)	max. 0,000002 %	vanadium (V)	max. 0,000002 %
barium (Ba)	max. 0,000001 %	zinc (Zn)	max. 0,000001 %
beryllium (Be)	max. 0,000002 %	zirconium (Zr)	max. 0,000002 %
bismuth (Bi)	max. 0,000002 %	acetone (G.C.)	max. 0,001 %
boron (B)	max. 0,000002 %	ethanol (G.C.)	max. 0,05 %
cadmium (Cd)	max. 0,000001 %	aldehydes and ketones (as C <sub>2</sub> H <sub>5</sub> CHO)	max. 0,001 %
calcium (Ca)	max. 0,00003 %	acetaldehyde (CH <sub>3</sub> CHO)	max. 0,001 %
chromium (Cr)	max. 0,000002 %	formaldehyde	max. 0,0001 %
cobalt (Co)	max. 0,000002 %	carbonyl compounds (as CO)	max. 0,001 %
copper (Cu)	max. 0,000002 %	substances darkened by H <sub>2</sub> SO <sub>4</sub>	passes test
gallium (Ga)	max. 0,000002 %	substances reducing KMnO <sub>4</sub>	passes test
gold (Au)	max. 0,000002 %	residue on evaporation	max. 0,0002 %
indium (In)	max. 0,000002 %	water (K.F.)	max. 0,03 %
iron (Fe)	max. 0,000002 %	liquid chromatography suitability	

absorbance . . . . . passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 207 nm. . . . . 10 % 1,000 AU  
 220 nm. . . . . 50 % 0,301 AU  
 232 nm. . . . . 80 % 0,097 AU  
 242 nm. . . . . 90 % 0,046 AU  
 260 nm. . . . . 98 % 0,009 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
ME03151000	1 l	
ME03152500	2,5 l	
ME03154000	4 l	
ME0315007E	7 l	
ME0315025S	25 l	
ME0315030S	30 l	
ME0315100S	100 l	
ME0315185E	185 l	

**ME0306 Methanol, supragradient HPLC grade**

assay (G.C.)	min. 99,9 %	gradient grade (235 nm) maximum background absor-	
identity (IR-spectrum)	passes test	bance:0,015 AU maximum peak absorbance:0,0015	
density (20°/4°)	0,790 - 0,792	AU	
appearance	clear	fluorescence analysis: maximum absorbance: 1 ppb	
colour (Hazen)	max. 10	as quinine (in 0,1 N sulfuric acid), for the spectra	
solubility in water	passes test	recorded at the following conditions: EX wavelength	
acidity	max. 0,0002 meq/g	between 220 and 450 EM wavelength between 250	
alkalinity	max. 0,0002 meq/g	and 550	
residue on evaporation	max. 0,0001 %	Microfiltered through membranes of pore diameter	
water (K.F.)	max. 0,02 %	0,22 µm	
min. transmission/max. absorbance in a 1,0 cm cell at			
wavelength:	T(%) A (AU)		
215 nm.	50 % 0,301 AU		
240 nm.	90 % 0,046 AU		
260 nm.	98 % 0,010 AU		

Art. No.	Volume	Container
ME03061000	1 l	
ME03062500	2,5 l	
ME03064000	4 l	
ME0306007E	7 l	
ME0306025S	25 l	
ME0306030S	30 l	
ME0306100S	100 l	
ME0306185E	185 l	

**ME0334 Methanol, UHPLC-MS**

assay (G.C.)	min. 99,9 %	manganese (Mn)	max. 0,000001 %
identity (IR-spectrum)	passes test	nickel (Ni)	max. 0,000002 %
density (20°/4°)	0,790 - 0,792	potassium (K)	max. 0,000005 %
appearance	clear	silver (Ag)	max. 0,00001 %
colour (Hazen)	max. 10	sodium (Na)	max. 0,00001 %
solubility in water	passes test	tin (Sn)	max. 0,00001 %
acidity	max. 0,0002 meq/g	zinc (Zn)	max. 0,00001 %
alkalinity	max. 0,0002 meq/g	residue on evaporation	max. 0,0001 %
aluminium (Al)	max. 0,00001 %	water (K.F.)	max. 0,02 %
barium (Ba)	max. 0,000002 %	suitability for use in	
cadmium (Cd)	max. 0,000005 %	UHPLC-MS	
calcium (Ca)	max. 0,00001 %	passes test	
chromium (Cr)	max. 0,000002 %	min. transmission/max. absorbance in a 1,0 cm cell at	
cobalt (Co)	max. 0,000002 %	wavelength:	T(%) A (AU)
copper (Cu)	max. 0,000001 %	205 nm.	20 % 0,699 AU
iron (Fe)	max. 0,000002 %	220 nm.	60 % 0,222 AU
lead (Pb)	max. 0,000002 %		
magnesium (Mg)	max. 0,000002 %		

240 nm. . . . . 90 % 0,046 AU  
 260 nm. . . . . 98 % 0,009 AU  
 gradient grade (235 nm)  
 maximum peak absorbance: . . . . . 0,001 AU  
 gradient grade (254 nm)  
 maximum peak absorbance: . . . . . 0,0002 AU  
 UHPLC-MS test ESI+ . . . . . max. 5 ppb Reserpin  
 UHPLC-MS test ESI- . . . . . max. 20 ppb Digoxin  
 Microfiltered through membranes of pore diameter  
 0,1 µm

Art. No.	Volume	Container
ME03341000	1 l	
ME03342500	2,5 l	

# Methan

## ME0326 Methanol, LC-MS



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,790 - 0,792  
 acidity . . . . . max. 0,0002 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 alkalinity . . . . . max. 0,0002 meq/g  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00001 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000001 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,000002 %

magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000001 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 potassium (K) . . . . . max. 0,00001 %  
 silver (Ag) . . . . . max. 0,00001 %  
 sodium (Na) . . . . . max. 0,00001 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,02 %  
 suitability for use in LC-MS . . . . . passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: . . . . . T(%) A(AU)  
 205 nm . . . . . 20 % 0,699 AU

220 nm . . . . . 60 % 0,222 AU  
 240 nm . . . . . 90 % 0,046 AU  
 260 nm . . . . . 98 % 0,009 AU  
 gradient grade (235 nm)  
 maximum peak absorbance: . . . . . 0,001 AU  
 gradient grade (254 nm)  
 maximum peak absorbance: . . . . . 0,0002 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
ME03261000	1 l	0
ME03262500	2,5 l	0

## ME0318 Methanol, for GC residue analysis



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,790 - 0,792  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,03 %

Suitable for organohalogenated pesticide and dioxins,  
 furans and PCBs residue analysis. ECD, from 1,2,4-tri-  
 chlorobenzene to decachlorobiphenyl, no peaks are  
 obtained greater than 3 pg/ml as lindane. No peaks  
 are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
ME03181000	1 l	0
ME03182500	2,5 l	0
ME03184000	4 l	0

## ME0319 Methanol, GC ultra-trace analysis grade



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,790 - 0,792  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,03 %

Suitable for organohalogenated pesticide and dioxins,  
 furans and PCBs residue analysis. ECD, from 1,2,4-tri-  
 chlorobenzene to decachlorobiphenyl, no peaks are  
 obtained greater than 3 pg/ml as lindane. No peaks  
 are obtained in vicinity of 2,4,5-trichlorobiphenyl. Suita-  
 ble for highly volatile halogenated hydrocarbons trace  
 analysis. ECD, from dichloromethane to 1,2,4-trichlo-  
 robenzene, no peaks are obtained greater than 1 ng/  
 ml as tetrachloromethane.

Suitable for pesticide and polycyclic aromatic  
 hydrocarbons residue analysis. FID, from 1-decanol  
 to 1-tetradecanol, no peaks are obtained greater than  
 5 ng/ml as 1-tetradecanol. No peaks are obtained in  
 vicinity of pyrene.

Art. No.	Volume	Container
ME03191000	1 l	0
ME03192500	2,5 l	0

## ME0314 Methanol, 99,9%, anhydrous (max. 0,003% H<sub>2</sub>O)



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,790 - 0,792  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 solubility in water . . . . . passes test  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 chlorides (Cl) . . . . . max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 arsenic (As) . . . . . max. 0,000002 %  
 barium (Ba) . . . . . max. 0,00001 %  
 beryllium (Be) . . . . . max. 0,000002 %  
 bismuth (Bi) . . . . . max. 0,000002 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %

chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 gallium (Ga) . . . . . max. 0,000002 %  
 gold (Au) . . . . . max. 0,000002 %  
 indium (In) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 lithium (Li) . . . . . max. 0,000005 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 molybdenum (Mo) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 platinum (Pt) . . . . . max. 0,000005 %  
 silver (Ag) . . . . . max. 0,000002 %  
 thallium (Tl) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 titanium (Ti) . . . . . max. 0,000002 %

vanadium (V) . . . . . max. 0,000002 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 zirconium (Zr) . . . . . max. 0,000002 %  
 acetone (G.C.) . . . . . max. 0,001 %  
 ethanol (G.C.) . . . . . max. 0,05 %  
 acetaldehyde (CH<sub>3</sub>CHO) . . . . . max. 0,001 %  
 formaldehyde . . . . . max. 0,001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,003 %

Art. No.	Volume	Container
ME03140100	100 ml	0
ME03140500	500 ml	0
ME03141000	1 l	0

## ME0325 Methanol, 99,8%, anhydrous (max. 0,005% H<sub>2</sub>O), with molecular sieves



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 0,791 - 0,793  
 acidity . . . . . max. 0,0003 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 chlorides (Cl) . . . . . max. 0,0001 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,0002 %  
 iron (Fe) . . . . . max. 0,0001 %  
 acetone (G.C.) . . . . . max. 0,001 %  
 ethanol (G.C.) . . . . . max. 0,1 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test

water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
ME03251000	1 l	0

## ME0304 Methanol, dried (max. 0,005% H<sub>2</sub>O), reagent grade (Karl Fischer)



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,790 - 0,792  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 solubility in water . . . . . passes test  
 acidity . . . . . max. 0,0003 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 chlorides (Cl) . . . . . max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 arsenic (As) . . . . . max. 0,000002 %  
 barium (Ba) . . . . . max. 0,00001 %  
 beryllium (Be) . . . . . max. 0,000002 %  
 bismuth (Bi) . . . . . max. 0,000002 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %

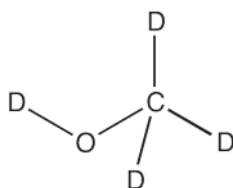
chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 gallium (Ga) . . . . . max. 0,000002 %  
 gold (Au) . . . . . max. 0,000002 %  
 indium (In) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,000002 %  
 lithium (Li) . . . . . max. 0,000005 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000001 %  
 molybdenum (Mo) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 platinum (Pt) . . . . . max. 0,000005 %  
 silver (Ag) . . . . . max. 0,000002 %  
 thallium (Tl) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 titanium (Ti) . . . . . max. 0,000002 %

vanadium (V) . . . . . max. 0,000002 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 zirconium (Zr) . . . . . max. 0,000002 %  
 acetone (G.C.) . . . . . max. 0,001 %  
 ethanol (G.C.) . . . . . max. 0,1 %  
 aldehydes and ketones (as  
 C<sub>2</sub>H<sub>5</sub>CHO) . . . . . max. 0,001 %  
 acetaldehyde (CH<sub>3</sub>CHO) . . . . . max. 0,001 %  
 formaldehyde . . . . . max. 0,0001 %  
 substances reducing KMnO<sub>4</sub> . . . . . passes test  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
ME03041000	1 l	0
ME03042500	2,5 l	0

## Methanol-d4

ME0312 Methanol-d4, deuteration degree min. 99,8%, NMR spectroscopy grade, Spectrosol®



- Synonyms: Tetradeuteromethanol
- CD<sub>3</sub>OD
- M = 36,07 g/mol
- CAS [811-98-3]
- EINECS-No.: 212-378-6
- Density: 0,89 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -99 °C
- Boiling point: 65 °C
- Flash pt. 11 °C
- Ignition temp.: 455 °C
- LD 50 (oral, rat): 5628 mg/kg
- ADR: 3 FT1 II UN 1230
- IMDG: 3 II UN 1230
- IATA/ICAO: 3 II UN 1230
- GHS-signal word: Danger
- GHS-H sentences: H225 - H301 - H311 - H331 - H370

- GHS-P sentences: P210 - P301 + P310 - P303 + P361 + P353 - P361 - P405 - P501a
- Tariff number: 2845 90 10 00
- Applications: for nuclear magnetic resonance spectroscopy.

**Specifications:**

deuteration degree . . . . . min. 99,8 %  
 water (K.F., H<sub>2</sub>O + D<sub>2</sub>O) . . . . . max. 0,03 %  
 performance test  
 (NMR-spectrum) . . . . . passes test

Art. No.	Volume	Container
ME03120010	10 ml	↓
ME0312.750	x10x0,75ml	↓

## Methanol with 0,1% acetic acid

ME0329 Methanol with 0,1% acetic acid, LC-MS



- Flash pt. 11 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger
- GHS-H sentences: H225 - H331 - H370
- GHS-P sentences: P210 - P241 - P260 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, chromatography.

**Specifications:**

acetic acid content (v/v) . . . . . 0,093 - 0,107 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 magnesium (Mg) . . . . . max. 0,00005 %  
 potassium (K) . . . . . max. 0,00005 %  
 sodium (Na) . . . . . max. 0,0002 %  
 suitability for use in LC-MS . . . . . passes test  
 gradient grade (254 nm) maximum peak absorbance:-  
 max. 0,01 AU min. transmission/max. absorbance in  
 a 1,0 cm cell at

wavelength: T(%) A (AU)  
 210 nm. . . . . 5 % 1,301 AU  
 230 nm. . . . . 50 % 0,301 AU  
 254 nm. . . . . 95 % 0,022 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
ME03291000	1 l	0

## Methanol with 0,1% ammonium acetate

ME0330 Methanol with 0,1% ammonium acetate, LC-MS



- Flash pt. 11 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger
- GHS-H sentences: H225 - H331 - H370
- GHS-P sentences: P210 - P241 - P260 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, chromatography.

**Specifications:**

ammonium acetate content (w/v) . . . . . 0,093 - 0,107 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 magnesium (Mg) . . . . . max. 0,00005 %  
 potassium (K) . . . . . max. 0,00005 %  
 sodium (Na) . . . . . max. 0,0002 %  
 suitability for use in LC-MS . . . . . passes test  
 gradient grade (254 nm) maximum peak absorbance:-  
 max. 0,01 AU min. transmission/max. absorbance in  
 a 1,0 cm cell at

wavelength: T(%) A (AU)  
 210 nm. . . . . 5 % 1,301 AU  
 230 nm. . . . . 35 % 0,456 AU  
 254 nm. . . . . 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
ME03301000	1 l	0

## Methanol with 0,1% trifluoroacetic acid

ME0327 Methanol with 0,1% trifluoroacetic acid, LC-MS



- Density:
- Flash pt. 11 °C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger
- GHS-H sentences: H225 - H331 - H370
- GHS-P sentences: P210 - P241 - P260 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, chromatography.

**Specifications:**

trifluoroacetic acid content (v/v) . . . . . 0,093 - 0,107 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 magnesium (Mg) . . . . . max. 0,00005 %  
 potassium (K) . . . . . max. 0,00005 %  
 sodium (Na) . . . . . max. 0,0002 %  
 suitability for use in LC-MS . . . . . passes test  
 gradient grade (254 nm) maximum peak absorbance:-  
 0,01 AU min. transmission/max. absorbance in a 1,0  
 cm cell at

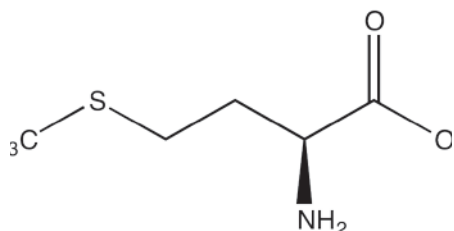
wavelength: T(%) A (AU)  
 210 nm. . . . . 5 % 1,301 AU  
 230 nm. . . . . 35 % 0,456 AU  
 254 nm. . . . . 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
ME03271000	1 l	0

# Methio

## L-Methionine

ME0635 L-Methionine, extra pure, Pharnpur®, Ph Eur, BP, USP



- Synonyms: 2-Amino-4-(methylthio)butyric acid, Acimethin
- $C_5H_{11}NO_2S$
- $M = 149,21$  g/mol
- CAS [63-68-3]
- EINECS-No.: 200-562-9
- Solub. in water: (20 °C): 48 g/l
- Melting point: 280 - 285 °C
- LD 50 (oral, rat): 10000 mg/kg
- Tariff number: 2930 40 10 00
- Applications: in biochemistry, for pharmaceuticals synthesizing, in food industry, synthesis of organic products, in pharma industry.

### Specifications:

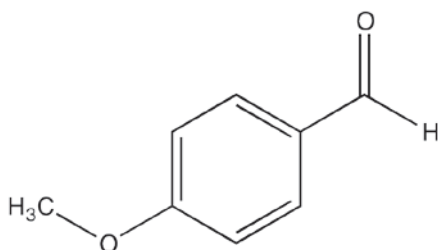
assay (titration with  $HClO_4$ , on dried sample) ..... 99 - 101 %  
 identity (IR-spectrum) ..... passes test  
 appearance of solution ..... clear and colourless  
 pH (2,5 %,  $H_2O$ ) ..... 5,5 - 6,5

specific rotation ( $[\alpha]_{20}^D$ ,  $c = 2$ ,  $HCl$ , 6 mol/l) ..... + 22,4 ° - + 24,7 °  
 chlorides (Cl) ..... max. 0,02 %  
 sulfates ( $SO_4$ ) ..... max. 0,03 %  
 ammonium ( $NH_4$ ) ..... max. 0,02 %  
 heavy metals (as Pb) ..... max. 0,0015 %  
 iron (Fe) ..... max. 0,003 %  
 ninhydrin-positive substances ..... max. 0,5 %  
 residue on ignition ..... max. 0,4 %  
 loss on drying (105 °C) ..... max. 0,3 %  
 related substances ..... max. 2,0 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
ME06350025	25 g	⊕
ME06350100	100 g	⊕
ME0635005P	5 kg	⊕

## 4-Methoxybenzaldehyde

AL0515 4-Methoxybenzaldehyde, extra pure



- Synonyms: Anisaldehyde
- $C_8H_8O_2$
- $M = 136,15$  g/mol
- CAS [123-11-5]
- EINECS-No.: 204-602-6
- Density: (25 °C) 1,12 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 2 g/l
- Melting point: 0 - 2 °C
- Boiling point: 247 - 249 °C
- Flash pt. 116 °C
- Ignition temp.: 220 °C
- Vapour pressure: (20 °C) < 1 hPa
- Refraction index: ( $n_{20}^D$ ) 1,57
- LD 50 (oral, rat): 3200 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302

- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2912 49 00 90
- Applications: perfumery, synthesis of organic products.

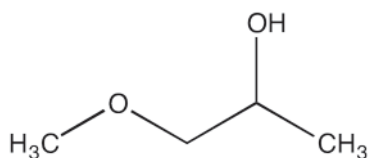
### Specifications:

assay (G.C.) ..... min. 98 %  
 identity (IR-spectrum) ..... passes test  
 free acid (as anisic acid) ..... max. 0,5 %  
 density (20°/4°) ..... 1,120 - 1,124

Art. No.	Volume	Container
AL05150250	250 ml	⊕

## 1-Methoxy-2-propanol

ME0665 1-Methoxy-2-propanol, synthesis grade



- Synonyms: 1,2-Propylene glycol 1-monomethyl ether
- $C_4H_{10}O_2$
- $M = 90,12$  g/mol
- CAS [107-98-2]
- EINECS-No.: 203-539-1
- Density: 0,92 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -97 °C
- Boiling point: 120 °C
- Flash pt. 31 °C
- Ignition temp.: 287 °C
- Vapour pressure: (20 °C) 11,5 hPa
- Refraction index: (20 °C, 589 nm) 1,4034
- LD 50 (oral, rat): 6000 mg/kg
- EC-Index-No.: 603-064-00-3
- ADR: 3 F1 III UN 3092
- IMDG: 3 III UN 3092
- IATA/ICAO: 3 III UN 3092

- GHS-signal word: Warning
- GHS-H sentences: H226 - H336
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2909 49 19 90
- Applications: synthesis of organic products, laboratory reagent.

### Specifications:

assay (G.C.) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/4°) ..... 0,920 - 0,922  
 2-methoxy-1-propanol (G.C.) ..... max. 0,5 %  
 peroxides (as  $H_2O_2$ ) ..... max. 0,005 %

Art. No.	Volume	Container
ME06651000	1 l	⊕

## Methyl acetate

AC0207 Methyl acetate, synthesis grade

- Synonyms: Acetic acid methyl ester
- $CH_3COOCH_3$
- $M = 74,08$  g/mol
- CAS [79-20-9]
- EINECS-No.: 201-185-2
- Density: 0,93 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 319 g/l
- Melting point: -98 °C
- Boiling point: 56 - 58 °C
- Flash pt. -10 °C
- Ignition temp.: 455 °C
- Vapour pressure: (20 °C) 217 hPa
- Refraction index: ( $n_{20}^D$ ) 1,3614

- Dielectric const.: (25 °C) 6,6
- LD 50 (oral, rat): 5000 mg/kg
- EC-Index-No.: 607-021-00-X
- ADR: 3 F1 II UN 1231
- IMDG: 3 II UN 1231
- IATA/ICAO: 3 II UN 1231
- GHS-signal word: Danger
- GHS-H sentences: H225 - H319 - EUH066 - H336
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2915 39 30 00
- Applications: synthesis of organic products, solvents, in the textile industry.

### Specifications:

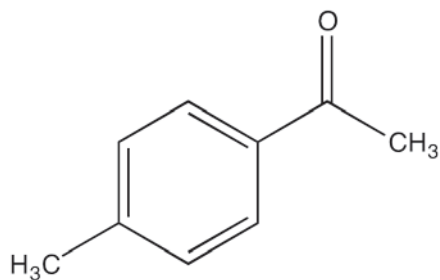
assay (G.C.) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/4°) ..... 0,932 - 0,934  
 residue on evaporation ..... max. 0,001 %  
 water (K.F.) ..... max. 0,1 %

Art. No.	Volume	Container
AC02071000	1 l	⊕
AC02072500	2,5 l	⊕



## 4-Methylacetophenone

## ME0320 4-Methylacetophenone, synthesis grade



- Synonyms: Methyl-4-acetophenone, Methyl p-tolyl ketone
- $C_9H_{10}O$
- $M = 134,18 \text{ g/mol}$
- CAS [122-00-9]
- EINECS-No.: 204-514-8
- Density:  $1,00 \text{ g/cm}^3$
- Solub. in water: (15 °C):  $0,37 \text{ g/l}$
- Melting point:  $28 \text{ °C}$
- Boiling point:  $226 \text{ °C}$
- Flash pt.  $92 \text{ °C}$
- Vapour pressure: (20 °C)  $0,14 \text{ hPa}$
- Refraction index: (n 25 °C/D)  $1,5313$
- LD 50 (oral, rat):  $1400 \text{ mg/kg}$
- GHS-signal word: Warning

- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2914 39 00 90
- Applications: synthesis of organic products.

**Specifications:**

assay (G.C.) . . . . .min. 96 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,004 - 1,005  
 residue on ignition . . . . .max. 0,05 %

Art. No.	Volume	Container
ME03200250	250 ml	0

## Methylamine, solution 40%

## ME0350 Methylamine, solution 40% in water, synthesis grade



- Synonyms: Aminomethane
- $CH_3NH_2$
- $M = 31,06 \text{ g/mol}$
- CAS [74-89-5]
- EINECS-No.: 200-820-0
- Density:  $0,90 \text{ g/cm}^3$
- Melting point:  $-38 \text{ °C}$
- Boiling point:  $48 \text{ °C}$
- Flash pt.  $-15 \text{ °C}$
- Ignition temp.:  $425 \text{ °C}$
- Vapour pressure: (25 °C)  $370 \text{ hPa}$
- LD 50 (oral, rat):  $698 \text{ mg/kg}$
- EC-Index-No.: 612-001-01-6
- ADR: 3 FC II UN 1235
- IMDG: 3 II UN 1235
- IATA/ICAO: 3 II UN 1235

- GHS-signal word: Danger
- GHS-H sentences: H224 - H318 - H335 - H315
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2921 11 00 00
- Applications: synthesis of organic products, cosmetics.

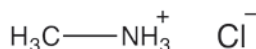
**Specifications:**

assay (acidimetric) . . . . .approx. 40 %

Art. No.	Volume	Container
ME03501000	1 l	0
ME03502500	2,5 l	0

## Methylammonium chloride

## ME0355 Methylammonium chloride, synthesis grade



- Synonyms: Methylamine hydrochloride
- $CH_3NH_3Cl$
- $M = 67,52 \text{ g/mol}$
- CAS [593-51-1]
- EINECS-No.: 209-795-0
- Solub. in water: (20 °C): soluble
- Melting point:  $228 - 231 \text{ °C}$  (sublimes)
- Boiling point: (20 hPa)  $225 - 230 \text{ °C}$
- LD 50 (oral, rat):  $1600 \text{ mg/kg}$
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a

- Tariff number: 2921 11 90 00
- Applications: laboratory reagent, synthesis of organic products.

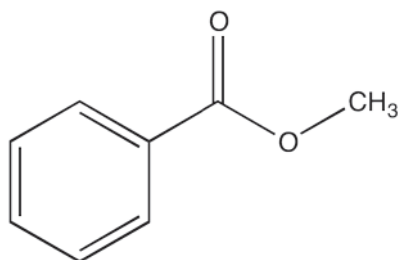
**Specifications:**

assay (argentometric) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,01 %

Art. No.	Volume	Container
ME03550250	250 g	0

## Methyl benzoate

## BE0210 Methyl benzoate, pure



- Synonyms: Benzoic acid methyl ester
- $C_8H_8O_2$
- $M = 136,15 \text{ g/mol}$
- CAS [93-58-3]
- EINECS-No.: 202-259-7
- Density:  $1,09 \text{ g/cm}^3$
- Solub. in water: (30 °C):  $0,157 \text{ g/l}$
- Melting point:  $-12 \text{ °C}$
- Boiling point:  $198 - 200 \text{ °C}$
- Flash pt.  $83 \text{ °C}$
- Ignition temp.:  $510 \text{ °C}$
- Vapour pressure: (20 °C)  $0,36 \text{ hPa}$
- Refraction index: (n 20 °C/D)  $1,5168$
- LD 50 (oral, rat):  $1177 \text{ mg/kg}$
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2916 31 00 00

- Applications: microscopy, perfumery, manufacturing of synthetic resins, in the rubber industry, disinfectant, solvents.

**Specifications:**

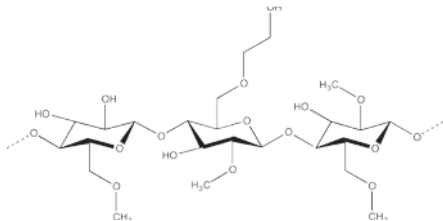
assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,086 - 1,088  
 free acid (as  $C_6H_5COOH$ ) . . . . .max. 0,2 %  
 arsenic (As) . . . . .max. 0,0001 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0005 %  
 residue on ignition . . . . .max. 0,05 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
BE02101000	1 l	0

# Methyl

## Methylcellulose

### ME0390 Methylcellulose, synthesis grade



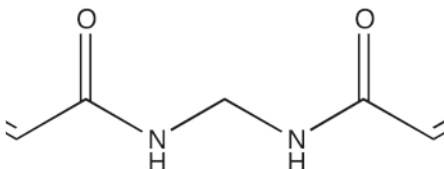
- Synonyms: Tylose
- CAS [9004-67-5]
- Solub. in water: (20 °C): soluble
- Ignition temp.: > 360 °C
- LD 50 (oral, rat): > 2000 mg/kg
- Tariff number: 3912 31 00 00
- Applications: in the paper industry, manufacture of adhesives, cosmetics, in food industry, in the pharmaceuticals industry.

#### Specifications:

assay .....min. 93 %  
viscosity (2 %, H<sub>2</sub>O) .....250 - 350 mP  
residue on ignition .....max.0,3 %  
loss on drying (105 °C) .....max. 7 %

Art. No.	Volume	Container
ME03900250	250 g	☐
ME03901000	1 kg	☐

## N,N'-Methylene-bis-acrylamide



- Synonyms: BIS, Diacrylamidomethane, N,N'-Methylenebis(acrylamide), MBA
- C<sub>7</sub>H<sub>10</sub>N<sub>2</sub>O<sub>2</sub>
- M = 154,17 g/mol
- CAS [110-26-9]
- EINECS-No.: 203-750-9
- Solub. in water: (20 °C): slightly soluble
- Melting point: > 300 °C
- LD 50 (oral, rat): 390 mg/kg

- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2924 19 00 20
- Applications: for electrophoresis, for biology.

### BIO090 N,N'-Methylene-bis-acrylamide, molecular biology grade

assay (acidimetric, after saponification)min. 99 %  
identity (IR-spectrum) .....passes test  
free acid (as acrylic acid) .....max. 0,02 %

DNases, RNases, Proteases ..... non detected  
water (K.F.) .....max. 0,5 %

Art. No.	Volume	Container
BIO0900025	25 g	☐

### BIO091 N,N'-Methylene-bis-acrylamide, electrophoresis grade

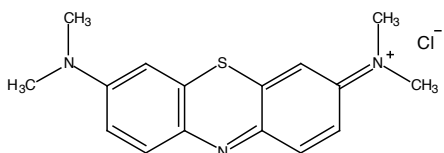
assay (acidimetric, after saponification) .....min. 99,5 %  
identity (IR-spectrum) .....passes test  
free acid (as acrylic acid) .....max. 0,05 %  
heavy metals (as Pb) .....max. 0,001 %

Absorptivity (A1%/1 cm; 290 nm; H<sub>2</sub>O) .....max. 0,2  
water (K.F.) .....max. 0,5 %

Art. No.	Volume	Container
BIO0910050	50 g	☐

## Methylene blue, carbol solution

### AZ0206 Methylene blue, carbol solution, for microscopy



- C<sub>16</sub>H<sub>18</sub>ClN<sub>3</sub>S
- M = 319,86 g/mol
- CAS [61-73-4]
- EINECS-No.: 200-515-2
- Density: 0,995 g/cm<sup>3</sup>
- GHS-signal word: Warning
- GHS-H sentences: H341 - H315 - H319
- GHS-P sentences: P280 - P281 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3822 00 00 00

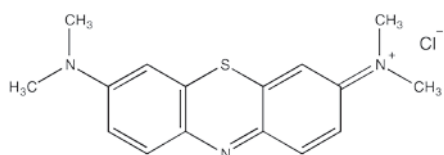
- Applications: microscopy.

#### Specifications:

suitability for microscopy ..... passes test

Art. No.	Volume	Container
AZ02060500	500 ml	☐
AZ02062500	2,5 l	☐

## Methylene blue, C.I. 52015



· xH<sub>2</sub>O (x = 2 - 3)

- Synonyms: 3,7-Bis(dimethylamino)phenothiazinium chloride, Solvent blue 8, Methylthionium chloride, Tetramethylthionine chloride
- C<sub>16</sub>H<sub>18</sub>ClN<sub>3</sub>S·xH<sub>2</sub>O (x= 2 - 3)
- M = 319,86 g/mol
- CAS [7220-79-3]
- Solub. in water: (20 °C): ~ 50 g/l
- Melting point: ~ 180 °C (decomposes)
- LD 50 (oral, rat): 1180 mg/kg (anhydrous substance)

- GHS-signal word: Danger
- GHS-H sentences: H301
- GHS-P sentences: P264 - P270 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 3204 13 00 90
- Applications: analytical chemistry, indicator, for electrophoresis.

### AZ0203 Methylene blue, C.I. 52015, extra pure

insoluble in C<sub>2</sub>H<sub>5</sub>OH 96% .....max. 0,2 %  
arsenic (As) .....max. 0,0005 %  
heavy metals (as Pb) .....max. 0,005 %  
zinc (Zn) .....max. 0,005 %  
residue on ignition .....max. 0,2 %  
loss on drying .....max.10 %

Art. No.	Volume	Container
AZ02030025	25 g	☐
AZ02030100	100 g	☐
AZ02030250	250 g	☐
AZ02030500	500 g	☐
AZ0203025P	25 kg	☐

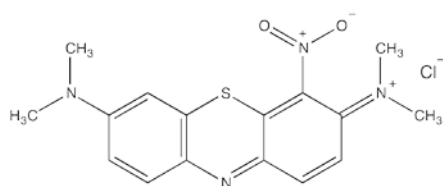
### AZ0200 Methylene blue, C.I. 52015, for microscopy

suitability for microscopy .....passes test  
loss on drying (110 °C) .....max.10 %

Art. No.	Volume	Container
AZ02000025	25 g	☐
AZ02000100	100 g	☐

## Methylene green, C.I. 52020

## VE0110 Methylene green, C.I. 52020, for microscopy



- Synonyms: Basic green 5
- $C_{16}H_{17}ClN_3O_2S$
- $M = 364,85 \text{ g/mol}$
- CAS [2679-01-8]
- EINECS-No.: 220-231-2
- GHS-signal word: Warning
- GHS-H sentences: H373 - H312 - H332
- GHS-P sentences: P260 - P261 - P280 - P322 - P304 + P340 - P501a

- Tariff number: 3204 90 00 00
- Applications: microscopy

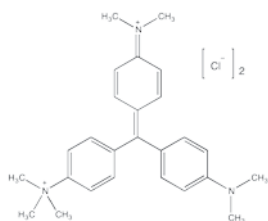
## Specifications:

suitability for microscopy . . . . . passes test

Art. No.	Volume	Container
VE01100005	5 g	0

## Methyl green, C.I. 42585

## VE0120 Methyl green, C.I. 42585, for microscopy



- $C_{26}H_{33}Cl_2N_3$
- $M = 458,47 \text{ g/mol}$
- CAS [7114-03-6]
- EINECS-No.: 230-415-4
- Solub. in water: (20 °C): 2,5 g/l
- Tariff number: 3204 13 00 90
- Applications: indicator, microscopy.

Absorptivity (A 1%/1 cm;  $\lambda$  max,  $H_2O$ ) . . . . 400 - 1000  
loss on drying (135 °C) . . . . . max. 10 %

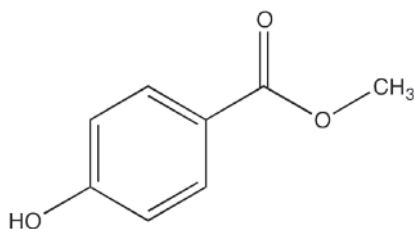
Art. No.	Volume	Container
VE01200005	5 g	0
VE01200025	25 g	0

## Specifications:

Absorption maximum (in  $H_2O$ ) . . . . . 630 - 635 nm

## Methyl 4-hydroxybenzoate

## ME0478 Methyl 4-hydroxybenzoate, extra pure, Pharmapur®, Ph Eur, BP, NF



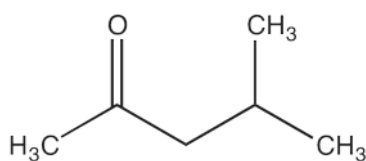
- Synonyms: Methylparaben, 4-Hydroxybenzoic acid methyl ester, PHB-Ester
- $C_8H_8O_3$
- $M = 152,15 \text{ g/mol}$
- CAS [99-76-3]
- EINECS-No.: 202-785-7
- Solub. in water: (20 °C): 2,5 g/l
- Melting point: 125 - 128 °C
- Boiling point: 270 - 280 °C
- Tariff number: 2918 29 30 00
- Applications: preservative agent (in food industry), cosmetics, in pharma industry.

## Specifications:

assay (HPLC) . . . . . 98 - 102 %  
identity (IR-spectrum) . . . . . passes test  
appearance of solution . . . . . passes test  
acidity . . . . . passes test  
related substances (HPLC) . . . . . passes test  
residue on ignition . . . . . max. 0,1 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
ME04780100	100 g	0
ME04780500	500 g	0

## Methyl isobutyl ketone



- Synonyms: Isobutyl methyl ketone, 4-Methyl-2-pentanone, Isopropylacetone, Hexone, MIBK
- $C_6H_{12}O$
- $M = 100,16 \text{ g/mol}$
- CAS [108-10-1]
- EINECS-No.: 203-550-1
- Density: 0,80 g/cm<sup>3</sup>
- Solub. in water: (20 °C): ~ 18 - 20 g/l
- Melting point: -84 °C
- Boiling point: 116 - 118 °C
- Flash pt. 14 °C
- Ignition temp.: 475 °C
- Vapour pressure: (20 °C) 20,2 hPa
- Dielectric const.: (20 °C) 13,1

- LD 50 (oral, rat): 2080 mg/kg
- EC-Index-No.: 606-004-00-4
- ADR: 3 F1 II UN 1245
- IMDG: 3 II UN 1245
- IATA/ICAO: 3 II UN 1245
- GHS-signal word: Danger
- GHS-H sentences: H225 - H332 - H319 - EUH066 - H335
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2914 13 00 00
- Applications: laboratory reagent, synthesis of organic products, solvents.

## ME0490 Methyl isobutyl ketone, synthesis grade



assay (G.C.) . . . . . min. 99 %  
identity (IR-spectrum) . . . . . passes test  
density (20°/4°) . . . . . 0,800 - 0,802  
residue on evaporation . . . . . max. 0,005 %  
water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
ME04901000	1l	0
ME04902500	2,5l	0
ME0490005L	5l	0
ME0490025A	25l	0

# Methyl

## ME0493 Methyl isobutyl ketone, reagent grade, ACS

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,800 - 0,802  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,002 meq/g  
 alkalinity . . . . . max. 0,001 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %

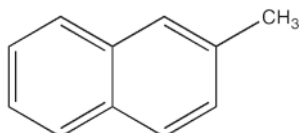
cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %

tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 substances reducing  $\text{KMnO}_4$  . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
ME04931000	1 l	0
ME04932500	2,5 l	0

## 2-Methylnaphthalene

### ME0514 2-Methylnaphthalene, synthesis grade



- $\text{C}_{11}\text{H}_{10}$
- $M = 142,20 \text{ g/mol}$
- CAS [91-57-6]
- EINECS-No.: 202-078-3
- Solub. in water: (20 °C): insoluble
- Melting point: 32 - 35 °C
- Boiling point: 242 °C
- Flash pt. 98 °C
- LD 50 (oral, rat): 1630 mg/kg
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning
- GHS-H sentences: H302 - H411

- GHS-P sentences: P273 - P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2902 90 90 00
- Applications: synthesis of organic products, laboratory reagent.

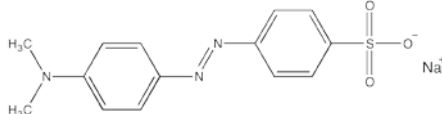
#### Specifications:

assay (G.C.) . . . . . min. 98 %  
 identity (IR-spectrum) . . . . . passes test

Art. No.	Volume	Container
ME05140250	250 g	0

## Methyl orange, C.I. 13025

### AN0073 Methyl orange, C.I. 13025, indicator, reagent grade, ACS



- Synonyms: Helianthine, 4-Dimethylaminoazobenzene-4'-sulfonic acid sodium salt, Gold orange
- $\text{C}_{14}\text{H}_{14}\text{N}_2\text{NaO}_3\text{S}$
- $M = 327,34 \text{ g/mol}$
- CAS [547-58-0]
- EINECS-No.: 208-925-3
- Solub. in water: (20 °C): ~ 5 g/l
- LD 50 (oral, rat): 60 mg/kg
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H301
- GHS-P sentences: P264 - P270 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2927 00 00 90
- Applications: indicator, analytical chemistry, laboratory reagent (alkali salts), manufacture of dyes (in the textile industry).

- Appearance: Orange crystalline powder

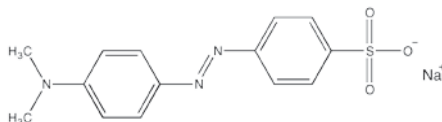
#### Specifications:

appearance of solution . . . . . passes test  
 pH range (pink to orange-yellow) . . . . . 3,2 - 4,4  
 visual transition interval . . . . . passes test  
 Absorption maximum  $\lambda_2$  (pH 4,4) . . . . . 467 - 471 nm  
 Absorption maximum  $\lambda_1$  (pH 3,1) . . . . . 501 - 504 nm  
 Absorptivity ( $A_{1\%}/1 \text{ cm}$ ;  $\lambda_1$ ; pH 3,1 on dried sample) . . . . . 1050 - 1150  
 Absorptivity ( $A_{1\%}/1 \text{ cm}$ ;  $\lambda_2$ ; pH 4,4 on dried sample) . . . . . 750 - 850  
 loss on drying (110 °C) . . . . . max. 5 %

Art. No.	Volume	Container
AN00730050	50 g	0
AN00730100	100 g	0
AN00730500	500 g	0

## Methyl orange, solution 0,04%

### AN0075 Methyl orange, solution 0,04%, indicator



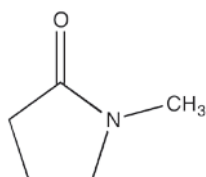
- Synonyms: Helianthine, 4- Dimethylaminoazobenzene-4'-sulfonic acid sodium salt, Gold orange
- $\text{C}_{14}\text{H}_{14}\text{N}_2\text{NaO}_3\text{S}$
- CAS [547-58-0]
- EINECS-No.: 208-925-3
- Density: ~ 1,0 g/cm<sup>3</sup>
- Tariff number: 2927 00 00 90
- Applications: analytical chemistry, laboratory reagent, indicator, for biology.

#### Specifications:

pH range (red-orange) . . . . . 3,1 - 4,4

Art. No.	Volume	Container
AN0075G100	100 ml	0
AN00750250	250 ml	0

## 1-Methyl-2-pyrrolidone



- Synonyms: N-Methylpyrrolidone, N-Methyl-2-pyrrolidone, NMP
- $\text{C}_5\text{H}_9\text{NO}$
- $M = 99,13 \text{ g/mol}$
- CAS [872-50-4]
- EINECS-No.: 212-828-1
- Density: 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -24 °C
- Boiling point: 202 °C
- Flash pt. 91 °C
- Ignition temp.: 245 °C

- Vapour pressure: (20 °C) 0,32 hPa
- Refraction index: (n 20 °C/D) 1,4684
- Dielectric const.: (25 °C) 33
- LD 50 (oral, rat): 3598 mg/kg
- EC-Index-No.: 606-021-00-7
- GHS-signal word: Danger
- GHS-H sentences: H360D - H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2933 79 00 90
- Applications: analytical chemistry, chromatography, synthesis of organic products.

**ME0494 1-Methyl-2-pyrrolidone, synthesis grade**

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,031 - 1,034  
 residue on ignition . . . . . max. 0,05 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
ME04941000	1 l	
ME04942500	2,5 l	
ME0494005L	5 l	
ME0494025L	25 l	
ME0494200L	200 l	

**ME0495 1-Methyl-2-pyrrolidone, extra pure, Pharpur®, Ph Eur, BP**

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,031 - 1,034  
 appearance of solution . . . . . clear and colourless  
 alkalinity . . . . . passes test

heavy metals (as Pb) . . . . . max. 0,001 %  
 related substances . . . . . passes test  
 water (K.F.) . . . . . max. 0,1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
ME04951000	1 l	
ME04952500	2,5 l	

**ME0496 1-Methyl-2-pyrrolidone, reagent grade, ACS**

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,031 - 1,034  
 colour (Hazen) . . . . . max. 50  
 free alkali (as CH<sub>3</sub>NH<sub>2</sub>) . . . . . max. 0,01 %  
 chlorides (Cl) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %

zinc (Zn) . . . . . max. 0,00001 %  
 residue on ignition . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
ME04961000	1 l	
ME04962500	2,5 l	
ME0496025A	25 l	

**ME0503 1-Methyl-2-pyrrolidone, GC head space grade**

assay (G.C.) . . . . . min. 99,99 %  
 refractive index n<sub>20</sub>/D . . . . . 1,468 - 1,471  
 water (K.F.) . . . . . max. 0,03 %  
 Packed under inert gas. Suitable for residual solvents analysis  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95. Class 1 solvents excluded by production process Class 2 and class 3 solvents likely to be present below following limits  
 dichloromethane . . . . . 0,6 mg/l  
 tert-Butyl methyl ether . . . . . 1 mg/l  
 acetone . . . . . 1 mg/l  
 methanol . . . . . 1 mg/l

tetrahydrofuran . . . . . 0,7 mg/l  
 n-Hexane . . . . . 0,3 mg/l  
 ethyl acetate . . . . . 1 mg/l  
 ethanol . . . . . 1 mg/l  
 cyclohexane . . . . . 1 mg/l  
 acetonitrile . . . . . 0,4 mg/l  
 2-propanol . . . . . 1 mg/l  
 isopropyl acetate . . . . . 1 mg/l  
 n-Propanol . . . . . 1 mg/l  
 n-Heptane . . . . . 1 mg/l  
 methylcyclohexane . . . . . 1 mg/l  
 1,4-Dioxane . . . . . 0,4 mg/l

toluene . . . . . 0,9 mg/l  
 pyridine . . . . . 1 mg/l  
 n-Butanol . . . . . 1 mg/l  
 butyl acetate . . . . . 1 mg/l  
 ethylbenzene . . . . . 1 mg/l  
 p-Xylene . . . . . 1 mg/l  
 m-Xylene . . . . . 1 mg/l  
 o-Xylene . . . . . 1 mg/l  
 benzene (G.C.) . . . . . absence

Art. No.	Volume	Container
ME05031000	1 l	

**ME0498 1-Methyl-2-pyrrolidone, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O)**

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,031 - 1,034  
 colour (Hazen) . . . . . max. 50  
 free alkali (as CH<sub>3</sub>NH<sub>2</sub>) . . . . . max. 0,01 %  
 chlorides (Cl) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %

zinc (Zn) . . . . . max. 0,00001 %  
 residue on ignition . . . . . max. 0,05 %  
 water (K.F.) . . . . . max. 0,005 %

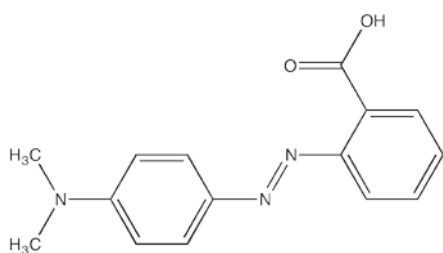
Art. No.	Volume	Container
ME04980100	100 ml	
ME04980500	500 ml	

**ME0590 1-Methyl-2-pyrrolidone, peptide synthesis grade**

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,031 - 1,034

methylamine . . . . . max. 0,01 %  
 water (K.F.) . . . . . max. 0,08 %

Art. No.	Volume	Container
ME05902500	2,5 l	

**Methyl red, C.I. 13020****R00150 Methyl red, C.I. 13020, indicator**

- Synonyms: 2-[(4-Dimethylamino)phenylazo]benzoic acid
- C<sub>15</sub>H<sub>15</sub>N<sub>3</sub>O<sub>2</sub>
- M = 269,31 g/mol
- CAS [493-52-7]
- EINECS-No.: 207-776-1
- Solub. in water (20 °C): slightly soluble
- Melting point: 178 - 182 °C
- Tariff number: 2927 00 00 90
- Applications: analytical chemistry, indicator.

**Specifications:**  
 pH range (red-violet to brownish - yellow) . . . . . 4,5 - 6,2

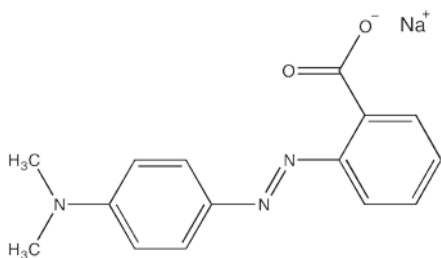
Absorption maximum λ<sub>1</sub> (pH 4,5) . . . . . 523 - 526 nm  
 Absorption maximum λ<sub>2</sub> (pH 6,2) . . . . . 427 - 437 nm  
 Absorptivity (A1%/1 cm; λ<sub>1</sub>; pH 4,5 on dried sample) . . . . . 1380 - 1480  
 Absorptivity (A1%/1 cm; λ<sub>2</sub>; pH 6,2 on dried sample) . . . . . 700 - 800  
 transition range acc. ACS . . . . . passes test  
 loss on drying (110 °C) . . . . . max. 5 %

Art. No.	Volume	Container
R001500010	10 g	
R001500100	100 g	

# Methyl

## Methyl red, sodium salt, C.I. 13020

### R00155 Methyl red, sodium salt, C.I. 13020, indicator, soluble in water



- Synonyms: 2-[[4-Dimethylamino]phenylazo]benzoic acid sodium salt
- $C_{15}H_{15}N_3NaO_2$
- $M = 291,29$  g/mol
- CAS [845-10-3]
- EINECS-No.: 212-682-9
- Solub. in water: (20 °C): ~ 800 g/l
- Tariff number: 2927 00 00 90
- Applications: analytical chemistry, indicator.

#### Specifications:

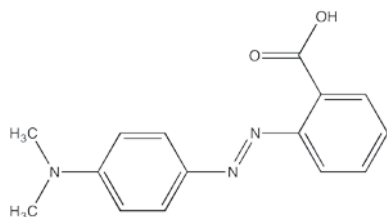
pH range (red-violet to brownish - yellow) . . . . . 4,5 - 6,2  
Absorption maximum  $\lambda_1$  (pH 4,5) . . . . . 523 - 526 nm  
Absorption maximum  $\lambda_2$  (pH 6,2) . . . . . 430 - 438 nm

Absorptivity (A1%/1 cm; I1; pH 4,5 on dried sample) . . . . . 1200 - 1400  
Absorptivity (A1%/1 cm; I2; pH 6,2 on dried sample) . . . . . 600 - 700  
transition range acc. ACS . . . . . passes test  
loss on drying (110 °C) . . . . . max. 5 %

Art. No.	Volume	Container
R001550010	10 g	0
R001550025	25 g	0
R001550100	100 g	0
R001551000	1 kg	0

## Methyl red, solution 0,1%

### R00156 Methyl red, solution 0,1%, indicator



- Synonyms: 2-[[4-Dimethylamino]phenylazo]benzoic acid
- $C_{15}H_{15}N_3O_2$
- $M = 269,31$  g/mol
- CAS [493-52-7]
- EINECS-No.: 207-776-1
- Density: ---
- Flash pt. 27 °C
- ADR: 3 F1 III UN 1993
- IMDG: 3 III UN 1993
- IATA/ICAO: 3 III UN 1993
- GHS-signal word: Warning
- GHS-H sentences: H226

- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2927 00 00 90
- Applications: analytical chemistry, laboratory reagent, indicator, for microbiology.

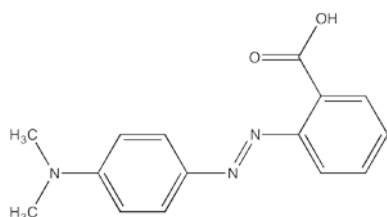
#### Specifications:

pH range (red to yellow) . . . . . 4,2 - 6,2

Art. No.	Volume	Container
R001560100	100 ml	0

## Methyl red, solution 2%

### RE0057 Methyl red, solution 2%, for microscopy



- Synonyms: 2-[[4-Dimethylamino]phenylazo]benzoic acid
- $C_{15}H_{15}N_3O_2$
- $M = 269,31$  g/mol
- CAS [493-52-7]
- EINECS-No.: 207-776-1
- Density:
- Solub. in water: (20 °C): miscible
- Flash pt. 22 °C
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993
- GHS-signal word: Danger

- GHS-H sentences: H225
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2927 00 00 90

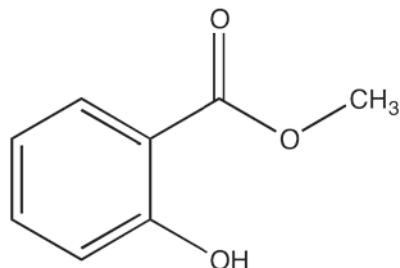
#### Specifications:

suitability for microscopy . . . . . passes test

Art. No.	Volume	Container
RE0057G100	100 ml	0
RE00571000	1 l	0

## Methyl salicylate

### SA0180 Methyl salicylate, extra pure, Pharpur®, Ph Eur, NF



- Synonyms: Wintergreen oil synthetic
- $C_8H_8O_2$
- $M = 152,15$  g/mol
- CAS [119-36-8]
- EINECS-No.: 204-317-7
- Density: 1,18 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: -8 °C
- Boiling point: 224 °C
- Flash pt. 96 °C
- Ignition temp.: 450 °C
- Vapour pressure: (20 °C) ~ 0,13 hPa
- LD 50 (oral, rat): 887 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302 - H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P301 + P312 - P337 + P313 - P501a
- Tariff number: 2918 23 10 00

- Applications: synthesis of organic products, perfumery, in food industry, in pharma industry.

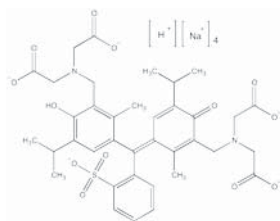
#### Specifications:

assay (acidimetric) . . . . . 99 - 100,5 %  
identification . . . . . passes test  
density (20°/20°) . . . . . 1,180 - 1,186  
refractive index n<sub>20</sub>/D . . . . . 1,535 - 1,538  
acidity . . . . . passes test  
specific rotation ( $[\alpha]_{25}^D$ ) . . . . . inactive  
appearance of solution . . . . . passes test  
solubility in ethanol 70 % . . . . . passes test  
heavy metals (as Pb) . . . . . max. 0,002 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
SA01801000	1 l	0

## Methylthymol blue, tetrasodium salt

## AZ0205 Methylthymol blue, tetrasodium salt, indicator



- Synonyms: MTB; 3,3'-Bis[N,N-di(carboxymethyl)aminomethyl]thymolsulfonephthalein, sodium salt
- $C_{37}H_{40}N_4Na_4O_{13}S$
- $M = 844,76 \text{ g/mol}$
- CAS [1945-77-3]
- EINECS-No.: 217-743-3
- Solub. in water: (20 °C): ~ 460 g/l
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, indicator, titrant in volumetric analysis (metals).

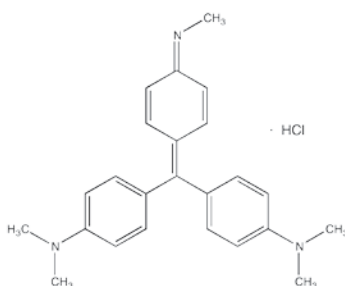
**Specifications:**

Absorption maximum  $\lambda$  (in ethanol) . . . . 430 - 440 nm  
 Absorptivity (A1%/1 cm;  $\lambda$  max.) . . . . . 90 - 110  
 insoluble in water . . . . . passes test  
 suitability as indicator . . . . . passes test  
 loss on drying (135 °C) . . . . . max. 10 %

Art. No.	Volume	Container
AZ02050001	1 g	0
AZ02050005	5 g	0

## Methyl violet, C.I. 42535

## VI0070 Methyl violet, C.I. 42535, for microscopy



- Synonyms: Methylrosaniline
- $C_{24}H_{27}N_3 \cdot HCl$
- CAS [8004-87-3]
- EINECS-No.: 208-953-6
- Solub. in water: (25 °C): 30 g/l
- LD 50 (oral, rat): 460 - 680 mg/kg
- EC-Index-No.: 612-204-00-2
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Danger
- GHS-H sentences: H318 - H351 - H410 - H302
- GHS-P sentences: P280 - P281 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3204 13 00 90

- Applications: indicator, microscopy.

**Specifications:**

Absorption maximum (in ethanol 50 %) . . . . . 583 - 587 nm  
 Absorptivity (A1%/1 cm;  $\lambda$  max; ethanol 50 %) . . . . . 1600 - 1800  
 loss on drying (110 °C) . . . . . max. 8 %

Art. No.	Volume	Container
VI00700025	25 g	0
VI00700100	100 g	0
VI00700250	250 g	0

## Millon's reagent

## RE0040 Millon's reagent



- Density: 1,358 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 CT1 III UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- GHS-signal word: Danger
- GHS-H sentences: H300 - H310 - H330 - H314 - H373 - H410

- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P361 - P405 - P501a -
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry; for determination of: tyrosine, albumin, phenols.

**Specifications:**

suitability for determination of tyrosine, phenol and albuminoids . . . . . passes test

Art. No.	Volume	Container
RE00400100	100 ml	0

## Mixed indicator I

IN0040 Mixed indicator I, for determination of sulfurous gas (SO<sub>2</sub>) according to Paul

- Density: ~ 0,93 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 3 F1 III UN 1993
- IMDG: 3 III UN 1993
- IATA/ICAO: 3 III UN 1993
- GHS-signal word: Warning
- GHS-H sentences: H226

- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 3822 00 00 00

methylene blue . . . . . 500 mg  
 ethanol . . . . . 500 ml  
 water to make 1 liter

**Specifications:**

composition of 1 liter:  
 methyl red . . . . . 1000 mg

Art. No.	Volume	Container
IN0040G100	100 ml	0

## Mixture o-cresol/dichloromethane, 70:30

## ME0512 Mixture o-cresol/dichloromethane, 70:30 v/v



- Density: 1,13 g/cm<sup>3</sup>
- Refraction index: (n 20 °C/D) 1,519
- LD 50 (oral, rat): 121 mg/kg (o-cresol)
- 1600 mg/kg (dichloromethane)
- ADR: 6.1 TC1 II UN 2927
- IMDG: 6.1 II UN 2927
- IATA/ICAO: 6.1 II UN 2927
- GHS-signal word: Danger

- GHS-H sentences: H301 - H314 - H351 - H312
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3814 00 90 90
- Applications: solvent for industrial uses.

dichloromethane. . . . . 300 ml  
 m-cresol, p-cresol . . . . . max. 0,5 %  
 phenol . . . . . max. 0,3 %  
 residue on ignition . . . . . max. 0,005 %  
 water (K.F.) . . . . . max. 0,1 %

**Specifications:**

mixture according to:  
 o-cresol . . . . . 700 ml

Art. No.	Volume	Container
ME05122500	2,5 kg	0

# Mixtur

## Mixture n-hexane/tert-butyl methyl ether, 80:20

### ME0605 Mixture n-hexane/tert-butyl methyl ether, 80:20 v/v, reagent grade



- Density: ~ 0,67 g/cm<sup>3</sup>
- Flash pt. -23 °C
- LD 50 (oral, rat): 28710 mg/kg
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H361f - H373 - H315 - H336 - H411
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3814 00 90 90
- Applications: solvent for industrial uses.

n-hexane 96% . . . . . 800 ml  
 tert-Butyl methyl ether . . . . . 200 ml  
 free acid (as CH<sub>3</sub>COOH) . . . . .max. 0,002 %  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %

tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) . . . . .max. 0,01 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . .max. 0,0005 %  
 thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . .max. 0,0001 %  
 sulfur compounds (as S) . . . . .max. 0,005 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,02 %

**Specifications:**  
 mixture according to:

Art. No.	Volume	Container
ME06052500	2,5 l	0

## Mixture phenol/1,2-dichlorobenzene

### ME0710 Mixture phenol/1,2-dichlorobenzene, 1:1 w/w, extra pure



- Density: 1,17 g/cm<sup>3</sup>
- ADR: 6.1 TC1 II UN 2927
- IMDG: 6.1 II UN 2927
- IATA/ICAO: 6.1 II UN 2927
- GHS-signal word: Danger
- GHS-H sentences: H331 - H314 - H341 - H373 - H410 - H302 - H312 - H335
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 3814 00 90 90
- Applications: in the textile industry (manufacturing of: synthetic fibers).

**Specifications:**  
 density (25°/25°) . . . . .1,1733 - 1,1813  
 chlorides (Cl) . . . . .max. 0,0001 %  
 copper (Cu) . . . . .max. 0,0001 %  
 heavy metals (as Pb) . . . . .max. 0,0001 %

iron (Fe) . . . . .max. 0,0001 %  
 nickel (Ni) . . . . .max. 0,0001 %  
 residue on ignition . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,05 %

Art. No.	Volume	Container
ME07102500	2,5 kg	0
ME0710005P	5 kg	0

## Mixture T.A.N.

### ME0790 Mixture T.A.N. (toluene/isopropyl alcohol/water), according to ASTM D974



- Density: 0,81 g/cm<sup>3</sup>
- Flash pt. 9 °C
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H361 - H373 - H315 - H319 - H336
- GHS-P sentences: P210 - P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a

- Tariff number: 3814 00 90 90
- Applications: solvent for industrial uses.

**Specifications:**  
 mixture according to:  
 toluene . . . . . 500 ml  
 isopropyl alcohol . . . . . 495 ml  
 water . . . . . 5 ml  
 free acid (as C<sub>2</sub>H<sub>3</sub>COOH) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,0001 %  
 heavy metals (as Pb) . . . . .max. 0,0002 %

substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . .passes test  
 residue on evaporation . . . . .max. 0,001 %

Art. No.	Volume	Container
ME07901000	1 l	0
ME07902500	2,5 l	0
ME0790025A	25 l	0
ME0790025P	25 l	0
ME0790025S	25 l	0

## Molecular sieve

- Synonyms: Sodium aluminium silicate
- Solub. in water: (20 °C): insoluble
- LD 50 (oral, rat): > 5110 mg/kg
- Tariff number: 3824 90 15 90
- Applications: analytical chemistry, stabilizer, complexant agent.

### TA0140 Molecular sieve 3 Å, pearl-shaped, 2 - 3 mm

pore diameter . . . . . 3 Å

Art. No.	Volume	Container
TA01400250	250 g	0
TA01401000	1 kg	0

### TA0141 Molecular sieve 4 Å, pearl-shaped, 2 - 3 mm

pore diameter . . . . . 4 Å

Art. No.	Volume	Container
TA01410250	250 g	0
TA01411000	1 kg	0

### TA0142 Molecular sieve 5 Å, pearl-shaped, 2 - 3 mm

pore diameter . . . . . 5 Å

Art. No.	Volume	Container
TA01421000	1 kg	0



## Molybdenum

## M00025 Molybdenum, powder, synthesis grade

- Mo
- M = 95,94 g/mol
- CAS [7439-98-7]
- EINECS-No.: 231-107-2
- Solub. in water: (20 °C): insoluble
- Melting point: ~ 2620 °C

- Tariff number: 8102 10 00 00
- Applications: laboratory reagent, in building materials, in the electronic industry, in lubricant compositions, metal alloys, catalyst (in the petroleum industry).

## Specifications:

assay .....min. 99 %

Art. No.	Volume	Container
M000250100	100 g	0

## Molybdenum(VI) oxide

## M00050 Molybdenum(VI) oxide, extra pure

- Synonyms: Molybdic acid anhydride, Molybdenum trioxide
- MoO<sub>3</sub>
- M = 143,94 g/mol
- CAS [1313-27-5]
- EINECS-No.: 215-204-7
- Solub. in water: (20 °C): ~ 0,5 g/l
- Melting point: 795 °C
- Boiling point: 1155 °C
- LD 50 (oral, rat): 2689 mg/kg
- EC-Index-No.: 042-001-00-9
- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288

- IATA/ICAO: 6.1 III UN 3288
- GHS-signal word: Warning
- GHS-H sentences: H351 - H319 - H335
- GHS-P sentences: P261 - P280 - P281 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2825 70 00 00
- Applications: analytical chemistry, laboratory reagent.
- Appearance: Yellow to green solid

## Specifications:

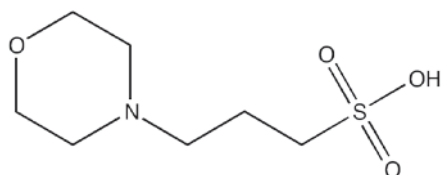
assay (complexometric) .....min. 99 %  
insoluble in NH<sub>4</sub>OH .....max. 0,05 %  
chlorides (Cl) .....max. 0,005 %

phosphates, arseniates,  
silicates (as PO<sub>4</sub>) .....max. 0,002 %  
sulfates (SO<sub>4</sub>) .....max. 0,01 %  
ammonium (NH<sub>4</sub>) .....max. 0,01 %  
copper (Cu) .....max. 0,002 %  
iron (Fe) .....max. 0,002 %  
lead (Pb) .....max. 0,002 %  
nickel (Ni) .....max. 0,002 %

Art. No.	Volume	Container
M000500250	250 g	0

## MOPS

## M00070 MOPS, molecular biology grade



- Synonyms: 3-(N-Morpholino)propanesulfonic acid
- C<sub>7</sub>H<sub>13</sub>NO<sub>3</sub>S
- M = 209,26 g/mol
- CAS [1132-61-2]
- EINECS-No.: 214-478-5
- Solub. in water: (20 °C): 1000 g/l
- Melting point: 277 - 282 °C
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2934 99 90 90
- Applications: in buffer solutions (for biology), laboratory reagent.

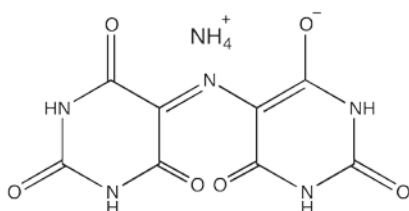
## Specifications:

assay (potentiometric) .....min. 99 %  
identity (IR-spectrum) .....passes test  
absorbance of an aqueous solution  
0,1 M in a 1 cm cell at 260 nm .....max. 0,05 AU  
absorbance of an aqueous solution  
0,1 M in a 1 cm cell at 280 nm .....max. 0,05 AU  
heavy metals (as Pb) .....max. 0,0005 %  
DNases, RNases, Proteases ..... non detected

Art. No.	Volume	Container
M000700100	100 g	0
M000700500	500 g	0

## Murexide

## MU00020 Murexide, indicator for metal titration



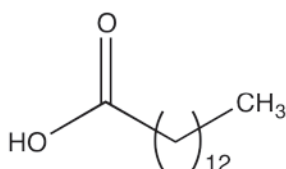
- Synonyms: Ammonium purpurate, acid
- C<sub>8</sub>H<sub>4</sub>N<sub>2</sub>O<sub>6</sub>
- M = 284,19 g/mol
- CAS [3051-09-0]
- EINECS-No.: 221-266-6
- Solub. in water: (20 °C): ~ 1 g/l
- Tariff number: 2933 54 00 00
- Applications: analytical chemistry, indicator (for determination of: metals), complexant agent.

## Specifications:

Absorption maximum λ (in H<sub>2</sub>O) ..... 517 - 523 nm  
Absorptivity (A1%/1 cm; λ  
max.) ..... 375 - 500  
suitability as complexometric indicator passes test  
loss on drying ..... max. 10 %

Art. No.	Volume	Container
MU00200005	5 g	0
MU00200025	25 g	0

## Myristic acid



- Synonyms: Tetradecanoic acid
- C<sub>14</sub>H<sub>28</sub>O<sub>2</sub>
- M = 228,38 g/mol
- CAS [544-63-8]
- EINECS-No.: 208-875-2
- Solub. in water: (20 °C): insoluble
- Melting point: 51 - 54 °C
- Boiling point: (133 hPa) 250 °C
- Vapour pressure: (20 °C) 10000 mg/kg

- Tariff number: 2915 90 80 90
- Applications: synthesis of organic products, in lubricant compositions, cosmetics, in the pharmaceuticals industry.

## AC1477 Myristic acid, synthesis grade

assay (G.C.) .....min. 98 %  
identity (IR-spectrum) .....passes test  
residue on ignition .....max. 0,1 %

Art. No.	Volume	Container
AC14771000	1kg	0

# Myrist

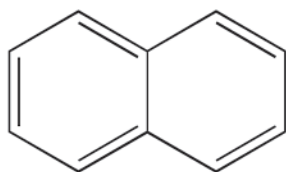
## AC1482 Myristic acid, extra pure, Reag. Ph Eur

assay (G.C.) . . . . .min. 98 %      residue on ignition . . . . .max. 0,05 %  
identity (IR-spectrum) . . . . .passes test  
melting range . . . . .57 - 59 °C

Art. No.	Volume	Container
AC14820100	100 g	0

- A
- B
- C
- D
- E
- F
- G
- H
- I
- J
- K
- L
- M**
- N
- O
- P
- Q
- R
- S
- T
- U
- V
- W
- X
- Y
- Z

## Naphthalene



- Synonyms: Naphthalin
- $C_{10}H_8$
- M = 128,16 g/mol
- CAS [91-20-3]
- EINECS-No.: 202-049-5
- Solub. in water: (20 °C): 0,3 g/l
- Melting point: 79 - 82 °C
- Boiling point: 218 °C
- Flash pt. 80 °C
- Ignition temp.: 540 °C
- Vapour pressure: (20 °C) 0,066 hPa
- LD 50 (oral, rat): > 2000 mg/kg

- EC-Index-No.: 601-052-00-2
- ADR: 4.1 F1 III UN 1334
- IMDG: 4.1 III UN 1334
- IATA/ICAO: 4.1 III UN 1334
- GHS-signal word: Warning
- GHS-H sentences: H351 - H410 - H302
- GHS-P sentences: P281 - P273 - P301 + P312 - P308 + P313 - P405 - P501a
- Tariff number: 2902 90 00 00
- Applications: synthesis of organic products, manufacture of dyes, manufacturing of synthetic resins, for pharmaceuticals synthesizing.

## NA0024 Naphthalene, pellets approx. 3 - 4 mm, synthesis grade



assay (G.C.) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test  
residue on ignition . . . . .max. 0,02 %  
water (K.F.) . . . . .max. 0,3 %

Art. No.	Volume	Container
NA00240500	500 g	P
NA00241000	1 kg	P
NA0024005P	5 kg	P
NA0024025P	25 kg	P

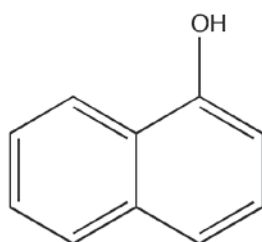
## NA0026 Naphthalene, pellets approx. 3 - 4 mm, reagent grade



assay (G.C.) . . . . .min. 99,5 %  
identity (IR-spectrum) . . . . .passes test  
residue on ignition . . . . .max. 0,01 %  
water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
NA00261000	1 kg	P

## 1-Naphthol



- Synonyms: 1-Hydroxynaphthalene
- $C_{10}H_8O$
- M = 144,17 g/mol
- CAS [90-15-3]
- EINECS-No.: 201-969-4
- Solub. in water: (20 °C): ~ 0,1 g/l
- Melting point: 95 - 97 °C
- Boiling point: ~ 288 °C
- Flash pt. 125 °C
- Ignition temp.: 510 °C
- Vapour pressure: (94 °C) 1,3 hPa
- LD 50 (oral, rat): 275 mg/kg

- EC-Index-No.: 604-029-00-5
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H318 - H302 - H312 - H335 - H315
- GHS-P sentences: P261 - P305 + P351 + P338 - P310 - P321 - P405 - P501a
- Tariff number: 2907 15 10 00
- Applications: analytical chemistry, synthesis of organic products, manufacture of dyes and perfumery.

## NA0110 1-Naphthol, synthesis grade



assay (G.C.) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test  
residue on ignition . . . . .max. 0,1 %  
water (K.F.) . . . . .max. 0,5 %

Art. No.	Volume	Container
NA01100250	250 g	P
NA01101000	1 kg	P

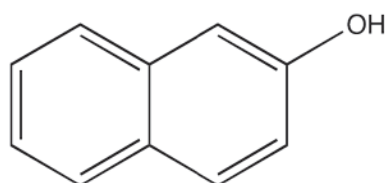
## NA0112 1-Naphthol, reagent grade, Reag. Ph Eur



assay (G.C.) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test  
appearance of solution . . . . .passes test  
chlorides (Cl) . . . . .max. 0,005 %  
heavy metals (as Pb) . . . . .max. 0,001 %  
iron (Fe) . . . . .max. 0,001 %  
naphthalene (G.C.) . . . . .max. 0,2 %  
2-naphthol (G.C.) . . . . .max. 0,2 %  
residue on ignition . . . . .max. 0,05 %  
water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
NA01120250	250 g	P

## 2-Naphthol



- Synonyms: 2-Hydroxynaphthalene
- $C_{10}H_8O$
- M = 144,17 g/mol
- CAS [135-19-3]
- EINECS-No.: 205-182-7
- Solub. in water: (20 °C): 1 g/l
- Melting point: 121,6 °C
- Boiling point: 285 °C
- Flash pt. 153 °C
- Vapour pressure: (30 °C) < 0,1 hPa
- LD 50 (oral, rat): 1960 mg/kg
- EC-Index-No.: 604-007-00-5

- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning
- GHS-H sentences: H400 - H302 - H332
- GHS-P sentences: P261 - P273 - P301 + P312 - P304 + P340 - P312 - P501a
- Tariff number: 2907 15 90 00
- Applications: analytical chemistry, for pharmaceuticals synthesizing, manufacture of dyes, perfumery, in the rubber industry.

## NA0116 2-Naphthol, synthesis grade



assay (G.C.) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test  
residue on ignition . . . . .max. 0,1 %  
water (K.F.) . . . . .max. 0,5 %

Art. No.	Volume	Container
NA01160250	250 g	P

# Naphth

## NA0117 2-Naphthol, reagent grade

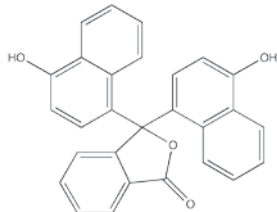
assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 appearance of solution . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,005 %  
 heavy metals (as Pb) . . . . .max. 0,001 %

iron (Fe) . . . . .max. 0,001 %  
 naphthalene (G.C.) . . . . .max. 0,1 %  
 1-naphthol (G.C.) . . . . .max. 0,1 %  
 residue on ignition . . . . .max. 0,05 %  
 water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
NA01170100	100 g	⊖

## 1-Naphtholphthalein

### NA0135 1-Naphtholphthalein, indicator



- Synonyms: 3,3-Bis(4-hydroxynaphthalenyl)-1(3H)-isobenzofuranone, p-α-Naphtholphthalein
- C<sub>28</sub>H<sub>18</sub>O<sub>4</sub>
- M = 418,45 g/mol
- CAS [596-01-0]
- EINECS-No.: 209-875-5
- Solub. in water: (20 °C): almost insoluble
- Melting point: 253 - 255 °C
- Tariff number: 3204 19 00 90

- Applications: analytical chemistry, indicator.

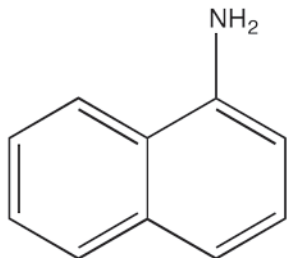
#### Specifications:

pH range (colourless-reddish to blue green) . . . . . 7,3 - 8,7

Art. No.	Volume	Container
NA01350001	1 g	⊖

## 1-Naphthylamine

### NA0047 1-Naphthylamine, synthesis grade



- Synonyms: 1-Aminonaphthalene
- C<sub>10</sub>H<sub>9</sub>N
- M = 143,19 g/mol
- CAS [134-32-7]
- EINECS-No.: 205-138-7
- Solub. in water: (20 °C): 2 g/l
- Melting point: 48 - 50 °C
- Boiling point: (16 hPa) 160 °C
- Flash pt. 157 °C
- Ignition temp.: 460 °C
- Vapour pressure: (20 °C) 0,003 hPa
- LD 50 (oral, rat): 680 mg/kg
- EC-Index-No.: 612-020-00-2
- ADR: 6.1 T2 III UN 2077
- IMDG: 6.1 III UN 2077
- IATA/ICAO: 6.1 III UN 2077
- GHS-signal word: Warning

- GHS-H sentences: H302 - H411
- GHS-P sentences: P273 - P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2921 45 00 40
- Applications: synthesis of organic products, manufacture of dyes.
- Appearance: White to brown solid

#### Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 water (K.F.) . . . . .max. 0,5 %

Art. No.	Volume	Container
NA00471000	1 kg	⊖

## Nessler's reagent

### RE0050 Nessler's reagent

- Density: 1,16 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 CT1 II UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- GHS-signal word: Danger

- GHS-H sentences: H314 - H373 - H302 - H312 - H332 - H411
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, nitrogen determinations (ammonium).

#### Specifications:

suitability for determination of ammonia and ammonium salts . . . . .passes test

Art. No.	Volume	Container
RE00500250	250 ml	⊖

## Neutral detergent fibre reagent

### RE0015 Neutral detergent fibre reagent, NDF according to Van Soest

- Density: 1,016 g/cm<sup>3</sup>
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00
- Applications: for neutral detergent fibre determination in animal feed.

#### Specifications:

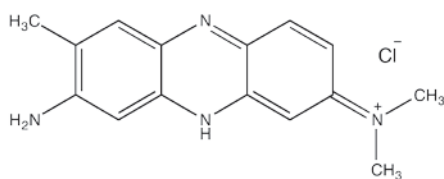
composition (in 1 l. distilled water):  
 EDTA . . . . . 18,61 g  
 sodium lauryl sulfate . . . . . 30,00 g  
 sodium tetraborate . . . . . 6,81 g  
 di-sodium hydrogen phosphate . . . . . 4,56 g

triethylene glycol . . . . . 10 ml

Art. No.	Volume	Container
RE00151000	1 l	⊖
RE0015005P	5 l	⊖

## Neutral red, C.I. 50040

### R00190 Neutral red, C.I. 50040, for microscopy and indicator



- Synonyms: Toluylene red, Basic Red 5
- C<sub>15</sub>H<sub>17</sub>ClN<sub>2</sub>
- M = 288,78 g/mol
- CAS [553-24-2]
- EINECS-No.: 209-035-8
- Solub. in water: (25 °C): 50 g/l
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 3204 13 00 90
- Applications: indicator, microscopy.

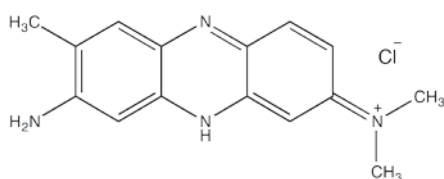
#### Specifications:

assay (spectrophotometric) . . . . .min. 76 %  
 Absorption maximum λ max  
 (in ethanol 50 %) . . . . .539 - 544 nm  
 Absorptivity (A1%/1 cm; λ max;  
 0,0005 %, ethanol 50 %) . . . . . 1395 - 1550  
 related substances (TLC) . . . . .passes test  
 suitability for microscopy . . . . .passes test  
 loss on drying (110 °C) . . . . .max. 10 %

Art. No.	Volume	Container
R001900010	10 g	⊖
R001900025	25 g	⊖

## Neutral red, solution 0,1%, indicator

## R00191 Neutral red, solution 0,1%, indicator



- $C_{15}H_{17}ClN_4$
- $M = 288,78$  g/mol
- CAS [553-24-2]
- EINECS-No.: 209-035-8
- Flash pt. 44 °C
- ADR: 3 F1 III UN 1993
- IMDG: 3 III UN 1993
- IATA/ICAO: 3 III UN 1993
- GHS-signal word: Warning
- GHS-H sentences: H226
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a

- Tariff number: 3204 13 00 90
- Applications: analytical chemistry, laboratory reagent, indicator.

## Specifications:

pH range (red to yellow-orange) ..... 6,8 - 8,0

Art. No.	Volume	Container
R001910100	100 ml	0

## Nickel

## NI0132 Nickel, powder, extra pure

- Ni
- $M = 58,71$  g/mol
- CAS [7440-02-0]
- EINECS-No.: 231-111-4
- Solub. in water: (20 °C): insoluble
- Melting point: 1453 °C
- Boiling point: 2832 °C
- LD 50 (oral, rat): > 9000 mg/kg
- EC-Index-No.: 028-002-00-7

- GHS-signal word: Danger
- GHS-H sentences: H372 - H351 - H317
- GHS-P sentences: P260 - P261 - P280 - P321 - P405 - P501a
- Tariff number: 7504 00 00 00
- Applications: metal alloys, electrolyte for batteries, in the electronic industry, catalyst (synthesis of organic products), manufacture of glass.

## Specifications:

assay ..... min. 99,8 %  
sulphur (S) ..... max. 0,001 %  
iron (Fe) ..... max. 0,005 %

Art. No.	Volume	Container
NI01320250	250 g	0
NI01321000	1 kg	0

## Nickel(II) chloride hexahydrate

- Synonyms: Nickel dichloride hexahydrate
- $NiCl_2 \cdot 6H_2O$
- $M = 237,71$  g/mol
- CAS [7791-20-0]
- EINECS-No.: 231-743-0
- Solub. in water: (20 °C): 553 g/l
- Melting point: 140 °C (release of crystalline water)

- Vapour pressure: (671 °C) 1,3 hPa (anhydrous substance)
- LD 50 (oral, rat): 105 mg/kg
- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288
- IATA/ICAO: 6.1 III UN 3288
- GHS-signal word: Danger

- GHS-H sentences: H301 - H410 - H317
- GHS-P sentences: P261 - P280 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2827 35 00 00
- Applications: analytical chemistry, laboratory reagent, manufacturing of inks.

## NI0138 Nickel(II) chloride hexahydrate, extra pure

assay (complexometric) ..... min. 98 %  
insoluble in water ..... max. 0,025 %  
pH (5 %,  $H_2O$ ) ..... min. 3  
sulfates ( $SO_4$ ) ..... max. 0,01 %  
calcium (Ca) ..... max. 0,03 %  
copper (Cu) ..... max. 0,01 %  
iron (Fe) ..... max. 0,005 %  
lead (Pb) ..... max. 0,002 %  
zinc (Zn) ..... max. 0,05 %  
non precipitable with ( $NH_4$ )<sub>2</sub>S  
(as  $SO_4$ ) ..... max. 0,3 %

Art. No.	Volume	Container
NI01380250	250 g	0
NI01381000	1 kg	0
NI0138005P	5 kg	0

## NI0139 Nickel(II) chloride hexahydrate, reagent grade

assay (complexometric) ..... min. 98,5 %  
identity ..... passes test  
insoluble in water ..... max. 0,005 %  
pH (5 %,  $H_2O$ ) ..... 3,5 - 6,5  
sulfates ( $SO_4$ ) ..... max. 0,005 %  
calcium (Ca) ..... max. 0,005 %  
cobalt (Co) ..... max. 0,005 %  
copper (Cu) ..... max. 0,001 %  
iron (Fe) ..... max. 0,001 %  
lead (Pb) ..... max. 0,002 %  
sodium (Na) ..... max. 0,01 %  
zinc (Zn) ..... max. 0,001 %

Art. No.	Volume	Container
NI01390250	250 g	0
NI01391000	1 kg	0
NI0139005P	5 kg	0

## Nickel(II) nitrate hexahydrate

## NI0150 Nickel(II) nitrate hexahydrate, extra pure

- $Ni(NO_3)_2 \cdot 6H_2O$
- $M = 290,81$  g/mol
- CAS [13478-00-7]
- EINECS-No.: 236-068-5
- Solub. in water: (20 °C): soluble
- Melting point: 56,7 °C
- LD 50 (oral, rat): 1620 mg/kg
- ADR: 5.1 O2 III UN 2725
- IMDG: 5.1 III UN 2725
- IATA/ICAO: 5.1 III UN 2725
- GHS-signal word: Danger
- GHS-H sentences: H272 - H302 - H317
- GHS-P sentences: P221 - P210 - P220 - P261 - P321 - P501a

- Tariff number: 2834 29 20 00
- Applications: analytical chemistry, laboratory reagent, in the ceramics industry.
- Appearance: Blue-green-emerald crystals

zinc (Zn) ..... max. 0,05 %  
non precipitable with ( $NH_4$ )<sub>2</sub>S  
(as  $SO_4$ ) ..... max. 0,3 %

## Specifications:

assay (complexometric) ..... min. 98 %  
chlorides (Cl) ..... max. 0,003 %  
sulfates ( $SO_4$ ) ..... max. 0,03 %  
calcium (Ca) ..... max. 0,2 %  
cobalt (Co) ..... max. 0,01 %  
copper (Cu) ..... max. 0,002 %  
iron (Fe) ..... max. 0,005 %  
lead (Pb) ..... max. 0,005 %

Art. No.	Volume	Container
NI01500250	250 g	0
NI01501000	1 kg	0
NI0150005P	5 kg	0
NI0150025P	25 kg	0

# Nickel

## Nickel(II) oxide

### NI0170 Nickel(II) oxide, extra pure



- NiO
- M = 74,71 g/mol
- CAS [1313-99-1]
- EINECS-No.: 215-215-7
- Solub. in water: (20 °C): 0,0011 g/l
- Melting point: 1990 °C
- LD 50 (oral, rat): 5000 mg/kg
- EC-Index-No.: 028-003-00-2
- GHS-signal word: Danger
- GHS-H sentences: H350i - H372 - H317 - H413

- GHS-P sentences: P260 - P261 - P280 - P321 - P405 - P501a
- Tariff number: 2825 40 00 00
- Applications: laboratory reagent, painting (in porcelain industry).

calcium (Ca) . . . . .	max. 0,01 %
copper (Cu) . . . . .	max. 0,002 %
iron (Fe) . . . . .	max. 0,02 %
magnesium (Mg) . . . . .	max. 0,01 %
potassium (K) . . . . .	max. 0,002 %

#### Specifications:

assay (complexometric, as Ni) . . . . .	min. 75 %
aluminium (Al) . . . . .	max. 0,003 %
barium (Ba) . . . . .	max. 0,005 %

Art. No.	Volume	Container
NI01700250	250 g	Ⓢ

## Nickel(II) sulfate hexahydrate

- NiSO<sub>4</sub>·6H<sub>2</sub>O
- M = 262,86 g/mol
- CAS [10101-97-0]
- EINECS-No.: 232-104-9
- Solub. in water: (20 °C): 625 g/l
- Melting point: 53 °C
- LD 50 (oral, rat): 264 mg/kg

- EC-Index-No.: 028-009-00-5
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Danger
- GHS-H sentences: H334 - H351 - H410 - H302 - H317

- GHS-P sentences: P285 - P261 - P280 - P321 - P405 - P501a
- Tariff number: 2833 24 00 00
- Applications: laboratory reagent, for organometallic compounds synthesizing, manufacture of dyes and painting.

### NI0179 Nickel(II) sulfate hexahydrate, extra pure



assay (complexometric) . . . . .	98 - 102 %
insoluble in water . . . . .	max. 0,025 %
pH (5 %, H <sub>2</sub> O) . . . . .	4 - 6
chlorides (Cl) . . . . .	max. 0,005 %
nitrogen compounds (as N) . . . . .	max. 0,005 %
arsenic (As) . . . . .	max. 0,001 %
cadmium (Cd) . . . . .	max. 0,005 %

cobalt (Co) . . . . .	max. 0,02 %
copper (Cu) . . . . .	max. 0,005 %
iron (Fe) . . . . .	max. 0,005 %
lead (Pb) . . . . .	max. 0,002 %
zinc (Zn) . . . . .	max. 0,005 %
non precipitable with (NH <sub>4</sub> ) <sub>2</sub> S (as SO <sub>4</sub> ) . . . . .	max. 0,5 %

Art. No.	Volume	Container
NI01790250	250 g	Ⓢ
NI01791000	1 kg	Ⓢ

### NI0180 Nickel(II) sulfate hexahydrate, reagent grade, ACS



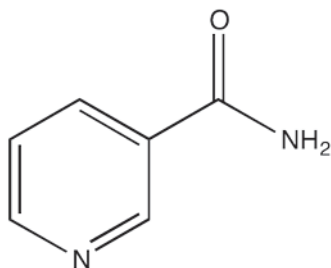
assay (complexometric) . . . . .	99 - 102 %
identity . . . . .	passes test
insoluble in water . . . . .	max. 0,005 %
pH (5 %, H <sub>2</sub> O) . . . . .	4 - 6
chlorides (Cl) . . . . .	max. 0,001 %
total nitrogen (as N) . . . . .	max. 0,001 %
calcium (Ca) . . . . .	max. 0,005 %
cobalt (Co) . . . . .	max. 0,002 %

copper (Cu) . . . . .	max. 0,002 %
iron (Fe) . . . . .	max. 0,001 %
lead (Pb) . . . . .	max. 0,001 %
magnesium (Mg) . . . . .	max. 0,005 %
manganese (Mn) . . . . .	max. 0,002 %
potassium (K) . . . . .	max. 0,01 %
sodium (Na) . . . . .	max. 0,03 %
zinc (Zn) . . . . .	max. 0,002 %

Art. No.	Volume	Container
NI01800250	250 g	Ⓢ
NI01801000	1 kg	Ⓢ
NI0180005P	5 kg	Ⓢ
NI0180025P	25 kg	Ⓢ

## Nicotinamide

### NI0035 Nicotinamide, extra pure



- Synonyms: Niacinamide, 3-Pyridinecarboxamide
- C<sub>6</sub>H<sub>6</sub>N<sub>2</sub>O
- M = 122,13 g/mol
- CAS [98-92-0]
- EINECS-No.: 202-713-4
- Solub. in water: (20 °C): soluble
- Melting point: 128 - 131 °C (sublimes)
- Boiling point: (0,0007 hPa) 150 - 160 °C
- Flash pt. 182 °C
- Ignition temp.: 480 °C
- LD 50 (oral, rat): 3530 - 3540 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2936 29 90 00

- Applications: synthesis of organic products, for pharmaceuticals synthesizing.

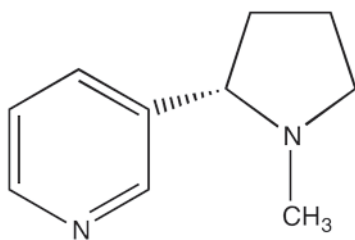
#### Specifications:

assay (titration with HClO <sub>4</sub> , on dried sample) . . . . .	99 - 101 %
identification . . . . .	passes test
pH (5 %, H <sub>2</sub> O) . . . . .	6, 0 - 7,5
appearance of solution . . . . .	passes test
heavy metals (as Pb) . . . . .	max. 0,003 %
related substances (TLC) . . . . .	passes test
residue on ignition . . . . .	max. 0,1 %
loss on drying (at vacuum) . . . . .	max. 0,5 %

Art. No.	Volume	Container
NI00350100	100 g	Ⓢ

## Nicotine

## NI0020 Nicotine, synthesis grade



- Synonyms: 3-(1-Methyl-2-pyrrolidinyl)pyridine
- $C_{10}H_{14}N_2$
- M = 162,24 g/mol
- CAS [54-11-5]
- EINECS-No.: 200-193-3
- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -79 °C
- Boiling point: 246 °C
- Flash pt. > 100 °C
- Ignition temp.: 240 °C
- Vapour pressure: (62 °C) 1,3 hPa
- LD 50 (oral, rat): 50 mg/kg
- EC-Index-No.: 614-001-00-4
- ADR: 6.1 T1 II UN 1654
- IMDG: 6.1 II UN 1654
- IATA/ICAO: 6.1 II UN 1654

- GHS-signal word: Danger
- GHS-H sentences: H301 - H310 - H411
- GHS-P sentences: P301 + P310 - P310 - P361 - P321 - P405 - P501a
- Tariff number: 2939 99 00 00
- Applications: synthesis of organic products, insecticide, fumigant.
- Appearance: Colourless to yellowish liquid

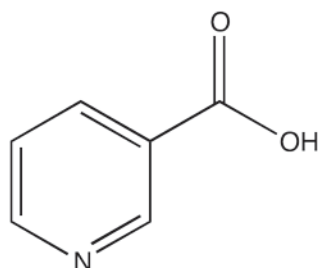
## Specifications:

assay (G.C.) . . . . .min. 97 %  
identity (IR-spectrum) . . . . .passes test

Art. No.	Volume	Container
NI00200100	100 ml	0

## Nicotinic acid

## AC1590 Nicotinic acid, extra pure, Pharpur®, Ph Eur, BP, USP



- Synonyms: Niacin, 3-Pyridinecarboxylic acid
- $C_6H_5NO_2$
- M = 123,12 g/mol
- CAS [59-67-6]
- EINECS-No.: 200-441-0
- Solub. in water: (20 °C): 18 g/l
- Melting point: 236,6 °C
- Flash pt. 193 °C
- Ignition temp.: > 365 °C (dust)
- LD 50 (oral, rat): 7000 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2936 29 90 00
- Applications: synthesis of organic products, for pharmaceuticals synthesizing, in pharma industry.

## Specifications:

assay (acidimetric, on dried sample) . . . . .99 - 101 %  
identity (IR-spectrum) . . . . .passes test  
chlorides (Cl) . . . . .max. 0,02 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,02 %  
heavy metals (as Pb) . . . . .max. 0,002 %  
ordinary impurities . . . . .max. 2 %  
related substances . . . . .max. 0,5 %  
residue on ignition . . . . .max. 0,1 %  
loss on drying (105 °C) . . . . .max. 1 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC15901000	1 kg	0

## Nigrosine, water soluble, C.I. 50420

## NI0062 Nigrosine, water soluble, C.I. 50420, for microscopy

- CAS [101357-32-8]
- EINECS-No.: 309-930-4
- Solub. in water: (20 °C): 10 g/l
- Tariff number: 3204 12 00 00
- Applications: indicator, microscopy.

## Specifications:

Absorption maximum  $\lambda$  (in ethanol 50 %) . . . . .570 - 580 nm  
Absorptivity (A1%/1 cm;  $\lambda$  max.) . . . . .200 - 300  
loss on drying (110 °C) . . . . .max. 15 %

Art. No.	Volume	Container
NI00620050	50 g	0

## Nitric acid, 69%

- HNO<sub>3</sub>
- M = 63,01 g/mol
- CAS [7697-37-2]
- EINECS-No.: 231-714-2
- Density: 1,41 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -41 °C

- Boiling point: 122 °C
- Vapour pressure: (20 °C) 9,4 hPa
- EC-Index-No.: 007-004-00-1
- ADR: 8 CO1 II UN 2031
- IMDG: 8 II UN 2031
- IATA/ICAO: 8 II UN 2031
- GHS-signal word: Danger

- GHS-H sentences: H314 - H272
- GHS-P sentences: P221 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2808 00 00 00
- Applications: oxidizing agent, synthesis of nitrates and organic nitro compounds.

## AC1600 Nitric acid, min. 69,5%, reagent grade, ACS, ISO



assay (acidimetric) . . . . .min. 69,5 %  
colour (Hazen) . . . . .max. 10  
chlorides (Cl) . . . . .max. 0,00005 %  
fluorides (F) . . . . .max. 0,0001 %  
phosphates (as PO<sub>4</sub>) . . . . .max. 0,00005 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,00005 %  
aluminium (Al) . . . . .max. 0,00005 %  
arsenic (As) . . . . .max. 0,000001 %  
barium (Ba) . . . . .max. 0,000001 %  
beryllium (Be) . . . . .max. 0,000001 %  
bismuth (Bi) . . . . .max. 0,00001 %  
cadmium (Cd) . . . . .max. 0,000001 %  
calcium (Ca) . . . . .max. 0,00001 %  
chromium (Cr) . . . . .max. 0,000002 %

cobalt (Co) . . . . .max. 0,000001 %  
copper (Cu) . . . . .max. 0,000001 %  
germanium (Ge) . . . . .max. 0,000005 %  
heavy metals (as Pb) . . . . .max. 0,00002 %  
iron (Fe) . . . . .max. 0,00001 %  
lead (Pb) . . . . .max. 0,000001 %  
lithium (Li) . . . . .max. 0,000001 %  
magnesium (Mg) . . . . .max. 0,00001 %  
manganese (Mn) . . . . .max. 0,000001 %  
molybdenum (Mo) . . . . .max. 0,000002 %  
nickel (Ni) . . . . .max. 0,000002 %  
potassium (K) . . . . .max. 0,00001 %  
silver (Ag) . . . . .max. 0,000001 %  
sodium (Na) . . . . .max. 0,00005 %

strontium (Sr) . . . . .max. 0,000001 %  
thallium (Tl) . . . . .max. 0,000005 %  
titanium (Ti) . . . . .max. 0,00001 %  
vanadium (V) . . . . .max. 0,000001 %  
zinc (Zn) . . . . .max. 0,000005 %  
zirconium (Zr) . . . . .max. 0,00001 %  
residue on ignition (as SO<sub>4</sub>) . . . . .max. 0,0005 %

Art. No.	Volume	Container
AC16001000	1l	0
AC16001001	1l	0
AC16002500	2,5l	0
AC16002501	2,5l	0

# Nitric

## AC1607 Nitric Acid, min. 69,5%, reagent grade, ACS, ISO, max. 0,000005% Hg



assay (acidimetric) . . . . . min. 69,5 %	copper (Cu) . . . . . max. 0,000001 %	strontium (Sr) . . . . . max. 0,000001 %
chlorides (Cl) . . . . . max. 0,00005 %	germanium (Ge) . . . . . max. 0,000005 %	thallium (Tl) . . . . . max. 0,000005 %
fluorides (F) . . . . . max. 0,0001 %	heavy metals (as Pb) . . . . . max. 0,00002 %	titanium (Ti) . . . . . max. 0,00001 %
phosphates (as PO <sub>4</sub> ) . . . . . max. 0,00005 %	iron (Fe) . . . . . max. 0,00002 %	vanadium (V) . . . . . max. 0,000001 %
sulfates (SO <sub>4</sub> ) . . . . . max. 0,00005 %	lead (Pb) . . . . . max. 0,000001 %	zinc (Zn) . . . . . max. 0,000005 %
aluminium (Al) . . . . . max. 0,000005 %	lithium (Li) . . . . . max. 0,000001 %	zirconium (Zr) . . . . . max. 0,00001 %
arsenic (As) . . . . . max. 0,000001 %	magnesium (Mg) . . . . . max. 0,00001 %	residue on ignition (as SO <sub>2</sub> ) . . . . . max. 0,0005 %
barium (Ba) . . . . . max. 0,000001 %	manganese (Mn) . . . . . max. 0,000001 %	
beryllium (Be) . . . . . max. 0,000001 %	mercury (Hg) . . . . . max. 0,0000005 %	
bismuth (Bi) . . . . . max. 0,00001 %	molybdenum (Mo) . . . . . max. 0,000002 %	
cadmium (Cd) . . . . . max. 0,000001 %	nickel (Ni) . . . . . max. 0,000005 %	
calcium (Ca) . . . . . max. 0,00005 %	potassium (K) . . . . . max. 0,00001 %	
chromium (Cr) . . . . . max. 0,00001 %	silver (Ag) . . . . . max. 0,000001 %	
cobalt (Co) . . . . . max. 0,000001 %	sodium (Na) . . . . . max. 0,00005 %	

Art. No.	Volume	Container
AC16071000	1 l	0
AC16072500	2,5 l	0

## AC1617 Nitric acid, 69%, ppb-trace analysis grade, Ultratrace®



assay (acidimetric) . . . . . 67 - 70 %	gold (Au) . . . . . max. 0,1 ppb	scandium (Sc) . . . . . max. 0,1 ppb
colour (Hazen) . . . . . max. 10	hafnium (Hf) . . . . . max. 0,1 ppb	selenium (Se) . . . . . max. 1 ppb
chlorides (Cl) . . . . . max. 200 ppb	holmium (Ho) . . . . . max. 0,1 ppb	silver (Ag) . . . . . max. 0,1 ppb
total phosphorus (P) . . . . . max. 10 ppb	indium (In) . . . . . max. 0,1 ppb	sodium (Na) . . . . . max. 1 ppb
total sulfur (S) . . . . . max. 300 ppb	iron (Fe) . . . . . max. 1 ppb	strontium (Sr) . . . . . max. 0,1 ppb
aluminium (Al) . . . . . max. 1 ppb	lanthanum (La) . . . . . max. 0,1 ppb	tellurium (Te) . . . . . max. 0,1 ppb
antimony (Sb) . . . . . max. 0,5 ppb	lead (Pb) . . . . . max. 0,1 ppb	terbium (Tb) . . . . . max. 0,1 ppb
arsenic (As) . . . . . max. 0,5 ppb	lithium (Li) . . . . . max. 0,1 ppb	thallium (Tl) . . . . . max. 0,1 ppb
barium (Ba) . . . . . max. 0,1 ppb	lutetium (Lu) . . . . . max. 0,1 ppb	thorium (Th) . . . . . max. 0,1 ppb
beryllium (Be) . . . . . max. 0,1 ppb	magnesium (Mg) . . . . . max. 1 ppb	thulium (Tm) . . . . . max. 0,1 ppb
bismuth (Bi) . . . . . max. 0,1 ppb	manganese (Mn) . . . . . max. 0,1 ppb	tin (Sn) . . . . . max. 0,5 ppb
boron (B) . . . . . max. 1 ppb	mercury (Hg) . . . . . max. 0,1 ppb	titanium (Ti) . . . . . max. 0,5 ppb
cadmium (Cd) . . . . . max. 0,5 ppb	molybdenum (Mo) . . . . . max. 0,1 ppb	tungsten (W) . . . . . max. 0,1 ppb
calcium (Ca) . . . . . max. 1 ppb	neodymium (Nd) . . . . . max. 0,1 ppb	uranium (U) . . . . . max. 0,1 ppb
cerium (Ce) . . . . . max. 0,1 ppb	nickel (Ni) . . . . . max. 0,5 ppb	vanadium (V) . . . . . max. 0,5 ppb
cesium (Cs) . . . . . max. 0,1 ppb	niobium (Nb) . . . . . max. 0,1 ppb	ytterbium (Yb) . . . . . max. 0,1 ppb
chromium (Cr) . . . . . max. 1 ppb	palladium (Pd) . . . . . max. 0,5 ppb	yttrium (Y) . . . . . max. 0,1 ppb
cobalt (Co) . . . . . max. 0,5 ppb	platinum (Pt) . . . . . max. 0,5 ppb	zinc (Zn) . . . . . max. 0,5 ppb
copper (Cu) . . . . . max. 0,5 ppb	potassium (K) . . . . . max. 1 ppb	zirconium (Zr) . . . . . max. 0,1 ppb
dysprosium (Dy) . . . . . max. 0,1 ppb	praseodymium (Pr) . . . . . max. 0,1 ppb	
erbium (Er) . . . . . max. 0,1 ppb	rhenium (Re) . . . . . max. 0,1 ppb	
europium (Eu) . . . . . max. 0,1 ppb	rhodium (Rh) . . . . . max. 0,5 ppb	
gadolinium (Gd) . . . . . max. 0,1 ppb	ruthidium (Rb) . . . . . max. 0,1 ppb	
gallium (Ga) . . . . . max. 0,1 ppb	ruthenium (Ru) . . . . . max. 0,5 ppb	
germanium (Ge) . . . . . max. 0,1 ppb	samarium (Sm) . . . . . max. 0,1 ppb	

Art. No.	Volume	Container
AC16170500	500 ml	0
AC16171000	1 l	0
AC16172500	2,5 l	0

## AC1618 Nitric acid, 69%, ppt-trace analysis grade, Ultratrace®



assay (acidimetric) . . . . . 67 - 70 %	holmium (Ho) . . . . . max. 1 ppt	scandium (Sc) . . . . . max. 10 ppt
aluminium (Al) . . . . . max. 20 ppt	indium (In) . . . . . max. 1 ppt	silver (Ag) . . . . . max. 10 ppt
antimony (Sb) . . . . . max. 10 ppt	iron (Fe) . . . . . max. 10 ppt	sodium (Na) . . . . . max. 10 ppt
arsenic (As) . . . . . max. 20 ppt	lanthanum (La) . . . . . max. 1 ppt	strontium (Sr) . . . . . max. 10 ppt
barium (Ba) . . . . . max. 10 ppt	lead (Pb) . . . . . max. 10 ppt	tellurium (Te) . . . . . max. 1 ppt
beryllium (Be) . . . . . max. 10 ppt	lithium (Li) . . . . . max. 10 ppt	terbium (Tb) . . . . . max. 1 ppt
bismuth (Bi) . . . . . max. 10 ppt	lutetium (Lu) . . . . . max. 1 ppt	thallium (Tl) . . . . . max. 10 ppt
boron (B) . . . . . max. 10 ppt	magnesium (Mg) . . . . . max. 10 ppt	thorium (Th) . . . . . max. 1 ppt
cadmium (Cd) . . . . . max. 10 ppt	manganese (Mn) . . . . . max. 10 ppt	thulium (Tm) . . . . . max. 1 ppt
calcium (Ca) . . . . . max. 10 ppt	mercury (Hg) . . . . . max. 50 ppt	tin (Sn) . . . . . max. 20 ppt
cerium (Ce) . . . . . max. 10 ppt	molybdenum (Mo) . . . . . max. 10 ppt	titanium (Ti) . . . . . max. 10 ppt
cesium (Cs) . . . . . max. 10 ppt	neodymium (Nd) . . . . . max. 1 ppt	tungsten (W) . . . . . max. 10 ppt
chromium (Cr) . . . . . max. 10 ppt	nickel (Ni) . . . . . max. 20 ppt	uranium (U) . . . . . max. 1 ppt
cobalt (Co) . . . . . max. 10 ppt	niobium (Nb) . . . . . max. 1 ppt	vanadium (V) . . . . . max. 10 ppt
copper (Cu) . . . . . max. 10 ppt	palladium (Pd) . . . . . max. 20 ppt	ytterbium (Yb) . . . . . max. 1 ppt
dysprosium (Dy) . . . . . max. 1 ppt	platinum (Pt) . . . . . max. 20 ppt	yttrium (Y) . . . . . max. 1 ppt
erbium (Er) . . . . . max. 1 ppt	potassium (K) . . . . . max. 10 ppt	zinc (Zn) . . . . . max. 10 ppt
europium (Eu) . . . . . max. 1 ppt	praseodymium (Pr) . . . . . max. 1 ppt	zirconium (Zr) . . . . . max. 10 ppt
gadolinium (Gd) . . . . . max. 1 ppt	rhenium (Re) . . . . . max. 10 ppt	
gallium (Ga) . . . . . max. 10 ppt	rhodium (Rh) . . . . . max. 10 ppt	
germanium (Ge) . . . . . max. 10 ppt	rubidium (Rb) . . . . . max. 10 ppt	
gold (Au) . . . . . max. 20 ppt	ruthenium (Ru) . . . . . max. 20 ppt	
hafnium (Hf) . . . . . max. 10 ppt	samarium (Sm) . . . . . max. 1 ppt	

Art. No.	Volume	Container
AC16180250	250 ml	0
AC16180500	500 ml	0

### Nitric acid, 65%

- HNO<sub>3</sub>
- M = 63,01 g/mol
- CAS [7697-37-2]
- EINECS-No.: 231-714-2
- Density: 1,41 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ -32 °C

- Boiling point: 122 °C
- Vapour pressure: (20 °C) 9,4 hPa
- EC-Index-No.: 007-004-00-1
- ADR: 8 CO1 II UN 2031
- IMDG: 8 II UN 2031
- IATA/ICAO: 8 II UN 2031
- GHS-signal word: Danger

- GHS-H sentences: H314 - H272
- GHS-P sentences: P221 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2808 00 00 00
- Applications: oxidizing agent, synthesis of nitrates and organic nitro compounds, in pharma industry.



**AC1599 Nitric acid, solution 65% w/w, extra pure**

assay (acidimetric) . . . . .	64 - 66 %	heavy metals (as Pb) . . . . .	max. 0,00005 %
chlorides (Cl) . . . . .	max. 0,0001 %	iron (Fe) . . . . .	max. 0,0001 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,0002 %	lead (Pb) . . . . .	max. 0,00005 %
arsenic (As) . . . . .	max. 0,000005 %	residue on ignition (as SO <sub>4</sub> ) . . . . .	max. 0,0005 %
calcium (Ca) . . . . .	max. 0,0005 %		
copper (Cu) . . . . .	max. 0,00005 %		

Art. No.	Volume	Container
AC15991000	1 l	0
AC15992500	2,5 l	0
AC1599005P	5 l	0
AC1599025P	25 l	0

**AC1605 Nitric Acid, solution min. 65% w/w, reagent grade, ISO, max. 0,0000005% Hg**

assay (acidimetric) . . . . .	min. 65 %	gallium (Ga) . . . . .	max. 0,000005 %
chlorides (Cl) . . . . .	max. 0,00002 %	germanium (Ge) . . . . .	max. 0,000002 %
fluorides (F) . . . . .	max. 0,0001 %	gold (Au) . . . . .	max. 0,000005 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,00002 %	heavy metals (as Pb) . . . . .	max. 0,00002 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,00005 %	indium (In) . . . . .	max. 0,000002 %
aluminium (Al) . . . . .	max. 0,000005 %	iron (Fe) . . . . .	max. 0,00001 %
arsenic (As) . . . . .	max. 0,000001 %	lead (Pb) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000001 %	lithium (Li) . . . . .	max. 0,000001 %
beryllium (Be) . . . . .	max. 0,000001 %	magnesium (Mg) . . . . .	max. 0,000005 %
bismuth (Bi) . . . . .	max. 0,00001 %	manganese (Mn) . . . . .	max. 0,000001 %
cadmium (Cd) . . . . .	max. 0,000001 %	mercury (Hg) . . . . .	max. 0,000005 %
calcium (Ca) . . . . .	max. 0,00001 %	molybdenum (Mo) . . . . .	max. 0,000001 %
chromium (Cr) . . . . .	max. 0,000002 %	nickel (Ni) . . . . .	max. 0,000002 %
cobalt (Co) . . . . .	max. 0,000001 %	platinum (Pt) . . . . .	max. 0,00001 %
copper (Cu) . . . . .	max. 0,000001 %	potassium (K) . . . . .	max. 0,00001 %

silver (Ag) . . . . .	max. 0,000001 %
sodium (Na) . . . . .	max. 0,00002 %
strontium (Sr) . . . . .	max. 0,000001 %
thallium (Tl) . . . . .	max. 0,000002 %
titanium (Ti) . . . . .	max. 0,000002 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000002 %
zirconium (Zr) . . . . .	max. 0,000002 %
residue on ignition (as SO <sub>4</sub> ) . . . . .	max. 0,0003 %

Art. No.	Volume	Container
AC16051000	1 l	0
AC16052500	2,5 l	0

**AC1601 Nitric acid, solution min. 65% w/w, Ph Eur, for determinations with dithizone**

assay (acidimetric) . . . . .	min. 65 %	heavy metals (as Pb) . . . . .	max. 0,00002 %
chlorides (Cl) . . . . .	max. 0,00002 %	indium (In) . . . . .	max. 0,000002 %
fluorides (F) . . . . .	max. 0,0001 %	iron (Fe) . . . . .	max. 0,00001 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,00002 %	lead (Pb) . . . . .	max. 0,000001 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,00005 %	lithium (Li) . . . . .	max. 0,000001 %
aluminium (Al) . . . . .	max. 0,000005 %	magnesium (Mg) . . . . .	max. 0,000005 %
arsenic (As) . . . . .	max. 0,000001 %	manganese (Mn) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000001 %	molybdenum (Mo) . . . . .	max. 0,000001 %
beryllium (Be) . . . . .	max. 0,000001 %	nickel (Ni) . . . . .	max. 0,000002 %
bismuth (Bi) . . . . .	max. 0,000002 %	platinum (Pt) . . . . .	max. 0,00001 %
cadmium (Cd) . . . . .	max. 0,000001 %	potassium (K) . . . . .	max. 0,00001 %
calcium (Ca) . . . . .	max. 0,00001 %	silver (Ag) . . . . .	max. 0,000001 %
chromium (Cr) . . . . .	max. 0,000002 %	sodium (Na) . . . . .	max. 0,000002 %
cobalt (Co) . . . . .	max. 0,000001 %	strontium (Sr) . . . . .	max. 0,000001 %
copper (Cu) . . . . .	max. 0,000001 %	thallium (Tl) . . . . .	max. 0,000002 %
gallium (Ga) . . . . .	max. 0,000005 %	titanium (Ti) . . . . .	max. 0,000002 %
germanium (Ge) . . . . .	max. 0,000002 %	vanadium (V) . . . . .	max. 0,000001 %
gold (Au) . . . . .	max. 0,000005 %	zinc (Zn) . . . . .	max. 0,000002 %

zirconium (Zr) . . . . .	max. 0,000002 %
residue on ignition (as SO <sub>4</sub> ) . . . . .	max. 0,0003 %
suitability for det. with dithizone . . . . .	passes test
Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
AC16011000	1 l	0
AC16011001	1 l	0
AC16012500	2,5 l	0
AC16012501	2,5 l	0
AC1601005P	5 l	0
AC1601025P	25 l	0

**Nitric acid, 60%**

- HNO<sub>3</sub>
- M = 63,01 g/mol
- CAS [7697-37-2]
- EINECS-No.: 231-714-2
- Density: 1,37 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -22 °C

- Boiling point: ~ 120 °C
- EC-Index-No.: 007-004-00-1
- ADR: 8 C 1 II UN 2031
- IMDG: 8 II UN 2031
- IATA/ICAO: 8 II UN 2031
- GHS-signal word: Danger
- GHS-H sentences: H272 - H314

- GHS-P sentences: P221 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2808 00 00 00
- Applications: oxidizing agent, synthesis of nitrates and organic nitro compounds.

**AC1598 Nitric acid, solution 60% w/w, extra pure**

assay (acidimetric) . . . . .	approx. 60 %	calcium (Ca) . . . . .	max. 0,001 %
chlorides (Cl) . . . . .	max. 0,0003 %	heavy metals (as Pb) . . . . .	max. 0,0005 %
iodates, bromates . . . . .	passes test	iron (Fe) . . . . .	max. 0,0005 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,001 %	residue on evaporation . . . . .	max. 0,001 %
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,001 %		
arsenic (As) . . . . .	max. 0,0001 %		

Art. No.	Volume	Container
AC15981000	1 l	0
AC15982500	2,5 l	0
AC1598005P	5 l	0
AC1598025P	25 l	0

**AC1602 Nitric acid, solution min. 60% w/w, reagent grade, ISO**

assay (acidimetric) . . . . .	min. 60 %	copper (Cu) . . . . .	max. 0,000001 %
chlorides (Cl) . . . . .	max. 0,00005 %	germanium (Ge) . . . . .	max. 0,000005 %
fluorides (F) . . . . .	max. 0,0001 %	heavy metals (as Pb) . . . . .	max. 0,000002 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,0001 %	iron (Fe) . . . . .	max. 0,00002 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,0001 %	lead (Pb) . . . . .	max. 0,000001 %
aluminium (Al) . . . . .	max. 0,000005 %	lithium (Li) . . . . .	max. 0,000002 %
arsenic (As) . . . . .	max. 0,000001 %	magnesium (Mg) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000002 %	manganese (Mn) . . . . .	max. 0,000001 %
beryllium (Be) . . . . .	max. 0,000001 %	molybdenum (Mo) . . . . .	max. 0,000002 %
bismuth (Bi) . . . . .	max. 0,00001 %	nickel (Ni) . . . . .	max. 0,000005 %
cadmium (Cd) . . . . .	max. 0,00005 %	potassium (K) . . . . .	max. 0,00001 %
calcium (Ca) . . . . .	max. 0,00005 %	silver (Ag) . . . . .	max. 0,000001 %
chromium (Cr) . . . . .	max. 0,00001 %	sodium (Na) . . . . .	max. 0,00005 %
cobalt (Co) . . . . .	max. 0,000001 %	strontium (Sr) . . . . .	max. 0,000001 %

thallium (Tl) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,00001 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000005 %
zirconium (Zr) . . . . .	max. 0,00001 %
residue on ignition (as SO <sub>4</sub> ) . . . . .	max. 0,0005 %

Art. No.	Volume	Container
AC16021000	1 l	0
AC16022500	2,5 l	0
AC1602005P	5 l	0
AC1602025P	25 l	0

# Nitric

## AC1604 Nitric acid, solution min. 60% w/w, reagent grade, ISO, max. 0,000005% Hg



assay (acidimetric) . . . . .min. 60 %  
 chlorides (Cl) . . . . .max. 0,00005 %  
 fluorides (F) . . . . .max. 0,00001 %  
 phosphates (as PO<sub>4</sub>) . . . . .max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,00005 %  
 aluminium (Al) . . . . .max. 0,000005 %  
 arsenic (As) . . . . .max. 0,000001 %  
 barium (Ba) . . . . .max. 0,000001 %  
 beryllium (Be) . . . . .max. 0,000001 %  
 bismuth (Bi) . . . . .max. 0,00001 %  
 cadmium (Cd) . . . . .max. 0,000001 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,00001 %  
 cobalt (Co) . . . . .max. 0,000001 %

copper (Cu) . . . . .max. 0,000001 %  
 germanium (Ge) . . . . .max. 0,000005 %  
 heavy metals (as Pb) . . . . .max. 0,00002 %  
 iron (Fe) . . . . .max. 0,00002 %  
 lead (Pb) . . . . .max. 0,000001 %  
 lithium (Li) . . . . .max. 0,000001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000001 %  
 mercury (Hg) . . . . .max. 0,0000005 %  
 molybdenum (Mo) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000005 %  
 potassium (K) . . . . .max. 0,00001 %  
 silver (Ag) . . . . .max. 0,000001 %  
 sodium (Na) . . . . .max. 0,00005 %

strontium (Sr) . . . . .max. 0,000001 %  
 thallium (Tl) . . . . .max. 0,000005 %  
 titanium (Ti) . . . . .max. 0,00001 %  
 vanadium (V) . . . . .max. 0,000001 %  
 zinc (Zn) . . . . .max. 0,000005 %  
 zirconium (Zr) . . . . .max. 0,00001 %  
 residue on ignition (as SO<sub>2</sub>) . . . . .max. 0,0005 %

Art. No.	Volume	Container
AC16041000	1 l	0
AC16042500	2,5 l	0

## Nitric acid, volumetric solutions

### AC1612 Nitric acid, solution 2 mol/l (2 N)



- HNO<sub>3</sub>
- M = 63,01 g/mol
- CAS [7697-37-2]
- EINECS-No.: 231-714-2
- Density: ~ 1,07 g/cm<sup>3</sup>
- EC-Index-No.: 007-004-00-1
- ADR: 8 C1 II UN 2031
- IMDG: 8 II UN 2031
- IATA/ICAO: 8 II UN 2031
- GHS-signal word: Danger
- GHS-H sentences: H272 - H314

- GHS-P sentences: P221 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2808 00 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, oxidizing agent.

1 ml = 0,12602 g HNO<sub>3</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001

Art. No.	Volume	Container
AC16121000	1 l	0

### AC1610 Nitric acid, solution 1 mol/l (1 N)



- HNO<sub>3</sub>
- M = 63,01 g/mol
- CAS [7697-37-2]
- EINECS-No.: 231-714-2
- Density: 1,036 g/cm<sup>3</sup>
- Melting point: ~ -4 °C
- Boiling point: ~ 101 °C
- EC-Index-No.: 007-004-00-1
- ADR: 8 C1 II UN 2031
- IMDG: 8 II UN 2031
- IATA/ICAO: 8 II UN 2031

- GHS-signal word: Danger
- GHS-H sentences: H272 - H314
- GHS-P sentences: P221 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2808 00 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, oxidizing agent.

1 ml = 0,06301 g HNO<sub>3</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001

Art. No.	Volume	Container
AC16101000	1 l	0

### AC1615 Nitric acid, solution 0,5 mol/l (0,5 N)



- HNO<sub>3</sub>
- M = 63,01 g/mol
- CAS [7697-37-2]
- EINECS-No.: 231-714-2
- Density: 1,02 g/cm<sup>3</sup>
- EC-Index-No.: 007-004-00-1
- ADR: 8 C1 II UN 2031
- IMDG: 8 II UN 2031
- IATA/ICAO: 8 II UN 2031
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2808 00 00 00
- Applications: analytical chemistry, atomic absorption analysis, titrant in volumetric analysis, oxidizing agent.

1 ml = 0,031505 g HNO<sub>3</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001

Art. No.	Volume	Container
AC16151000	1 l	0

### AC1611 Nitric acid, solution 0,1 mol/l (0,1 N)

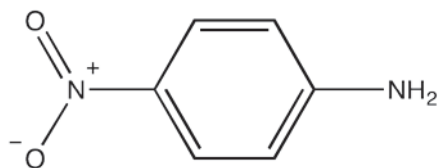
- HNO<sub>3</sub>
- M = 63,01 g/mol
- CAS [7697-37-2]
- EINECS-No.: 231-714-2
- Density: ~ 1,002 g/cm<sup>3</sup>
- EC-Index-No.: 007-004-00-1
- Tariff number: 2808 00 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, oxidizing agent.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,006301 g HNO<sub>3</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC16111000	1 l	0

## 4-Nitroaniline

## NI0230 4-Nitroaniline, synthesis grade



- Synonyms: p-Nitroaniline
- $C_6H_7N_2O_2$
- M = 138,12 g/mol
- CAS [100-01-6]
- EINECS-No.: 202-810-1
- Solub. in water: (20 °C): 0,5 g/l
- Melting point: 148 °C
- Boiling point: (133 hPa) 142 °C
- Flash pt. 199 °C
- Ignition temp.: 500 °C
- Vapour pressure: (142 °C) 1,33 hPa
- LD 50 (oral, rat): 750 mg/kg
- EC-Index-No.: 612-012-00-9 [3]
- ADR: 6.1 T2 II UN 1661
- IMDG: 6.1 II UN 1661
- IATA/ICAO: 6.1 II UN 1661
- GHS-signal word: Danger

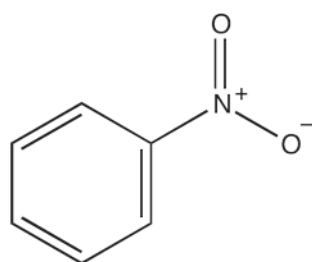
- GHS-H sentences: H301 - H311 - H331 - H373 - H412
- GHS-P sentences: P260 - P301 + P310 - P361 - P321 - P405 - P501a
- Tariff number: 2921 42 00 30
- Applications: synthesis of organic products, manufacture of dyes.
- Appearance: Yellow to ochre powder

## Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,1 %

Art. No.	Volume	Container
NI02300500	500 g	⊞

## Nitrobenzene



- Synonyms: Nitrobenzol, Essence of mirbane
- $C_6H_5NO_2$
- M = 123,11 g/mol
- CAS [98-95-3]
- EINECS-No.: 202-716-0
- Density: 1,20 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 1,90 g/l
- Melting point: 6,0 °C
- Boiling point: 211 °C
- Flash pt. 88 °C
- Ignition temp.: 480 °C
- Vapour pressure: (20 °C) 0,3 hPa
- Refraction index: (n 20 °C/D) 1,55296
- Dielectric const.: (20 °C) 34,8

- LD 50 (oral, rat): 640 mg/kg
- EC-Index-No.: 609-003-00-7
- ADR: 6.1 T1 II UN 1662
- IMDG: 6.1 II UN 1662
- IATA/ICAO: 6.1 II UN 1662
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H331 - H372 - H351 - H361f - H411
- GHS-P sentences: P260 - P301 + P310 - P361 - P321 - P405 - P501a
- Tariff number: 2904 20 00 90
- Applications: synthesis of organic products, cosmetics, in lubricant compositions.

## NI0270 Nitrobenzene, extra pure



assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,201 - 1,205  
 free acid (as HNO<sub>3</sub>) . . . . .max. 0,005 %

water (K.F.) . . . . .max. 0,05 %

Art. No.	Volume	Container
NI02701000	1 l	⊞
NI02702500	2,5 l	⊞

## NI0273 Nitrobenzene, reagent grade, ACS, Reag. Ph Eur



assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,201 - 1,205  
 boiling point . . . . .210 - 212 °C  
 water-soluble titrable acid . . . . .max. 0,0005 meq/g  
 chlorides (Cl) . . . . .max. 0,0005 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %

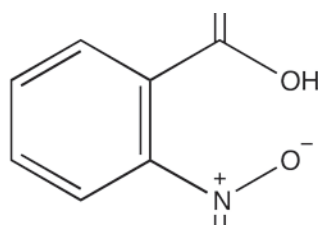
cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,000002 %  
 1,2-dinitrobenzene (G.C.) . . . . .max. 0,005 %

1,3-dinitrobenzene (G.C.) . . . . .max. 0,005 %  
 1,4-dinitrobenzene (G.C.) . . . . .max. 0,005 %  
 residue on ignition . . . . .max. 0,0005 %  
 water (K.F.) . . . . .max. 0,05 %

Art. No.	Volume	Container
NI02731000	1 l	⊞

## 2-Nitrobenzoic acid

## AC1630 2-Nitrobenzoic acid, synthesis grade



- Synonyms: o-Nitrobenzoic acid
- $C_7H_5NO_4$
- M = 167,12 g/mol
- CAS [552-16-9]
- EINECS-No.: 209-004-9
- Solub. in water: (25 °C): 3,6 g/l
- Melting point: 146 - 148 °C
- GHS-signal word: Warning
- GHS-H sentences: H373
- GHS-P sentences: P260 - P314 - P501a
- Tariff number: 2916 39 00 90

- Applications: laboratory reagent, synthesis of organic products.
- Appearance: Off-white powder

## Specifications:

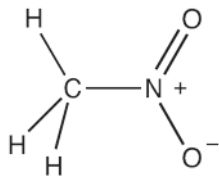
assay (G.C.) . . . . .min. 85 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,05 %

Art. No.	Volume	Container
AC16300250	250 g	⊞

# Nitrom

## Nitromethane

NI0370 Nitromethane, extra pure, Reag. Ph Eur



- Synonyms: Mononitromethane, Nitrocarbol
- $\text{CH}_3\text{NO}_2$
- $M = 61,04 \text{ g/mol}$
- CAS [75-52-5]
- EINECS-No.: 200-876-6
- Density: (25 °C)  $1,14 \text{ g/cm}^3$
- Solub. in water: (20 °C):  $105 \text{ g/l}$
- Melting point:  $-28,5 \text{ °C}$
- Boiling point:  $101,2 \text{ °C}$
- Flash pt.  $35,6 \text{ °C}$
- Ignition temp.:  $418 \text{ °C}$
- Vapour pressure: (20 °C)  $36 \text{ hPa}$
- Refraction index: (n 20 °C/D)  $1,3818$
- Dielectric const.: (30 °C)  $3,59$
- LD 50 (oral, rat):  $940 \text{ mg/kg}$
- EC-Index-No.: 609-036-00-7
- ADR: 3 F1 II UN 1261
- IMDG: 3 II UN 1261
- IATA/ICAO: 3 II UN 1261
- GHS-signal word: Warning
- GHS-H sentences: H226 - H302
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 2904 20 00 10
- Applications: laboratory reagent, synthesis of organic products, as fuel, solvent for active principles from

plant and animal tissues extractions, in the coating industry.

- Appearance: Clear liquid

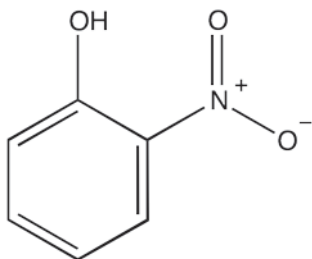
### Specifications:

assay (G.C.) ..... min. 98,5 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/20°) .....  $1,132 - 1,134$   
 refractive index  $n_{20/D}$  .....  $1,381 - 1,383$   
 nitroethane (G.C.) ..... max. 1 %  
 1-nitropropane (G.C.) ..... max. 0,1 %  
 2-nitropropane (G.C.) ..... max. 0,2 %  
 propionitrile (G.C.) ..... max. 0,2 %  
 distillation range (> 95 %) .....  $100 - 103 \text{ °C}$   
 copper (Cu) ..... max. 0,00002 %  
 iron (Fe) ..... max. 0,00005 %  
 lead (Pb) ..... max. 0,00002 %  
 nickel (Ni) ..... max. 0,00002 %  
 residue on evaporation ..... max. 0,01 %  
 water (K.F.) ..... max. 0,1 %

Art. No.	Volume	Container
NI03700250	250 ml	0
NI03701000	1 l	0

## o-Nitrophenol

NI0335 o-Nitrophenol, synthesis grade



- Synonyms: 2-Nitrophenol
- $\text{C}_6\text{H}_5\text{NO}_3$
- $M = 139,11 \text{ g/mol}$
- CAS [88-75-5]
- EINECS-No.: 201-857-5
- Solub. in water: (20 °C): insoluble
- Melting point:  $43 - 45 \text{ °C}$
- Boiling point:  $215 - 216 \text{ °C}$
- Flash pt.  $102 \text{ °C}$
- Vapour pressure: (49 °C)  $1 \text{ hPa}$
- LD 50 (oral, rat):  $334 \text{ mg/kg}$
- ADR: 6.1 T2 III UN 1663
- IMDG: 6.1 III UN 1663
- IATA/ICAO: 6.1 III UN 1663
- GHS-signal word: Warning

- GHS-H sentences: H302 - H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2908 90 00 90
- Applications: laboratory reagent (glucose), synthesis of organic products, indicator.
- Appearance: Yellow solid

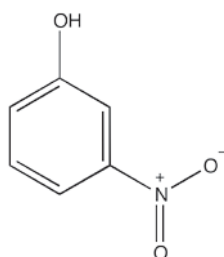
### Specifications:

assay (G.C.) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test

Art. No.	Volume	Container
NI03350250	250 g	0

## m-Nitrophenol

NI0343 m-Nitrophenol, indicator



- Synonyms: 3-Nitrophenol
- $\text{C}_6\text{H}_5\text{NO}_3$
- $M = 139,11 \text{ g/mol}$
- CAS [554-84-7]
- EINECS-No.: 209-073-5
- Solub. in water: (20 °C): insoluble
- Melting point:  $94 - 95 \text{ °C}$
- LD 50 (oral, rat):  $328 \text{ mg/kg}$
- ADR: 6.1 T2 III UN 1663
- IMDG: 6.1 III UN 1663
- IATA/ICAO: 6.1 III UN 1663
- GHS-signal word: Warning
- GHS-H sentences: H302 - H315 - H319

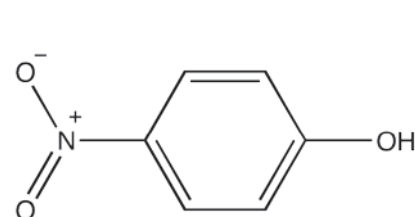
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2908 90 00 90
- Applications: synthesis of organic products, indicator.

### Specifications:

assay (DSC) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 pH range (colourless to yellow) .....  $6,6 - 8,6$

Art. No.	Volume	Container
NI03430005	5 g	0

## p-Nitrophenol



- Synonyms: 4-Nitrophenol
- $\text{C}_6\text{H}_5\text{NO}_3$
- $M = 139,11 \text{ g/mol}$
- CAS [100-02-7]
- EINECS-No.: 202-811-7
- Solub. in water: (20 °C):  $11,8 \text{ g/l}$
- Melting point:  $110 - 114 \text{ °C}$
- Boiling point:  $\sim 280 \text{ °C}$  (decomposes)
- Flash pt.  $169 \text{ °C}$
- Ignition temp.:  $\sim 495 \text{ °C}$
- LD 50 (oral, rat):  $202 \text{ mg/kg}$
- EC-Index-No.: 609-015-00-2

- ADR: 6.1 T2 III UN 1663
- IMDG: 6.1 III UN 1663
- IATA/ICAO: 6.1 III UN 1663
- GHS-signal word: Warning
- GHS-H sentences: H373 - H302 - H312 - H332
- GHS-P sentences: P260 - P261 - P280 - P322 - P301 + P312 - P501a
- Tariff number: 2908 99 00 30
- Applications: analytical chemistry, laboratory reagent, indicator, synthesis of organic products.
- Appearance: Brown-yellow crystals

**NI0345 p-Nitrophenol, moistened, synthesis grade**

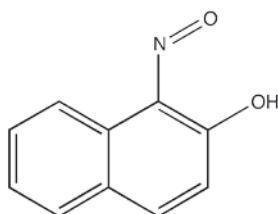
assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 water (K.F.) . . . . .max. 5 %

Art. No.	Volume	Container
NI03451000	1 kg	Ⓟ

**NI0348 p-Nitrophenol, indicator**

pH range (colourless to yellow) . . . . .5,0 - 7,6  
 insoluble in C<sub>2</sub>H<sub>5</sub>OH . . . . .passes test  
 residue on ignition (as SO<sub>2</sub>) . . . . .max. 0,05 %

Art. No.	Volume	Container
NI03480100	100 g	Ⓟ

**1-Nitroso-2-naphthol****NI0390 1-Nitroso-2-naphthol, reagent grade**

- Synonyms: Nitroso-β-naphthol
- C<sub>10</sub>H<sub>7</sub>NO<sub>2</sub>
- M = 173,17 g/mol
- CAS [131-91-9]
- EINECS-No.: 205-043-0
- Solub. in water: (20 °C): 0,2 g/l
- Melting point: 107 - 109 °C
- LD 50 (oral, rat): 500 mg/kg
- Tariff number: 2908 90 00 90
- Applications: analytical chemistry and as gasoline additive.

**Specifications:**

assay (referred to dried sample) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 Absorptivity (A1%/1 cm; λ=370 nm, 0,002 %, ethanol, on dried sample). . . . .300 - 350  
 loss on drying (70 °C, vacuum). . . . .max. 3 %

Art. No.	Volume	Container
NI03900025	25 g	Ⓟ

## O'Meara's reagent

## RE0060 O'Meara's reagent, for microbiology



- Density:
- Solub. in water: (20 °C): miscible
- ADR: 8 C5 II UN 1814
- IMDG: 8 II UN 1814
- IATA/ICAO: 8 II UN 1814
- GHS-signal word: Danger
- GHS-H sentences: H314 - H302

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00

creatine . . . . . 3 g  
distilled water . . . . . 1000 ml  
suitability for microbiology. . . . . passes test

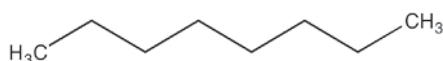
**Specifications:**

composition :  
potassium hydroxide . . . . . 400 g

Art. No.	Volume	Container
RE0060G100	100 ml	

## Octane

## OC0010 Octane 80%, ASTM



- C<sub>8</sub>H<sub>18</sub>
- M = 114,23 g/mol
- CAS [111-65-9]
- EINECS-No.: 203-892-1
- Density: 0,70 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: -57 °C
- Boiling point: 125 - 126 °C
- Flash pt. 13 °C
- Ignition temp.: 210 °C
- Vapour pressure: (20 °C) 14 hPa
- Dielectric const.: (20 °C) 1,9
- EC-Index-No.: 601-009-00-8
- ADR: 3 F1 II UN 1262
- IMDG: 3 II UN 1262
- IATA/ICAO: 3 II UN 1262

- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H410 - H315 - H336
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2901 10 00 00
- Applications: analytical chemistry, reference material, chromatography.

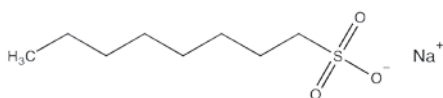
**Specifications:**

isooctane (G.C.) . . . . .min. 80 %  
n-heptane (G.C.) . . . . .max. 20 %

Art. No.	Volume	Container
OC0010200L	200 l	

## 1-Octane sulfonic acid, sodium salt, HPLC solutions

## AC1700 1-Octane sulfonic acid, sodium salt, solution 0,1 mol/l, HPLC grade



- C<sub>8</sub>H<sub>17</sub>NaO<sub>3</sub>S
- M = 216,28 g/mol
- CAS [5324-84-5]
- EINECS-No.: 226-195-4
- GHS-H sentences: EUH210
- Tariff number: 2904 10 00 90
- Applications: laboratory reagent, analytical chemistry, chromatography.

pH (20 °C) . . . . .3,4 - 3,6  
absorbance of an aqueous solution 0,005 M in a 1 cm cell at 254 nm . . . . .< 0,02 AU  
Contains acetic acid as preservative  
To obtain a solution 0,005 M dilute 1:20 with the appropriate mixture of water-solvent

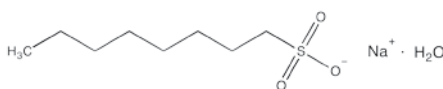
**Specifications:**

factor limits. . . . .0,995 - 1,005

Art. No.	Volume	Container
AC17000250	250 ml	
AC17001000	1 l	

## 1-Octane sulfonic acid, sodium salt monohydrate

## AC1702 1-Octane sulfonic acid, sodium salt monohydrate, HPLC grade



- Synonyms: Sodium 1-octylsulfonate monohydrate
- C<sub>8</sub>H<sub>17</sub>NaO<sub>3</sub>S·H<sub>2</sub>O
- M = 234,29 g/mol
- CAS [207596-29-0]
- Solub. in water: (20 °C): soluble
- Tariff number: 2904 10 00 90
- Applications: analytical chemistry, chromatography.

max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength:absorbance:  
210 nm. . . . .0,1 AU  
220 nm. . . . .0,06 AU  
230 nm. . . . .0,04 AU  
260 nm. . . . .0,02 AU

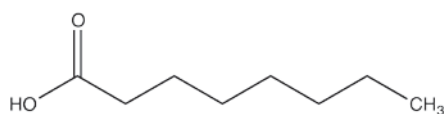
**Specifications:**

assay (acidimetric) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test  
insoluble matter . . . . .passes test

Art. No.	Volume	Container
AC17020025	25 g	
AC17020100	100 g	

## Octanoic acid

## AC0670 Octanoic acid, synthesis grade



- Synonyms: Caprylic acid
- $C_8H_{16}O_2$
- M = 144,22 g/mol
- CAS [124-07-2]
- EINECS-No.: 204-677-5
- Density: 0,91 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,68 g/l
- Melting point: 16,5 °C
- Boiling point: 237 °C
- Flash pt. 130 °C
- Ignition temp.: 440 °C
- Vapour pressure: (20 °C) < 0,1 hPa
- LD 50 (oral, rat): 10080 mg/kg
- ADR: 8 C3 III UN 3265
- IMDG: 8 III UN 3265
- IATA/ICAO: 8 III UN 3265
- GHS-signal word: Danger
- GHS-H sentences: H314

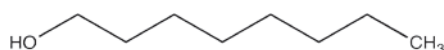
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 90 80 90
- Applications: synthesis of organic products, manufacture of dyes, perfumery.

## Specifications:

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,909 - 0,910  
 capric acid (G.C.) . . . . .max. 0,5 %  
 acidity index . . . . .387 - 389  
 saponifiable impurities . . . . .max. 0,2 %  
 iodine index . . . . .max. 0,2  
 residue on ignition . . . . .max. 0,1 %

Art. No.	Volume	Container
AC06701000	1 l	Ø

## n-Octyl alcohol



- Synonyms: 1-Octanol
- $C_8H_{18}O$
- M = 130,23 g/mol
- CAS [111-87-5]
- EINECS-No.: 203-917-6
- Density: 0,83 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: -16 °C
- Boiling point: 188 - 198 °C
- Flash pt. ~ 82 °C
- Ignition temp.: 270 °C

- Vapour pressure: (20 °C) 0,3 hPa
- Refraction index: (n 20 °C/D) 1,4291
- LD 50 (oral, rat): > 5000 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2905 16 80 00
- Applications: laboratory reagent, synthesis of organic products, perfumery.

## AL0393 n-Octyl alcohol, extra pure



assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,824 - 0,826  
 free acid (as  $C_7H_{15}COOH$ ) . . . . .max. 0,005 %

foreign alcohols . . . . .max. 1 %  
 substances darkened by  $H_2SO_4$  . . . . .passes test  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AL03931000	1 l	Ø

## AL0395 n-Octyl alcohol, reagent grade



assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,824 - 0,826  
 appearance . . . . .clear  
 acidity . . . . .max. 0,0002 meq/g  
 colour (Hazen) . . . . .max. 10  
 aldehydes + ketones (as  $C_7H_{15}CHO$ ) . . . . .max. 0,01 %  
 arsenic (As) . . . . .max. 0,00001 %  
 cadmium (Cd) . . . . .max. 0,000005 %

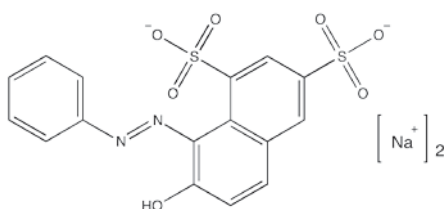
calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 heavy metals (as Pb) . . . . .max. 0,00001 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %

nickel (Ni) . . . . .max. 0,000002 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 substances darkened by  $H_2SO_4$  . . . . .passes test  
 residue on ignition . . . . .max. 0,02 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
AL03951000	1 l	Ø

## Orange G, C.I. 16230

## AN0030 Orange G, C.I. 16230, for microscopy



- $C_{16}H_{10}N_2Na_2O_7S_2$
- M = 452,36 g/mol
- CAS [1936-15-8]
- EINECS-No.: 217-705-6
- Solub. in water: (20 °C): ~ 70 g/l
- LD 50 (oral, rat): > 3000 mg/kg
- Tariff number: 3204 12 00 00
- Applications: analytical chemistry, indicator, microscopy.

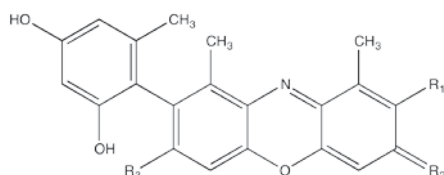
## Specifications:

suitability for microscopy . . . . .passes test

Art. No.	Volume	Container
AN00300025	25 g	Ø
AN00300100	100 g	Ø

## Orcein

## OR0020 Orcein, for microscopy



- Synonyms: Natural Red 28
- CAS [1400-62-0]
- EINECS-No.: 215-750-6
- Solub. in water: (25 °C): almost insoluble
- Tariff number: 3203 00 19 00
- Applications: microscopy, dye (for biology).

Absorptivity ( $A_{1\%}/1\text{ cm}$ ;  $\lambda$  max.) . . . . .600 - 800

## Specifications:

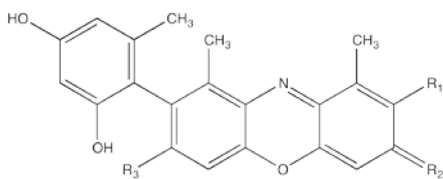
Absorption maximum  $\lambda$  (in NaOH 0,01 mol/l) . . . 575 - 580 nm

Art. No.	Volume	Container
OR00200005	5 g	Ø
OR00200025	25 g	Ø

# Orcein

## Orcein, solution A

### OR0021 Orcein, solution A, for microscopy



- Synonyms: Natural red 28
- CAS [1400-62-0]
- EINECS-No.: 215-750-6
- Density: 1,06 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C9 II UN 1760
- IMDG: 8 II UN 1760
- IATA/ICAO: 8 II UN 1760
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3203 00 19 00
- Applications: microscopy (dye).

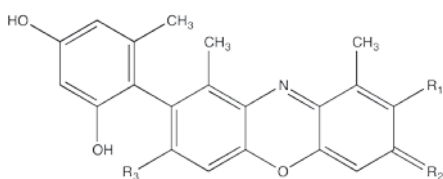
#### Specifications:

suitability for microscopy . . . . .passes test

Art. No.	Volume	Container
OR00210100	100 ml	0

## Orcein, solution B

### OR0022 Orcein, solution B, for microscopy



- Synonyms: Natural red 28
- CAS [1400-62-0]
- EINECS-No.: 215-750-6
- Density: 1,06 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C9 II UN 1760
- IMDG: 8 II UN 1760
- IATA/ICAO: 8 II UN 1760
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3203 00 19 00
- Applications: microscopy (dye).

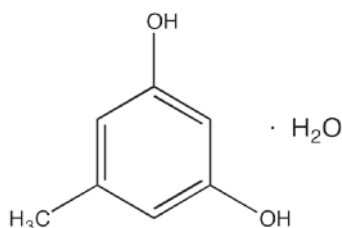
#### Specifications:

suitability for microscopy . . . . .passes test

Art. No.	Volume	Container
OR00220100	100 ml	0

## Orcinol monohydrate

### OR0035 Orcinol monohydrate, extra pure, Reag. Ph Eur



- Synonyms: 5-Methylresorcinol, 3,5-Dihydroxytoluene monohydrate
- C<sub>7</sub>H<sub>8</sub>O<sub>2</sub>·H<sub>2</sub>O
- M = 124,14 g/mol
- CAS [6153-39-5]
- EINECS-No.: 207-984-2
- Melting point: 108-110 °C
- Boiling point: (7 hPa) 147 °C
- Flash pt. >140 °C
- LD 50 (oral, rat): 844 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a

- Tariff number: 2907 29 00 90
- Applications: laboratory reagent, analytical chemistry, for the detection of: sugars, aromatic aldehydes.

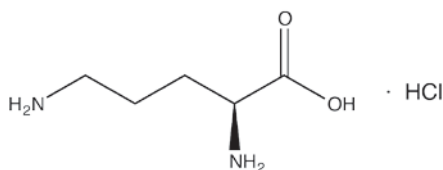
#### Specifications:

assay (G.C.) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test  
melting range . . . . .58 - 61 °C

Art. No.	Volume	Container
OR00350005	5 g	0
OR00350025	25 g	0

## L-Ornithine hydrochloride

### OR0055 L-Ornithine hydrochloride, extra pure



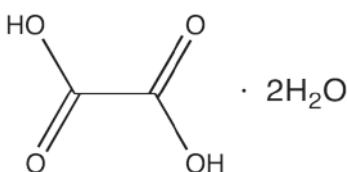
- Synonyms: L( + )-2,5-Diaminovaleric acid hydrochloride
- C<sub>5</sub>H<sub>12</sub>N<sub>2</sub>O<sub>2</sub>·HCl
- M = 168,62 g/mol
- CAS [3184-13-2]
- EINECS-No.: 221-678-6
- Solub. in water: (20 °C): 100 g/l
- Melting point: 245 °C
- LD 50 (oral, rat): 10000 mg/kg
- Tariff number: 2922 49 95 90
- Applications: analytical chemistry, for pharmaceuticals synthesizing, in biochemistry.

#### Specifications:

assay (titration with HClO<sub>4</sub>) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test  
specific rotation ([α]<sub>D</sub><sup>20</sup>, c = 5, HCl 1 mol/l) +22 - +23 °  
other ninhydrin positive substances (as glycine) . . . . .max. 0,1 %  
other aminoacids . . . . .max. 0,3 %  
ammonium (NH<sub>4</sub><sup>+</sup>) . . . . .max. 0,01 %  
heavy metals (as Pb) . . . . .max. 0,001 %

Art. No.	Volume	Container
OR00550025	25 g	0

## Oxalic acid dihydrate



- Synonyms: Ethanedioic acid
- H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>·2H<sub>2</sub>O
- M = 126,07 g/mol
- CAS [6153-56-6]
- EINECS-No.: 205-634-3
- Solub. in water: (20 °C): 102 g/l
- Melting point: 101 °C
- LD 50 (oral, rat): 7500 mg/kg (anhydrous substance)
- EC-Index-No.: 607-006-00-8

- GHS-signal word: Warning
- GHS-H sentences: H302 - H312
- GHS-P sentences: P280 - P322 - P301 + P312 - P312 - P363 - P501a
- Tariff number: 2917 11 00 99
- Applications: analytical chemistry, laboratory reagent, solvents, catalyst.



**AC1721 Oxalic acid dihydrate, extra pure**

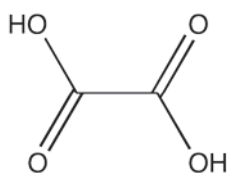
assay (permanganometric) . . . . .	min. 99 %	copper (Cu) . . . . .	max. 0,001 %
identity (IR-spectrum) . . . . .	passes test	heavy metals (as Pb) . . . . .	max. 0,001 %
insoluble in water . . . . .	max. 0,01 %	iron (Fe) . . . . .	max. 0,001 %
nitrogen compounds (as N) . . . . .	max. 0,005 %	lead (Pb) . . . . .	max. 0,001 %
chlorides (Cl) . . . . .	max. 0,002 %	magnesium (Mg) . . . . .	max. 0,005 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,01 %	nickel (Ni) . . . . .	max. 0,001 %
calcium (Ca) . . . . .	max. 0,005 %	residue on ignition (as SO <sub>4</sub> ) . . . . .	max. 0,05 %

Art. No.	Volume	Container
AC17210500	500 g	
AC17211000	1 kg	
AC1721005P	5 kg	

**AC1720 Oxalic acid dihydrate, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (permanganometric) . . . . .	99,5 - 102,5 %	copper (Cu) . . . . .	max. 0,0005 %
insoluble in water . . . . .	max. 0,005 %	heavy metals (as Pb) . . . . .	max. 0,0005 %
chlorides (Cl) . . . . .	max. 0,0005 %	iron (Fe) . . . . .	max. 0,0002 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,005 %	lead (Pb) . . . . .	max. 0,0005 %
total nitrogen (as N) . . . . .	max. 0,001 %	nickel (Ni) . . . . .	max. 0,0005 %
calcium (Ca) . . . . .	max. 0,001 %	zinc (Zn) . . . . .	max. 0,0005 %
cadmium (Cd) . . . . .	max. 0,0005 %	substances darkened by H <sub>2</sub> SO <sub>4</sub> . . . . .	passes test
cobalt (Co) . . . . .	max. 0,0005 %	residue on ignition (as SO <sub>4</sub> ) . . . . .	max. 0,01 %

Art. No.	Volume	Container
AC17200250	250 g	
AC17200500	500 g	
AC17201000	1 kg	

**Oxalic acid, volumetric solutions****AC1723 Oxalic acid, solution 0,05 mol/l (0,1 N)**

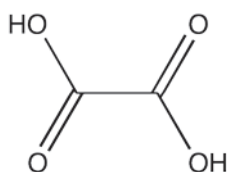
- H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>
- M = 90,04 g/mol
- CAS [144-62-7]
- EINECS-No.: 205-634-3
- Density: 0,99 g/cm<sup>3</sup>
- LD 50 (oral, rat): 7500 mg/kg (pure substance)
- EC-Index-No.: 607-006-00-8
- Tariff number: 2917 11 00 99
- Applications: analytical chemistry, laboratory reagent.

1 ml = 0,004502 g C<sub>2</sub>H<sub>2</sub>O<sub>4</sub> This volumetric solution was checked by means of potentiometric methods using a potassium permanganate standard solution, that was also checked against Scharlau's oxalic acid volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

Art. No.	Volume	Container
AC17231000	1 l	

**AC1725 Oxalic acid, solution 0,005 mol/l (0,01 N)**

- H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>
- M = 90,04 g/mol
- CAS [144-62-7]
- EINECS-No.: 205-634-3
- Density: 0,99 g/cm<sup>3</sup>
- LD 50 (oral, rat): 7500 mg/kg (pure substance)
- EC-Index-No.: 607-006-00-8
- Tariff number: 2917 11 00 99
- Applications: analytical chemistry, laboratory reagent.

1 ml = 0,0004502 g C<sub>2</sub>H<sub>2</sub>O<sub>4</sub> This volumetric solution was checked by means of potentiometric methods using a potassium permanganate standard solution, that was also checked against Scharlau's oxalic acid volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**

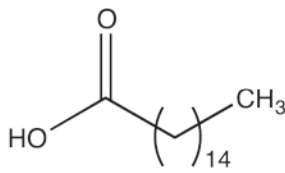
factor . . . . . 0,999 - 1,001

Art. No.	Volume	Container
AC17251000	1 l	

# Palmit

## Palmitic acid

### AC1730 Palmitic acid, synthesis grade



- Synonyms: Hexadecanoic acid
- $C_{16}H_{32}O_2$
- M = 256,43 g/mol
- CAS [57-10-3]
- EINECS-No.: 200-312-9
- Solub. in water: (20 °C): insoluble
- Melting point: 61 - 63 °C
- Boiling point: (133 hPa) 271,5 °C
- LD 50 (oral, rat): > 10000 mg/kg
- Tariff number: 2915 70 40 00

- Applications: synthesis of organic products, in food industry, perfumery, cosmetics, emulsifier.

#### Specifications:

assay (G.C.) .....min. 98 %  
identity (IR-spectrum) .....passes test

Art. No.	Volume	Container
AC17301000	1 kg	
AC1730005P	5 kg	

## Palladium(II) chloride

### PA0025 Palladium(II) chloride, approx. 59% Pd

- Synonyms: Palladium dichloride
- $PdCl_2$
- M = 177,31 g/mol
- CAS [7647-10-1]
- EINECS-No.: 231-596-2
- Density: 4,0 g/cm<sup>3</sup>
- Melting point: 678 °C
- ADR: 8 C2 III UN 3260
- IMDG: 8 III UN 3260

- IATA/ICAO: 8 III UN 3260
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2843 90 90 00
- Applications: catalyst, synthesis of organic products, photography, painting.

#### Specifications:

palladium (Pd) ..... min. 59,85 %

Art. No.	Volume	Container
PA00250001	1 g	
PA00250005	5 g	

## Papanicolaou's solution, EA-50

### S01050 Papanicolaou's solution, EA-50

- Density: 0,83 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 17 °C
- LD 50 (oral, rat): 5628 mg/kg (methanol)
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger
- GHS-H sentences: H225 - H331 - H370

- GHS-P sentences: P210 - P241 - P260 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3204 19 00 90
- Applications: for cytology, vaginal smears staining for detection of vaginal, uterine or cervical cancer.
- Appearance: Clear, green with red shades liquid

fast green FCF ..... 0,08 %  
phosphotungstic acid ..... 0,2 %  
in denaturated alcohol

Art. No.	Volume	Container
S010500500	500 ml	
S010501000	1 l	
S010502500	2,5 l	

## Papanicolaou's solution, OG-6

### S01051 Papanicolaou's solution, OG-6

- Density: 0,83 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 14 °C
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993
- GHS-signal word: Danger
- GHS-H sentences: H225

- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a
- Tariff number: 3204 12 00 00
- Applications: for cytology, vaginal smears staining for detection of vaginal, uterine or cervical cancer.
- Appearance: Clear, orange liquid

phosphotungstic acid ..... 0,015 %  
in denaturated alcohol

Art. No.	Volume	Container
S010510500	500 ml	
S010511000	1 l	
S010512500	2,5 l	

## Paraffin

### PA0112 Paraffin, pellets, melting point 56 - 58 °C

- CAS [8002-74-2]
- EINECS-No.: 232-315-6
- Solub. in water: (20 °C): insoluble
- Melting point: 56 - 58 °C
- Boiling point: > 350 °C
- Flash pt. ~ 240 °C
- Ignition temp.: > 300 °C
- LD 50 (oral, rat): > 5000 mg/kg
- Tariff number: 2712 20 90 00

- Applications: plasticizer, in the textile industry, in food industry, in explosive compositions, in the pharmaceuticals industry.

hydrocarbons .....passes test  
reaction to  $H_2SO_4$  .....passes test  
residue on ignition .....max. 0,05 %

- Specifications:**  
melting range ..... 56 - 58 °C  
acidly or alkalinely reacting  
impurities .....passes test  
polycyclic aromatic

Art. No.	Volume	Container
PA01121000	1 kg	
PA01122500	2,5 kg	
PA0112005P	5 kg	

## Paraffin plasticized, m.p. 52 - 54 °C

### PA0114 Paraffin plasticized, pellets, melting point 52 - 54 °C

- CAS [8002-74-2]
- EINECS-No.: 232-315-6
- Solub. in water: (20 °C): insoluble
- Melting point: 52 - 54 °C
- Boiling point: > 350 °C
- Flash pt. ~ 240 °C
- Ignition temp.: > 300 °C
- LD 50 (oral, rat): > 5000 mg/kg

- Tariff number: 2712 20 90 00
- Applications: analytical chemistry, laboratory reagent, for histology, in food industry, in the pharmaceuticals industry.

impurities .....passes test  
insoluble in  $C_8H_{10}$  .....passes test

- Specifications:**  
melting range ..... 52 - 54 °C  
acidly or alkalinely reacting

Art. No.	Volume	Container
PA01141000	1 kg	
PA0114005P	5 kg	

## Paraffin plasticized, m.p. 56 - 58 °C

## PA0113 Paraffin plasticized, pellets, melting point 56 - 58 °C

- CAS [8002-74-2]
- EINECS-No.: 232-315-6
- Solub. in water: (20 °C): insoluble
- Melting point: 56 - 58 °C
- Boiling point: > 350 °C
- Flash pt. ~ 240 °C
- Ignition temp.: > 300 °C
- LD 50 (oral, rat): > 5000 mg/kg

- Tariff number: 2712 20 90 00
- Applications: analytical chemistry, laboratory reagent, for histology.

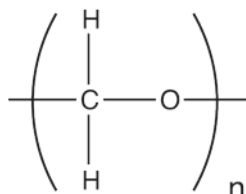
insoluble in C<sub>8</sub>H<sub>10</sub> .....passes test**Specifications:**

melting range ..... 56 - 58 °C  
 acidly or alkalinely reacting  
 impurities .....passes test

Art. No.	Volume	Container
PA01131000	1 kg	P
PA0113005P	5 kg	P

## Paraformaldehyde

## PA0095 Paraformaldehyde, extra pure



- Synonyms: Polyoxymethylene, Paraform
- (CH<sub>2</sub>O)<sub>n</sub>
- CAS [30525-89-4]
- EINECS-No.: 200-001-8
- Solub. in water: (20 °C): slightly soluble
- Melting point: 120 - 170 °C
- Flash pt. ~ 70 °C
- Ignition temp.: 370 °C
- Vapour pressure: (20 °C) 1,5 - 2 hPa
- LD 50 (oral, rat): 592 mg/kg
- ADR: 4.1 F1 III UN 2213
- IMDG: 4.1 III UN 2213
- IATA/ICAO: 4.1 III UN 2213
- GHS-signal word: Warning
- GHS-H sentences: H228 - H351 - H302 - H332 - H315 - H319 - H317 - H335
- GHS-P sentences: P210 - P241 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2912 60 00 00

- Applications: synthesis of organic products, disinfectant, cosmetics, fumigant, manufacturing of synthetic resins.
- Appearance: White powder

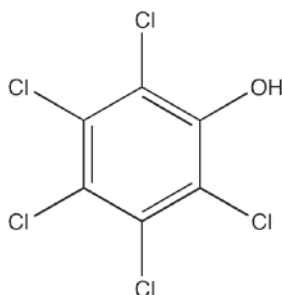
**Specifications:**

assay (acidimetric, after oxidation) ..... 95 - 100,5 %  
 identity (IR-spectrum) .....passes test  
 appearance of solution .....passes test  
 acidity or alkalinity .....passes test  
 insoluble in water .....max. 0,1 %  
 heavy metals (as Pb) .....max. 0,001 %  
 residue on ignition .....max. 0,05 %

Art. No.	Volume	Container
PA00950500	500 g	P
PA00951000	1 kg	P
PA0095025P	25 kg	P

## Pentachlorophenol

## PE0050 Pentachlorophenol, synthesis grade



- Synonyms: PCP
- C<sub>6</sub>Cl<sub>5</sub>OH
- M = 266,34 g/mol
- CAS [87-86-5]
- EINECS-No.: 201-778-6
- Solub. in water: (20 °C): slightly soluble
- Melting point: 165 - 180 °C
- Boiling point: 310 °C
- LD 50 (oral, rat): 27 mg/kg
- EC-Index-No.: 604-002-00-8
- ADR: 6.1 T2 II UN 3155
- IMDG: 6.1 II UN 3155
- IATA/ICAO: 6.1 II UN 3155
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H330 - H351 - H410 - H315 - H319 - H335

- GHS-P sentences: P301 + P310 - P305 + P351 + P338 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2908 11 00 00
- Applications: insecticide, herbicide, disinfectant, antibiotic, fungicide, manufacture of adhesives, painting, in the textile industry, in building materials.
- Appearance: Brown flakes

**Specifications:**

assay (argentometric) .....min. 97 %  
 insoluble in alkali .....max. 0,6 %  
 residue on ignition .....max. 0,1 %

Art. No.	Volume	Container
PE00500250	250 g	P
PE00501000	1 kg	P

## Pentaerythritol

## PE0070 Pentaerythritol, extra pure

- Synonyms: 2,2-Bis(hydroxymethyl)-1,3-propanediol
- C<sub>5</sub>H<sub>12</sub>O<sub>4</sub>
- M = 136,15 g/mol
- CAS [115-77-5]
- EINECS-No.: 204-104-9
- Solub. in water: (20 °C): 70 g/l
- Melting point: 256 - 258 °C
- Boiling point: (40 hPa) 276 °C
- Ignition temp.: 490 °C
- LD 50 (oral, rat): 19500 mg/kg
- Tariff number: 2905 42 00 00

- Applications: synthesis of organic products, manufacturing of synthetic resins, painting.

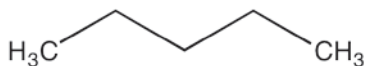
**Specifications:**

assay (DSC) .....min. 98 %  
 identity (IR-spectrum) .....passes test

Art. No.	Volume	Container
PE00701000	1 kg	P

# Pentan

## n-Pentane



- Synonyms: 1,3-Dimethylpropane, Diethyl methane
- $C_5H_{12}$
- $M = 72,15 \text{ g/mol}$
- CAS [109-66-0]
- EINECS-No.: 203-692-4
- Density:  $0,63 \text{ g/cm}^3$
- Solub. in water: ( $25 \text{ }^\circ\text{C}$ ):  $0,04 \text{ g/l}$
- Melting point:  $-129,7 \text{ }^\circ\text{C}$
- Boiling point:  $36,1 \text{ }^\circ\text{C}$
- Flash pt.  $-48 \text{ }^\circ\text{C}$
- Ignition temp.:  $285 \text{ }^\circ\text{C}$
- Vapour pressure: ( $20 \text{ }^\circ\text{C}$ )  $573 \text{ hPa}$
- Dielectric const.: ( $20 \text{ }^\circ\text{C}$ )  $1,8$

- EC-Index-No.: 601-006-00-1 [1]
- ADR: 3 F1 II UN 1265
- IMDG: 3 II UN 1265
- IATA/ICAO: 3 II UN 1265
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H336 - H411 - EUH066
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2901 10 00 00
- Applications: synthesis of organic products, analytical chemistry, reference material, chromatography.

### PE0092 n-Pentane, 95%, synthesis grade



assay (G.C.)	min. 95 %
density ( $20^\circ/4^\circ$ )	0,625 - 0,628
residue on evaporation	max. 0,003 %
water (K.F.)	max. 0,02 %

Art. No.	Volume	Container
PE00921000	1 l	
PE00922500	2,5 l	
PE0092005L	5 l	
PE0092025L	25 l	

### PE0095 n-Pentane, 99%, extra pure



assay (G.C.)	min. 99 %
identity (IR-spectrum)	passes test
density ( $20^\circ/4^\circ$ )	0,625 - 0,627
acidity	max. 0,001 meq/g
copper (Cu)	max. 0,00002 %
iron (Fe)	max. 0,00006 %
lead (Pb)	max. 0,00002 %

nickel (Ni)	max. 0,00002 %
isopentane (G.C.)	max. 1 %
sulfur compounds (as S)	max. 0,005 %
substances darkened by $H_2SO_4$	passes test
residue on evaporation	max. 0,001 %
water (K.F.)	max. 0,01 %

Art. No.	Volume	Container
PE00951000	1 l	
PE00952500	2,5 l	
PE0095005L	5 l	
PE0095025A	25 l	

### PE0096 n-Pentane, 99%, reagent grade



assay (G.C.)	min. 99 %
identity (IR-spectrum)	passes test
density ( $20^\circ/4^\circ$ )	0,625 - 0,627
colour (Hazen)	max. 10
acidity	max. 0,0002 meq/g
aluminium (Al)	max. 0,00005 %
barium (Ba)	max. 0,00001 %
boron (B)	max. 0,000002 %
cadmium (Cd)	max. 0,000005 %
calcium (Ca)	max. 0,00005 %

chromium (Cr)	max. 0,000002 %
cobalt (Co)	max. 0,000002 %
copper (Cu)	max. 0,000002 %
iron (Fe)	max. 0,00001 %
lead (Pb)	max. 0,00001 %
magnesium (Mg)	max. 0,00001 %
manganese (Mn)	max. 0,000002 %
nickel (Ni)	max. 0,000002 %
tin (Sn)	max. 0,00001 %
zinc (Zn)	max. 0,00001 %

sulfur compounds (as S)	max. 0,005 %
substances darkened by $H_2SO_4$	passes test
residue on evaporation	max. 0,001 %
water (K.F.)	max. 0,01 %

Art. No.	Volume	Container
PE00961000	1 l	
PE00962500	2,5 l	

### PE0097 n-Pentane, 99%, HPLC grade



assay (G.C.)	min. 99 %
identity (IR-spectrum)	passes test
density ( $20^\circ/4^\circ$ )	0,625 - 0,627
acidity	max. 0,0002 meq/g
alkalinity	max. 0,0002 meq/g
residue on evaporation	max. 0,0002 %
water (K.F.)	max. 0,01 %

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:	T(%) A (AU)
210 nm.	50 % 0,301 AU
230 nm.	90 % 0,046 AU
240 nm.	98 % 0,010 AU
Microfiltered through membranes of pore diameter 0,22 $\mu\text{m}$	

Art. No.	Volume	Container
PE00971000	1 l	
PE00972500	2,5 l	

### PE0099 n-Pentane, 99%, for GC residue analysis



assay (G.C.)	min. 99,5 %
identity (IR-spectrum)	passes test
density ( $20^\circ/4^\circ$ )	0,625 - 0,627
residue on evaporation	max. 0,0001 %
water (K.F.)	max. 0,01 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis.  
ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 3  $\mu\text{g/ml}$  as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
PE00991000	1 l	
PE00992500	2,5 l	

### PE0100 n-Pentane, 99%, GC ultra-trace analysis grade



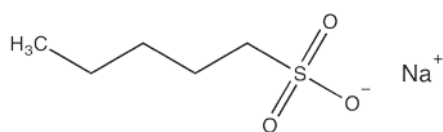
assay (G.C.)	min. 99,5 %
identity (IR-spectrum)	passes test
density ( $20^\circ/4^\circ$ )	0,625 - 0,627
residue on evaporation	max. 0,0001 %
water (K.F.)	max. 0,01 %
Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 2 $\mu\text{g/ml}$ as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl.	

Suitable for highly volatile halogenated hydrocarbons trace analysis. ECD, from dichloromethane to 1,2,4-trichlorobenzene, no peaks are obtained greater than 1  $\text{ng/ml}$  as tetrachloromethane.  
Suitable for pesticide and polycyclic aromatic hydrocarbons residue analysis. FID, from 1-octanol to 1-tetradecanol, no peaks are obtained greater than 2  $\text{ng/ml}$  as 1-tetradecanol. No peaks are obtained in vicinity of pyrene.

Art. No.	Volume	Container
PE01001000	1 l	
PE01002500	2,5 l	

## 1-Pentane sulfonic acid, sodium salt, HPLC solutions

## AC1740 1-Pentane sulfonic acid, sodium salt, solution 0,1 mol/l, HPLC grade



- $C_5H_{11}NaO_3S$
- $M = 174,20$  g/mol
- CAS [22767-49-3]
- EINECS-No.: 245-208-4
- Tariff number: 2904 10 00 90
- Applications: laboratory reagent, analytical chemistry, chromatography.

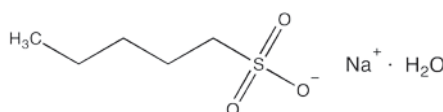
pH (20 °C) . . . . . 3,4 - 3,6  
 absorbance of an aqueous solution 0,005 M in a 1 cm cell at 254 nm . . . . . < 0,02 AU  
 Contains acetic acid as preservative  
 To obtain a solution 0,005 M dilute 1:20 with the appropriate mixture of water-solvent

**Specifications:**  
 factor limits. . . . . 0,995 - 1,005

Art. No.	Volume	Container
AC17400250	250 ml	0

## 1-Pentane sulfonic acid, sodium salt monohydrate

## AC1745 1-Pentane sulfonic acid, sodium salt monohydrate, HPLC grade



- Synonyms: Sodium 1-pentylsulfonate monohydrate
- $C_5H_{11}NaO_3S \cdot H_2O$
- $M = 192,21$  g/mol
- CAS [207605-40-1]
- EINECS-No.: 245-208-4
- Solub. in water: (20 °C): freely soluble
- Tariff number: 2904 10 00 90
- Applications: analytical chemistry, chromatography.

insoluble matter . . . . . passes test  
 max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength: absorbance:  
 210 nm. . . . . 0,1 AU  
 220 nm. . . . . 0,06 AU  
 230 nm. . . . . 0,04 AU  
 260 nm. . . . . 0,02 AU

**Specifications:**  
 assay (acidimetric) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test

Art. No.	Volume	Container
AC17450025	25 g	0
AC17450100	100 g	0

## Pepsin 1:3000

PE0120 Pepsin 1:3000, Pharmed®<sup>®</sup>, NF

- Synonyms: Puerzym
- CAS [9001-75-6]
- EINECS-No.: 232-629-3
- Solub. in water: (20 °C): soluble
- EC-Index-No.: 647-008-00-6
- GHS-signal word: Danger
- GHS-H sentences: H334 - H335 - H315 - H319
- GHS-P sentences: P285 - P261 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 3507 90 90 90
- Applications: analytical chemistry, laboratory reagent, in the pharmaceuticals industry, in food industry, in biochemistry (enzyme).

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

**Specifications:**  
 pH (5 %,  $H_2O$ ) . . . . . approx. 3,7  
 activity . . . . . 1:3000 NF  
 enzymatic activity . . . . . 0,5 U/mg

Art. No.	Volume	Container
PE01200100	100 g	0

## Pepsin 1:10000

PE0125 Pepsin 1:10000, Pharmed®<sup>®</sup>, NF

- Synonyms: Puerzym
- CAS [9001-75-6]
- EINECS-No.: 232-629-3
- Solub. in water: (20 °C): soluble
- EC-Index-No.: 647-008-00-6
- GHS-signal word: Danger
- GHS-H sentences: H334 - H335 - H315 - H319
- GHS-P sentences: P285 - P261 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 3507 90 90 90
- Applications: analytical chemistry, laboratory reagent, in the pharmaceuticals industry, in food industry, in biochemistry (enzyme).

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

**Specifications:**  
 pH (5 %,  $H_2O$ ) . . . . . 3,5 - 4,5  
 activity . . . . . 1:10000 NF  
 enzymatic activity . . . . . 0,2 U/mg

Art. No.	Volume	Container
PE01250100	100 g	0
PE01251000	1 kg	0

## Perchloric acid, 70%

- $HClO_4$
- $M = 100,46$  g/mol
- CAS [7601-90-3]
- EINECS-No.: 231-512-4
- Density: 1,68 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -18 °C

- Boiling point: 198,7 °C
- LD 50 (oral, rat): 1100 mg/kg (anhydrous substance)
- EC-Index-No.: 017-006-00-4
- ADP: 5.1 OC1 | UN 1873
- IMDG: 5.1 | UN 1873
- IATA/ICAO: 5.1 | UN 1873
- GHS-signal word: Danger

- GHS-H sentences: H271 - H314
- GHS-P sentences: P221 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2811 19 80 90
- Applications: analytical chemistry, laboratory reagent, oxidizing agent, in explosive compositions.

# Perchl

## AC1760 Perchloric acid, 70%, reagent grade, ACS, ISO



assay (acidimetric) . . . . .	.69 - 72 %
identity . . . . .	.passes test
colour (Hazen) . . . . .	max. 10
insoluble in C <sub>2</sub> H <sub>5</sub> OH . . . . .	max. 0,001 %
free chlorine (as Cl) . . . . .	max. 0,00005 %
total nitrogen (as N) . . . . .	max. 0,001 %
chlorates (ClO <sub>3</sub> ) . . . . .	max. 0,001 %
chlorides (Cl) . . . . .	max. 0,0003 %
phosphates and silicates (as SiO <sub>2</sub> ) . . . . .	max. 0,0005 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,001 %
aluminium (Al) . . . . .	max. 0,00005 %
arsenic (As) . . . . .	max. 0,000005 %
barium (Ba) . . . . .	max. 0,000002 %
beryllium (Be) . . . . .	max. 0,000002 %
bismuth (Bi) . . . . .	max. 0,00001 %

cadmium (Cd) . . . . .	max. 0,000005 %
calcium (Ca) . . . . .	max. 0,00005 %
cobalt (Co) . . . . .	max. 0,000005 %
copper (Cu) . . . . .	max. 0,00001 %
germanium (Ge) . . . . .	max. 0,000005 %
heavy metals (as Pb) . . . . .	max. 0,0001 %
iron (Fe) . . . . .	max. 0,0001 %
lead (Pb) . . . . .	max. 0,000005 %
lithium (Li) . . . . .	max. 0,000002 %
magnesium (Mg) . . . . .	max. 0,00005 %
manganese (Mn) . . . . .	max. 0,000002 %
molybdenum (Mo) . . . . .	max. 0,000005 %
nickel (Ni) . . . . .	max. 0,00001 %
potassium (K) . . . . .	max. 0,00001 %
silver (Ag) . . . . .	max. 0,00001 %

sodium (Na) . . . . .	max. 0,00005 %
strontium (Sr) . . . . .	max. 0,000002 %
thallium (Tl) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,00001 %
vanadium (V) . . . . .	max. 0,000005 %
zinc (Zn) . . . . .	max. 0,00001 %
zirconium (Zr) . . . . .	max. 0,00001 %
residue on ignition (as SO <sub>2</sub> ) . . . . .	max. 0,003 %

Art. No.	Volume	Container
AC17601000	1 l	
AC17601001	1 l	
AC17602500	2,5 l	

## AC1761 Perchloric acid, 70%, ppb-trace analysis grade, Ultratrace®



assay (acidimetric) . . . . .	.65 - 71 %
colour (Hazen) . . . . .	max. 10
aluminium (Al) . . . . .	max. 1 ppb
antimony (Sb) . . . . .	max. 0,5 ppb
arsenic (As) . . . . .	max. 0,5 ppb
barium (Ba) . . . . .	max. 1 ppb
beryllium (Be) . . . . .	max. 0,5 ppb
bismuth (Bi) . . . . .	max. 0,5 ppb
cadmium (Cd) . . . . .	max. 1 ppb
calcium (Ca) . . . . .	max. 1 ppb
cerium (Ce) . . . . .	max. 0,5 ppb
cesium (Cs) . . . . .	max. 0,5 ppb
cobalt (Co) . . . . .	max. 0,5 ppb
copper (Cu) . . . . .	max. 0,5 ppb
dysprosium (Dy) . . . . .	max. 0,5 ppb
erbium (Er) . . . . .	max. 0,5 ppb
europium (Eu) . . . . .	max. 0,5 ppb
gadolinium (Gd) . . . . .	max. 0,5 ppb
gallium (Ga) . . . . .	max. 0,5 ppb
gold (Au) . . . . .	max. 0,5 ppb

holmium (Ho) . . . . .	max. 0,5 ppb
indium (In) . . . . .	max. 0,5 ppb
iron (Fe) . . . . .	max. 1 ppb
lanthanum (La) . . . . .	max. 0,5 ppb
lead (Pb) . . . . .	max. 1 ppb
lithium (Li) . . . . .	max. 0,5 ppb
lutetium (Lu) . . . . .	max. 0,5 ppb
magnesium (Mg) . . . . .	max. 1 ppb
manganese (Mn) . . . . .	max. 1 ppb
molybdenum (Mo) . . . . .	max. 0,5 ppb
neodymium (Nd) . . . . .	max. 0,5 ppb
nickel (Ni) . . . . .	max. 1 ppb
palladium (Pd) . . . . .	max. 0,5 ppb
platinum (Pt) . . . . .	max. 0,5 ppb
potassium (K) . . . . .	max. 1 ppb
praseodymium (Pr) . . . . .	max. 0,5 ppb
rhodium (Rh) . . . . .	max. 0,5 ppb
rubidium (Rb) . . . . .	max. 0,5 ppb
samarium (Sm) . . . . .	max. 0,5 ppb
scandium (Sc) . . . . .	max. 0,5 ppb

silver (Ag) . . . . .	max. 1 ppb
sodium (Na) . . . . .	max. 1 ppb
strontium (Sr) . . . . .	max. 0,5 ppb
tellurium (Te) . . . . .	max. 0,5 ppb
terbium (Tb) . . . . .	max. 0,5 ppb
thallium (Tl) . . . . .	max. 0,5 ppb
thorium (Th) . . . . .	max. 1 ppb
thulium (Tm) . . . . .	max. 0,5 ppb
tin (Sn) . . . . .	max. 1 ppb
titanium (Ti) . . . . .	max. 1 ppb
uranium (U) . . . . .	max. 0,5 ppb
vanadium (V) . . . . .	max. 0,5 ppb
ytterbium (Yb) . . . . .	max. 0,5 ppb
yttrium (Y) . . . . .	max. 0,5 ppb
zinc (Zn) . . . . .	max. 1 ppb
zirconium (Zr) . . . . .	max. 0,5 ppb

Art. No.	Volume	Container
AC17610500	500 ml	

## Perchloric acid, 60%

### AC1755 Perchloric acid, solution 60% w/w, reagent grade, ACS, ISO



- HClO<sub>4</sub>
- M = 100,46 g/mol
- CAS [7601-90-3]
- EINECS-No.: 231-512-4
- Density: 1,53 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: ~ 160 °C
- LD 50 (oral, rat): 1100 mg/kg (anhydrous substance)
- EC-Index-No.: 017-006-00-4
- ADR: 5.1 OC1 I UN 1873
- IMDG: 5.1 I UN 1873
- IATA/ICAO: 5.1 I UN 1873
- GHS-signal word: Danger
- GHS-H sentences: H272 - H314
- GHS-P sentences: P221 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2811 19 80 90
- Applications: analytical chemistry, laboratory reagent, oxidizing agent, in explosive compositions.

#### Specifications:

assay (acidimetric) . . . . .	.60 - 62 %
colour (Hazen) . . . . .	max. 10

insoluble in C <sub>2</sub> H <sub>5</sub> OH . . . . .	max. 0,001 %
total nitrogen (as N) . . . . .	max. 0,001 %
chlorides (Cl) . . . . .	max. 0,0003 %
chlorates (ClO <sub>3</sub> ) . . . . .	max. 0,001 %
phosphates and silicates (as SiO <sub>2</sub> ) . . . . .	max. 0,0005 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,001 %
free chlorine (as Cl) . . . . .	max. 0,00005 %
aluminium (Al) . . . . .	max. 0,000005 %
arsenic (As) . . . . .	max. 0,000005 %
barium (Ba) . . . . .	max. 0,000002 %
beryllium (Be) . . . . .	max. 0,000002 %
bismuth (Bi) . . . . .	max. 0,00001 %
cadmium (Cd) . . . . .	max. 0,000005 %
calcium (Ca) . . . . .	max. 0,00005 %
cobalt (Co) . . . . .	max. 0,000005 %
copper (Cu) . . . . .	max. 0,00001 %
germanium (Ge) . . . . .	max. 0,000005 %
heavy metals (as Pb) . . . . .	max. 0,0001 %
iron (Fe) . . . . .	max. 0,0001 %
lead (Pb) . . . . .	max. 0,000005 %
lithium (Li) . . . . .	max. 0,000002 %
magnesium (Mg) . . . . .	max. 0,00005 %
manganese (Mn) . . . . .	max. 0,000002 %

molybdenum (Mo) . . . . .	max. 0,000005 %
nickel (Ni) . . . . .	max. 0,00001 %
potassium (K) . . . . .	max. 0,00001 %
silver (Ag) . . . . .	max. 0,00001 %
sodium (Na) . . . . .	max. 0,00005 %
strontium (Sr) . . . . .	max. 0,000002 %
thallium (Tl) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,00001 %
vanadium (V) . . . . .	max. 0,000005 %
zinc (Zn) . . . . .	max. 0,00001 %
zirconium (Zr) . . . . .	max. 0,00001 %
substances reducing KMnO <sub>4</sub> . . . . .	.passes test
residue on ignition (as SO <sub>2</sub> ) . . . . .	max. 0,003 %

Art. No.	Volume	Container
AC17551000	1 l	
AC17551001	1 l	
AC17552500	2,5 l	
AC17552501	2,5 l	

## Perchloric acid, 20%

- HClO<sub>4</sub>
- M = 100,46 g/mol
- CAS [7601-90-3]
- EINECS-No.: 231-512-4
- Density: 1,12 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Refraction index: (n 20 °C/D) 1,347

- LD 50 (oral, rat): 1100 mg/kg (anhydrous substance)
- EC-Index-No.: 017-006-00-4
- ADR: 8 CO1 II UN 1802
- IMDG: 8 II UN 1802
- IATA/ICAO: 8 II UN 1802
- GHS-signal word: Danger
- GHS-H sentences: H272 - H314

- GHS-P sentences: P221 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2811 19 80 90
- Applications: analytical chemistry, laboratory reagent, oxidizing agent, in explosive compositions.

### AC1752 Perchloric acid, solution 20% w/w, extra pure



assay (acidimetric) . . . . .	approx. 20 %
chlorine (Cl) . . . . .	max. 0,0005 %
chlorates (ClO <sub>3</sub> ) . . . . .	max. 0,005 %
chlorides (Cl) . . . . .	max. 0,001 %
phosphates and silicates (as SiO <sub>2</sub> ) . . . . .	max. 0,002 %

sulfates (SO <sub>4</sub> ) . . . . .	max. 0,003 %
nitrogen compounds (as N) . . . . .	max. 0,005 %
arsenic (As) . . . . .	max. 0,0001 %
iron (Fe) . . . . .	max. 0,0005 %
lead (Pb) . . . . .	max. 0,0005 %
nickel (Ni) . . . . .	max. 0,0005 %

residue on ignition (as SO <sub>2</sub> ) . . . . .	max. 0,01 %
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Art. No.	Volume	Container
AC17521000	1 l	

**AC1753 Perchloric acid, solution 20% w/w, reagent grade**

assay (acidimetric) ..... approx. 20 %  
 identity ..... passes test  
 colour (Hazen) ..... max. 10  
 insoluble in C<sub>2</sub>H<sub>5</sub>OH ..... max. 0,001 %  
 free chlorine (as Cl) ..... max. 0,00005 %  
 total nitrogen (as N) ..... max. 0,001 %  
 chlorates (ClO<sub>3</sub>) ..... max. 0,001 %  
 chlorides (Cl) ..... max. 0,0003 %  
 phosphates and silicates (as SiO<sub>2</sub>) ..... max. 0,0005 %  
 sulfates (SO<sub>4</sub>) ..... max. 0,001 %  
 aluminium (Al) ..... max. 0,000005 %  
 arsenic (As) ..... max. 0,000005 %  
 barium (Ba) ..... max. 0,000002 %  
 beryllium (Be) ..... max. 0,000002 %  
 bismuth (Bi) ..... max. 0,00001 %

cadmium (Cd) ..... max. 0,000005 %  
 calcium (Ca) ..... max. 0,00005 %  
 cobalt (Co) ..... max. 0,000005 %  
 copper (Cu) ..... max. 0,00001 %  
 germanium (Ge) ..... max. 0,000005 %  
 heavy metals (as Pb) ..... max. 0,0001 %  
 iron (Fe) ..... max. 0,0001 %  
 lead (Pb) ..... max. 0,000005 %  
 lithium (Li) ..... max. 0,000002 %  
 magnesium (Mg) ..... max. 0,00005 %  
 manganese (Mn) ..... max. 0,000002 %  
 molybdenum (Mo) ..... max. 0,000005 %  
 nickel (Ni) ..... max. 0,00001 %  
 potassium (K) ..... max. 0,00001 %  
 silver (Ag) ..... max. 0,00001 %

sodium (Na) ..... max. 0,00005 %  
 strontium (Sr) ..... max. 0,000002 %  
 thallium (Tl) ..... max. 0,000005 %  
 titanium (Ti) ..... max. 0,00001 %  
 vanadium (V) ..... max. 0,000005 %  
 zinc (Zn) ..... max. 0,00001 %  
 zirconium (Zr) ..... max. 0,00001 %  
 residue on ignition (as SO<sub>4</sub>) ..... max. 0,003 %

Art. No.	Volume	Container
AC17531000	1 l	0
AC17532500	2,5 l	0

**Perchloric acid, volumetric solutions****AC1765 Perchloric acid, solution in acetic acid 0,1 mol/l (0,1 N)**

• HClO<sub>4</sub>  
 • M = 100,46 g/mol  
 • CAS [7601-90-3]  
 • EINECS-No.: 231-512-4  
 • Density: 1,06 g/cm<sup>3</sup>  
 • Flash pt. 40 °C  
 • Ignition temp.: ~ 485 °C  
 • LD 50 (oral, rat): 3310 mg/kg (solvent)  
 • ADR: 8 CF1 II UN 2789  
 • IMDG: 8 II UN 2789  
 • IATA/ICAO: 8 II UN 2789  
 • GHS-signal word: Danger

• GHS-H sentences: H314 - H226  
 • GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a  
 • Tariff number: 2811 19 80 90  
 • Applications: laboratory reagent, analytical chemistry, titrant in volumetric analysis.

**Specifications:**

factor ..... 0,995 - 1,005  
 uncertainty ± 0,001  
 1 ml = 0,01005 g HClO<sub>4</sub>  
 water (K.F.) ..... 0,1 - 0,2 %

This volumetric solution was checked by means of potentiometric methods using Scharlab's tris(hydroxymethyl)-aminomethane volumetric standard. Scharlab's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC17651000	1 l	0

**Petroleum ether, boiling range 30 - 40 °C****ET0088 Petroleum ether, boiling range 30 - 40 °C, extra pure, Reag. Ph Eur**

• Synonyms: Petroleum benzene, Petroleum spirit  
 • CAS [64742-49-0]  
 • EINECS-No.: 265-151-9  
 • Density: 0,65 g/cm<sup>3</sup>  
 • Solub. in water: (20 °C): non-miscible  
 • Boiling point: 30 - 40 °C  
 • Flash pt. ~ -30 °C  
 • Ignition temp.: ~ 250 °C  
 • Vapour pressure: ( 20 °C ) ~ 350 hPa  
 • EC-Index-No.: 649-328-00-1  
 • ADR: 3 F1 I UN 1268  
 • IMDG: 3 I UN 1268  
 • IATA/ICAO: 3 I UN 1268

• GHS-signal word: Danger  
 • GHS-H sentences: H224 - H304 - H336 - H411 - EUH066  
 • GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a  
 • Tariff number: 2710 12 25 99  
 • Applications: solvents, analytical chemistry.

**Specifications:**

boiling range. .... 30 - 40 °C  
 density (20°/20°) ..... 0,620 - 0,630  
 acidity. .... max. 0,001 meq/g  
 copper (Cu) ..... max. 0,00002 %

iron (Fe) ..... max. 0,00005 %  
 lead (Pb) ..... max. 0,00002 %  
 nickel (Ni) ..... max. 0,00002 %  
 aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) ..... max. 0,01 %  
 sulphur compounds (as CS<sub>2</sub>) ..... max. 0,005 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> ..... passes test  
 residue on evaporation ..... max. 0,001 %  
 water (K.F.) ..... max. 0,01 %

Art. No.	Volume	Container
ET00881000	1 l	0
ET0088005M	5 l	0

**Petroleum ether, boiling range 40 - 60 °C**

• Synonyms: Petroleum benzene, Petroleum spirit  
 • CAS [64742-49-0]  
 • EINECS-No.: 265-151-9  
 • Density: (15 °C) 0,65 g/cm<sup>3</sup>  
 • Solub. in water: (20 °C): almost non-miscible  
 • Melting point: 5000 mg/kg

• EC-Index-No.: 649-328-00-1  
 • ADR: 3 F1 II UN 1268  
 • IMDG: 3 II UN 1268  
 • IATA/ICAO: 3 II UN 1268  
 • GHS-signal word: Danger  
 • GHS-H sentences: H224 - H304 - H412

• GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a  
 • Tariff number: 2710 12 25 99  
 • Applications: solvents, analytical chemistry.  
 • Appearance: Clear liquid

**ET0090 Petroleum ether, boiling range 40 - 60 °C, synthesis grade**

boiling range. .... 40 - 60 °C  
 density (20°/4°) ..... 0,640 - 0,655  
 residue on evaporation ..... max. 0,005 %  
 water (K.F.) ..... max. 0,05 %

Art. No.	Volume	Container
ET00901000	1 l	0
ET00902500	2,5 l	0
ET0090005M	5 l	0
ET0090007E	7 l	0
ET0090025L	25 l	0

**ET0091 Petroleum ether, boiling range 40 - 60 °C, extra pure**

boiling range. .... 40 - 60 °C  
 density (20°/4°) ..... 0,640 - 0,655  
 acidity. .... max. 0,001 meq/g  
 aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) ..... max. 0,01 %  
 n-hexane (G.C.) ..... max. 2 %  
 copper (Cu) ..... max. 0,00002 %  
 iron (Fe) ..... max. 0,00005 %  
 lead (Pb) ..... max. 0,00002 %  
 nickel (Ni) ..... max. 0,00002 %

sulphur compounds (as CS<sub>2</sub>) ..... max. 0,01 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> ..... passes test  
 residue on evaporation ..... max. 0,001 %  
 water (K.F.) ..... max. 0,02 %

Art. No.	Volume	Container
ET00911000	1 l	0
ET00912500	2,5 l	0
ET0091005M	5 l	0
ET0091007E	7 l	0
ET0091025A	25 l	0
ET0091025S	25 l	0

# Petrol

## ET0092 Petroleum ether, boiling range 40 - 60 °C, reagent grade, ACS, ISO

boiling range (40 - 60 °C) . . . . .	min. 90 % vol.	iron (Fe) . . . . .	max. 0,00001 %
density (20°/4°) . . . . .	0,640 - 0,655	lead (Pb) . . . . .	max. 0,00001 %
colour (Hazen) . . . . .	max. 10	magnesium (Mg) . . . . .	max. 0,00001 %
acidity . . . . .	max. 0,0003 meq/g	manganese (Mn) . . . . .	max. 0,000002 %
iodine index . . . . .	max. 0,3	nickel (Ni) . . . . .	max. 0,000002 %
aluminium (Al) . . . . .	max. 0,00005 %	tin (Sn) . . . . .	max. 0,00001 %
barium (Ba) . . . . .	max. 0,000001 %	zinc (Zn) . . . . .	max. 0,00001 %
boron (B) . . . . .	max. 0,000002 %	aromatic hydrocarbons (as	
cadmium (Cd) . . . . .	max. 0,000005 %	$C_{6-16}$ ) . . . . .	max. 0,02 %
calcium (Ca) . . . . .	max. 0,00005 %	sulfur compounds (as S) . . . . .	max. 0,005 %
chromium (Cr) . . . . .	max. 0,000002 %	substances darkened by $H_2SO_4$ . . . . .	passes test
cobalt (Co) . . . . .	max. 0,000002 %	residue on evaporation . . . . .	max. 0,0005 %
copper (Cu) . . . . .	max. 0,000002 %	water (K.F.) . . . . .	max. 0,01 %

Art. No.	Volume	Container
ET00921000	1 l	
ET00922500	2,5 l	
ET00924000	4 l	
ET0092005M	5 l	
ET0092007E	7 l	
ET0092025A	25 l	
ET0092025S	25 l	

## ET0095 Petroleum ether, boiling range 40 - 60 °C, Multisolvant® HPLC grade ACS ISO UV-VIS

boiling range (40 - 60 °C) . . . . .	min. 90 % vol	copper (Cu) . . . . .	max. 0,000002 %
density (20°/4°) . . . . .	0,640 - 0,655	iron (Fe) . . . . .	max. 0,000002 %
colour (Hazen) . . . . .	max. 10	lead (Pb) . . . . .	max. 0,00001 %
appearance . . . . .	clear	magnesium (Mg) . . . . .	max. 0,00001 %
acidity . . . . .	max. 0,0003 meq/g	manganese (Mn) . . . . .	max. 0,000001 %
iodine index . . . . .	max. 0,3	nickel (Ni) . . . . .	max. 0,000002 %
peroxide index . . . . .	max. 0,3	tin (Sn) . . . . .	max. 0,00001 %
aluminium (Al) . . . . .	max. 0,00001 %	zinc (Zn) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000001 %	aromatic hydrocarbons (as $C_6H_6$ ) . . . . .	max. 0,005 %
boron (B) . . . . .	max. 0,000002 %	sulfur compounds (as S) . . . . .	max. 0,005 %
cadmium (Cd) . . . . .	max. 0,000001 %	substances darkened by $H_2SO_4$ . . . . .	passes test
calcium (Ca) . . . . .	max. 0,000003 %	residue on evaporation . . . . .	max. 0,0002 %
chromium (Cr) . . . . .	max. 0,000002 %	water (K.F.) . . . . .	max. 0,01 %
cobalt (Co) . . . . .	max. 0,000002 %		

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:		T(%)	A (AU)
210 nm . . . . .		10 %	1,000 AU
230 nm . . . . .		90 %	0,046 AU
250 nm . . . . .		98 %	0,009 AU
Microfiltered through membranes of pore diameter 0,22 µm			

Art. No.	Volume	Container
ET00951000	1 l	
ET00952500	2,5 l	
ET00954000	4 l	
ET0095007E	7 l	

## ET0098 Petroleum ether, boiling range 40 - 60 °C, for GC residue analysis

density (20°/4°) . . . . .	0,640 - 0,655
residue on evaporation . . . . .	max. 0,0001 %
water (K.F.) . . . . .	max. 0,01 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 3 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
ET00981000	1 l	
ET00982500	2,5 l	

## ET0099 Petroleum ether, boiling range 40 - 60 °C, GC ultra-trace analysis grade

density (20°/4°) . . . . .	0,640 - 0,655
residue on evaporation . . . . .	max. 0,0001 %
water (K.F.) . . . . .	max. 0,01 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 2 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl. Suitable for highly volatile halogenated hydrocarbons trace analysis. ECD, from dichloromethane to 1,2,4-trichlorobenzene, no peaks are obtained greater than 1 ng/ml as tetrachloromethane.

Suitable for pesticide and polycyclic aromatic hydrocarbons residue analysis. FID, from 1-decanol to 1-tetradecanol, no peaks are obtained greater than 2 ng/ml as 1-tetradecanol. No peaks are obtained in vicinity of pyrene.

Art. No.	Volume	Container
ET00991000	1 l	
ET00992500	2,5 l	

## Petroleum ether, boiling range 50 - 70 °C

### ET0096 Petroleum ether, boiling range 50 - 70 °C, extra pure, Reag. Ph Eur

- Synonyms: Petroleum benzine, Petroleum spirit
- CAS [64742-49-0]
- EINECS-No.: 265-151-9
- Density: (15 °C) 0,655 - 0,67 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: 5000 mg/kg
- EC-Index-No.: 649-328-00-1
- ADR: 3 F1 II UN 1268
- IMDG: 3 II UN 1268
- IATA/ICAO: 3 II UN 1268
- GHS-signal word: Danger

- GHS-H sentences: H224 - H304 - H361 - H373 - H315 - H336 - H411
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2710 12 25 99
- Applications: solvents, analytical chemistry.

#### Specifications:

boiling range . . . . .	50 - 70 °C
density (20°/20°) . . . . .	0,661 - 0,664
acidity . . . . .	max. 0,0001 meq/g
copper (Cu) . . . . .	max. 0,00002 %

iron (Fe) . . . . .	max. 0,00005 %
lead (Pb) . . . . .	max. 0,00002 %
nickel (Ni) . . . . .	max. 0,00002 %
aromatic hydrocarbons (as $C_6H_6$ ) . . . . .	max. 0,075 %
sulphur compounds (as $CS_2$ ) . . . . .	max. 0,01 %
substances darkened by $H_2SO_4$ . . . . .	passes test
residue on evaporation . . . . .	max. 0,001 %
water (K.F.) . . . . .	max. 0,01 %

Art. No.	Volume	Container
ET00961000	1 l	

### Petroleum ether, boiling range 60 - 80 °C

- Synonyms: Petroleum benzine, Petroleum spirit
- CAS [64742-49-0]
- EINECS-No.: 265-151-9
- Density: 0,68 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Boiling point: 60 - 80 °C
- Flash pt. < -20 °C

- Ignition temp.: 260 °C
- Vapour pressure: (20 °C) - 200 hPa
- EC-Index-No.: 649-328-00-1
- ADR: 3 F1 II UN 1268
- IMDG: 3 II UN 1268
- IATA/ICAO: 3 II UN 1268
- GHS-signal word: Danger

- GHS-H sentences: H224 - H304 - H361 - H373 - H315 - H336 - H411
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2710 12 25 99
- Applications: analytical chemistry, solvents, chromatography.



## ET0100 Petroleum ether, boiling range 60 - 80 °C, extra pure



boiling range. . . . .	60 - 80 °C	nickel (Ni) . . . . .	max. 0,00002 %
acidity. . . . .	max. 0,001 meq/g	lead (Pb). . . . .	max. 0,00002 %
aromatics . . . . .	max. 0,1 %	sulphur compounds (as CS <sub>2</sub> ) . . . . .	max. 0,005 %
copper (Cu) . . . . .	max. 0,00002 %	residue on evaporation . . . . .	max. 0,001 %
iron (Fe) . . . . .	max. 0,00005 %	water (K.F.) . . . . .	max. 0,01 %

Art. No.	Volume	Container
ET01001000	1 l	0
ET01002500	2,5 l	0
ET0100005L	5 l	0

## ET0101 Petroleum ether, boiling range 60 - 80 °C, reagent grade



boiling range. . . . .	60 - 80 °C	copper (Cu) . . . . .	max. 0,000002 %
density (20°/4°) . . . . .	0,650 - 0,710	iron (Fe) . . . . .	max. 0,00001 %
colour (Hazen) . . . . .	max. 10	lead (Pb). . . . .	max. 0,00001 %
acidity. . . . .	max. 0,0003 meq/g	magnesium (Mg). . . . .	max. 0,00001 %
aluminium (Al) . . . . .	max. 0,00005 %	manganese (Mn). . . . .	max. 0,000002 %
barium (Ba). . . . .	max. 0,00001 %	nickel (Ni) . . . . .	max. 0,000002 %
boron (B) . . . . .	max. 0,000002 %	tin (Sn) . . . . .	max. 0,00001 %
cadmium (Cd). . . . .	max. 0,000005 %	zinc (Zn) . . . . .	max. 0,00001 %
calcium (Ca) . . . . .	max. 0,00005 %	iodine number . . . . .	max. 0,3
chromium (Cr). . . . .	max. 0,000002 %	aromatic hydrocarbons (as C <sub>6</sub> H <sub>6</sub> ) . . . . .	max. 0,005 %
cobalt (Co) . . . . .	max. 0,000002 %	sulfur compounds (as S) . . . . .	max. 0,005 %

substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
residue on evaporation . . . . . max. 0,0005 %  
water (K.F.) . . . . . max. 0,01 %

Art. No.	Volume	Container
ET01011000	1 l	0
ET01012500	2,5 l	0

## Petroleum ether, boiling range 65 - 95 °C

### ET0105 Petroleum ether, boiling range 65 - 95 °C, extra pure



- Synonyms: Petroleum benzene, Petroleum spirit
- CAS [64742-49-0]
- EINECS-No.: 265-151-9
- Density: ~ 0,67 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: 200 °C
- Vapour pressure: (38 °C) ~ 270 hPa
- EC-Index-No.: 649-328-00-1
- ADR: 3 F1 II UN 1268
- IMDG: 3 II UN 1268
- IATA/ICAO: 3 II UN 1268
- GHS-signal word: Danger

- GHS-H sentences: H224 - H304 - H361 - H373 - H315 - H336 - H411
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2710 12 25 99
- Applications: solvents, analytical chemistry.

iron (Fe) . . . . . max. 0,00005 %  
nickel (Ni) . . . . . max. 0,00002 %  
aromatic hydrocarbons (as C<sub>6</sub>H<sub>6</sub>) . . . . . max. 0,02 %  
sulphur compounds (as CS<sub>2</sub>) . . . . . max. 0,01 %  
substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
residue on evaporation . . . . . max. 0,001 %  
water (K.F.) . . . . . max. 0,02 %

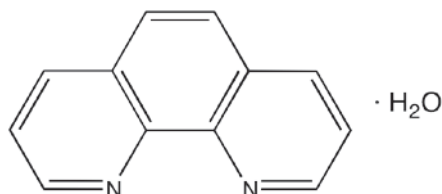
#### Specifications:

boiling range. . . . .	65 - 95 °C
acidity. . . . .	max. 0,001 meq/g
copper (Cu) . . . . .	max. 0,00002 %
lead (Pb). . . . .	max. 0,00002 %

Art. No.	Volume	Container
ET01051000	1 l	0
ET0105005M	5 l	0

## o-Phenanthroline monohydrate

### FE0100 o-Phenanthroline monohydrate, redox indicator, reagent grade, ACS



- Synonyms: 1,10-Phenanthroline monohydrate
- C<sub>12</sub>H<sub>8</sub>N<sub>2</sub>·H<sub>2</sub>O
- M = 198,24 g/mol
- CAS [5144-89-8]
- EINECS-No.: 200-629-2
- Solub. in water: (20 °C): ~ 3,3 g/l
- Melting point: 93 - 94 °C
- LD 50 (oral, rat): 132 mg/kg
- EC-Index-No.: 613-092-00-8
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H301 - H410
- GHS-P sentences: P273 - P264 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2933 99 90 90

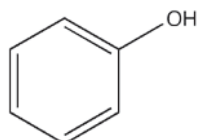
- Applications: analytical chemistry, indicator, for determination of: iron.
- Appearance: Off-white crystals

#### Specifications:

assay (titration with HClO<sub>4</sub> on dried sample) . . . . . min. 99,5 %  
identity (IR-spectrum) . . . . . passes test  
insoluble in C<sub>2</sub>H<sub>5</sub>OH . . . . . passes test  
suitability for determination of Fe . . . . . passes test  
suitability as redox indicator . . . . . passes test  
residue on ignition . . . . . max. 0,05 %  
water (K.F.) . . . . . 8,5 - 9,5 %

Art. No.	Volume	Container
FE01000005	5 g	0
FE01000025	25 g	0

## Phenol



- Synonyms: Phenic acid, Hydroxybenzene, Carboic acid
- C<sub>6</sub>H<sub>5</sub>O
- M = 94,11 g/mol
- CAS [108-95-2]
- EINECS-No.: 203-632-7
- Solub. in water: (20 °C): 84 g/l
- Melting point: 40,8 °C
- Boiling point: 181,8 °C
- Flash pt. 81 °C
- Ignition temp.: 595 °C
- Vapour pressure: (20 °C) 0,2 hPa
- LD 50 (oral, rat): 317 mg/kg
- EC-Index-No.: 604-001-00-2

- ADR: 6.1 T2 II UN 1671
- IMDG: 6.1 II UN 1671
- IATA/ICAO: 6.1 II UN 1671
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H331 - H314 - H341 - H373
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2907 11 00 00
- Applications: synthesis of organic products, disinfectant, for pharmaceuticals synthesizing, manufacture of dyes, preservative agent, analytical chemistry, laboratory reagent.

# Phenol

## FE0480 Phenol, crystallized, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (bromometric, referred to dried sample) . . . . . 99 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . passes test  
 freezing point . . . . . min. 39,5 °C  
 acidity . . . . . passes test

residue on evaporation . . . . . max. 0,05 %  
 water (K.F.) . . . . . max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
FE04800500	500 g	P
FE04801000	1 kg	P
FE0480005P	5 kg	P
FE0480025P	25 kg	P

## FE0482 Phenol, crystallized, reagent grade, ACS, Reag. Ph Eur

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0001 %  
 o-cresol (G.C.) . . . . . max. 0,05 %  
 m-cresol (G.C.) . . . . . max. 0,05 %

p-cresol (G.C.) . . . . . max. 0,05 %  
 residue on evaporation . . . . . max. 0,01 %  
 water (K.F.) . . . . . max. 0,2 %

Art. No.	Volume	Container
FE04820250	250 g	P
FE04820500	500 g	P
FE04821000	1 kg	P
FE0482005P	5 kg	P

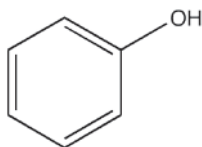
## FE0484 Phenol, molecular biology grade

assay (G.C., referred to dried sample) . . . . . 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 pH (5 %, H<sub>2</sub>O) . . . . . 4,8 - 6,0  
 chlorides (Cl) . . . . . max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0005 %

heavy metals (as Pb) . . . . . max. 0,0005 %  
 loss on drying . . . . . max. 0,5 %  
 DNases, RNases, Proteases . . . . . passes test

Art. No.	Volume	Container
FE04840100	100 g	P
FE04840500	500 g	P

## Phenol, approx. 90%



- Synonyms: Phenic acid, Hydroxybenzene, Carboic acid
- C<sub>6</sub>H<sub>5</sub>OH
- M = 94,11 g/mol
- CAS [108-95-2]
- EINECS-No.: 203-632-7
- Density: 1,06 g/cm<sup>3</sup>
- Boiling point: 180-182 °C
- Flash pt. 79 °C
- Ignition temp.: 605 °C
- Vapour pressure: (20 °C) 0,2 hPa
- LD 50 (oral, rat): 317 mg/kg (pure substance)
- EC-Index-No.: 604-001-00-2

- ADR: 6.1 T1 II UN 2821
- IMDG: 6.1 II UN 2821
- IATA/CAO: 6.1 II UN 2821
- GHS-signal word: Danger
- GHS-H sentences: H311 - H331 - H314 - H341 - H373 - H302
- GHS-P sentences: P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2907 11 00 00
- Applications: synthesis of organic products, disinfectant, for pharmaceuticals synthesizing, manufacture of dyes, preservative agent, analytical chemistry, laboratory reagent.

## FE0478 Phenol, approx. 90%, aqueous solution, extra pure, Pharmpur®, USP

assay (G.C.) . . . . . min. 89 %  
 identification . . . . . passes test  
 clarity of solution and reaction . . . . . passes test  
 insoluble in water . . . . . max. 0,01 %  
 distilling range . . . . . max. 182,5 °C  
 acidity . . . . . passes test

residue on evaporation . . . . . max. 0,05 %  
 water (K.F.) . . . . . max. 11 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
FE04781000	1 l	P
FE0478005P	5 l	P

## FE0479 Phenol, approx. 90%, aqueous solution

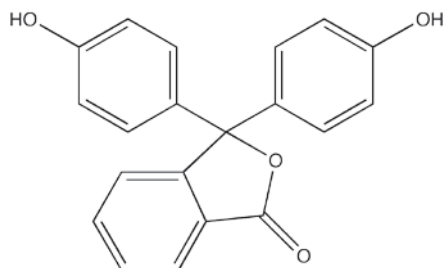
assay (G.C.) . . . . . 89 - 92 %  
 chlorides (Cl) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,0003 %  
 iron (Fe) . . . . . max. 0,0001 %

residue on evaporation . . . . . max. 0,02 %  
 water (K.F.) . . . . . 8 - 11 %

Art. No.	Volume	Container
FE04791000	1 l	P
FE0479005P	5 l	P

## Phenolphthalein

### FE0495 Phenolphthalein, indicator, ACS



- Synonyms: 3,3-Bis(p-hydroxyphenyl)phthalide
- C<sub>20</sub>H<sub>14</sub>O<sub>4</sub>
- M = 318,33 g/mol
- CAS [77-09-8]
- EINECS-No.: 201-004-7
- Solub. in water: (20 °C): insoluble
- Melting point: 261 - 263 °C
- GHS-signal word: Danger
- GHS-H sentences: H350 - H341 - H361f
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2932 20 10 00
- Applications: analytical chemistry, laboratory reagent, indicator, in the pharmaceuticals industry (laxative).

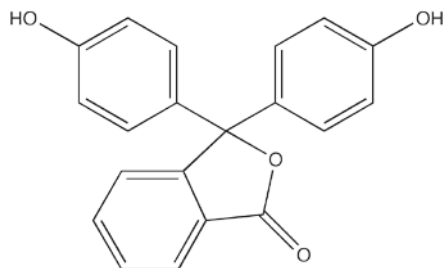
Absorption maximum λ (pH 9,8) . . . . . 551 - 554 nm  
 Absorptivity (A1%/1 cm; λ max; pH 9,8 on dried sample) . . . . . 500 - 600  
 clarity of alcohol solution . . . . . passes test  
 loss on drying (110 °C) . . . . . max. 1 %

Art. No.	Volume	Container
FE04950025	25 g	P
FE04950100	100 g	P
FE04950250	250 g	P
FE04950500	500 g	P
FE0495005P	5 kg	P
FE0495025P	25 kg	P

**Specifications:**  
 pH range (colourless to violet-red) . . . . . 8 - 10

## Phenolphthalein, ethanolic solutions

## FE0496 Phenolphthalein, solution 1% in ethanol, indicator



- $C_{20}H_{14}O_4$
- $M = 318,33$  g/mol
- CAS [77-09-8]
- EINECS-No.: 201-004-7
- Density: 0,81 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 23 °C
- Ignition temp.: ~ 425 °C
- LD 50 (oral, rat): 6200 mg/kg (ethanol)
- ADR: 3 F1 III UN 1993
- IMDG: 3 III UN 1993
- IATA/ICAO: 3 III UN 1993
- GHS-signal word: Danger
- GHS-H sentences: H350 - H341 - H226

- GHS-P sentences: P210 - P241 - P280 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, laboratory reagent, indicator.

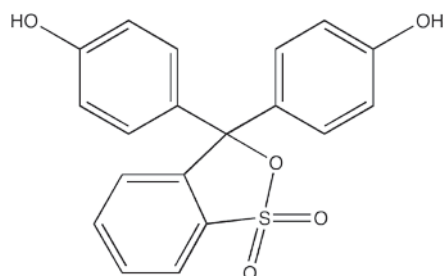
**Specifications:**

pH range (colourless to violet-red) . . . . . 8,2 - 9,8

Art. No.	Volume	Container
FE0496G100	100 ml	
FE0496O250	250 ml	
FE0496I000	1 l	

## Phenol red

## R00130 Phenol red, indicator, ACS



- Synonyms: Phenolsulfonphthalein, PR
- $C_{19}H_{14}O_5S$
- $M = 354,38$  g/mol
- CAS [143-74-8]
- EINECS-No.: 205-609-7
- Solub. in water: (20 °C): almost insoluble
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, indicator.

**Specifications:**

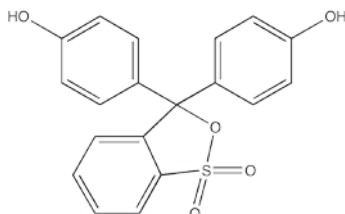
pH range (yellow-red) . . . . . 6,8 - 8,2  
 clarity of solution. . . . . passes test  
 Absorption maximum  $\lambda_1$  (pH 1,2) . . . . . 503 - 506 nm  
 Absorption maximum  $\lambda_2$  (pH 3,0) . . . . . 430 - 435 nm  
 Absorption maximum  $\lambda_3$  (pH 6,5) . . . . . 430 - 435 nm  
 Absorption maximum  $\lambda_4$  (pH 8,8) . . . . . 557 - 560 nm  
 Absorptivity (A1%/1 cm;  $\lambda_1$ , on dried sample). . . . . 900 - 1100  
 Absorptivity (A1%/1 cm;  $\lambda_2$ ;

on dried sample). . . . . 500 - 700  
 Absorptivity (A1%/1 cm;  $\lambda_3$ , on dried sample). . . . . 500 - 700  
 Absorptivity (A1%/1 cm;  $\lambda_4$ , on dried sample). . . . . 1000 - 1200  
 insoluble in  $C_2H_5OH$  . . . . . passes test  
 copper (Cu) . . . . . max. 0,005 %  
 iron (Fe) . . . . . max. 0,005 %  
 lead (Pb). . . . . max. 0,005 %  
 nickel (Ni) . . . . . max. 0,005 %  
 loss on drying (110 °C). . . . . max. 5 %

Art. No.	Volume	Container
R00130O005	5 g	
R00130O010	10 g	
R00130O025	25 g	
R00130I000	1 kg	

## Phenol red, solution 0,02%

## R00131 Phenol red, solution 0,02%, indicator



- Synonyms: Phenolsulfonphthalein, PR
- $C_{19}H_{14}O_5S$
- $M = 354,38$  g/mol
- CAS [143-74-8]
- EINECS-No.: 205-609-7
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, laboratory reagent, indicator.

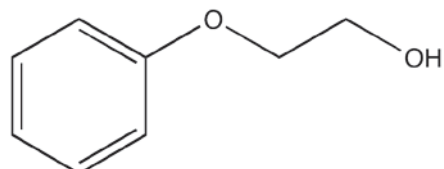
**Specifications:**

pH range (brown-orange to yellow). . . . . 1,2 - 3,0  
 pH range (brown-yellow to red-violet) . . . . . 6,5 - 8,0

Art. No.	Volume	Container
R00131O100	100 ml	

## 2-Phenoxyethanol

## FE0525 2-Phenoxyethanol, synthesis grade



- Synonyms: Ethylene glycol monophenyl ether, Phenylcellosolve, Monophenyl glycol, Phenyl glycol
- $C_8H_{10}O_2$
- $M = 138,17$  g/mol
- CAS [122-99-6]
- EINECS-No.: 204-589-7
- Density: 1,11 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: 11 - 13 °C
- Boiling point: 244 - 246 °C
- Flash pt. 121 °C
- Ignition temp.: 535 °C
- Vapour pressure: (20 °C) 0,04 hPa
- Refraction index: (n 20 °C) 1,537
- LD 50 (oral, rat): > 2000 mg/kg
- EC-Index-No.: 603-098-00-9
- GHS-signal word: Warning
- GHS-H sentences: H302 - H319

- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P301 + P312 - P337 + P313 - P501a
- Tariff number: 2909 49 90 90
- Applications: synthesis of organic products, perfumery.

**Specifications:**

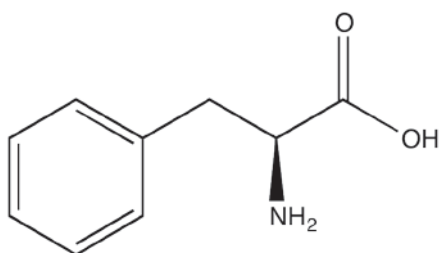
assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,106 - 1,108  
 peroxides (as  $H_2O_2$ ) . . . . . max. 0,005 %

Art. No.	Volume	Container
FE0525I000	1 l	
FE0525O250	2,5 l	
FE0525O25P	25 l	

# Phenyl

## L-Phenylalanine

FE0180 L-Phenylalanine, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms:  $\alpha$ -Amino- $\beta$ -phenyl propionic acid
- $C_9H_9NO_2$
- $M = 165,19$  g/mol
- CAS [63-91-2]
- EINECS-No.: 200-568-1
- Solub. in water: (20 °C): 27 g/l
- Melting point: 275 - 283 °C (decomposes)
- Tariff number: 2922 49 95 90
- Applications: in biochemistry, cosmetics, for pharmaceuticals synthesizing, for pharmaceuticals synthesizing, in pharma industry.

### Specifications:

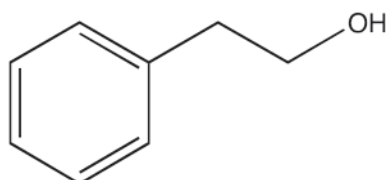
assay (titration with  $HClO_4$ , on dried sample) ..... 98,5 - 101 %  
 identification ..... passes test  
 appearance of solution ..... passes test

pH (1 %,  $H_2O$ ) ..... 5,4 - 6,0  
 specific rotation ( $[\alpha]_{20}^D$ ,  $c = 2$ ,  $H_2O$ ) - 32,7 ° - - 34,7 °  
 chlorides (Cl) ..... max. 0,02 %  
 sulfates ( $SO_4$ ) ..... max. 0,03 %  
 ammonium ( $NH_4$ ) ..... max. 0,01 %  
 heavy metals (as Pb) ..... max. 0,001 %  
 iron (Fe) ..... max. 0,001 %  
 ninhydrin-positive substances ..... max. 0,5 %  
 residue on ignition ..... max. 0,1 %  
 loss on drying (105 °C) ..... max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
FE0180025	25 g	0
FE0180010	100 g	0

## 2-Phenylethanol

AL0245 2-Phenylethanol, synthesis grade



- Synonyms: Phenethyl alcohol, Benzylcarbinol
- $C_8H_{10}O$
- $M = 122,17$  g/mol
- CAS [60-12-8]
- EINECS-No.: 200-456-2
- Density: 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): slightly miscible
- Melting point: -27 °C
- Boiling point: 218 - 220 °C
- Flash pt. > 100 °C
- Ignition temp.: 410 °C
- Vapour pressure: (20 °C) 0,08 hPa
- Refraction index: (n 20°C/D) 1,531
- LD 50 (oral, rat): 2230 mg/kg
- ADR: 6.1 T1 III UN 2810
- IMDG: 6.1 III UN 2810
- IATA/ICAO: 6.1 III UN 2810
- GHS-signal word: Danger

- GHS-H sentences: H311 - H302 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P361 - P322 - P405 - P501a
- Tariff number: 2906 29 00 90
- Applications: for pharmaceuticals synthesizing and perfumery.

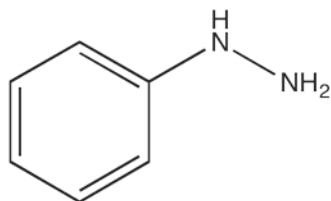
### Specifications:

assay (G.C.) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/4°) ..... 1,019 - 1,020

Art. No.	Volume	Container
AL02450250	250 ml	0
AL02451000	1 l	0
AL0245005P	5 l	0

## Phenylhydrazine

FE0315 Phenylhydrazine, extra pure



- Synonyms: Hydrazinobenzene
- $C_6H_8N_2$
- $M = 108,14$  g/mol
- CAS [100-63-0]
- EINECS-No.: 202-873-5
- Solub. in water: (25 °C): 145 g/l
- Melting point: 19,6 °C
- Boiling point: 244 °C
- Flash pt. 86 °C
- Ignition temp.: 195 °C
- Vapour pressure: (20 °C) 0,1 hPa
- LD 50 (oral, rat): 188 mg/kg
- EC-Index-No.: 612-023-00-9
- ADR: 6.1 T1 II UN 2572
- IMDG: 6.1 II UN 2572
- IATA/ICAO: 6.1 II UN 2572
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H331 - H350 - H372 - H341 - H400 - H315 - H319 - H317

- GHS-P sentences: P260 - P301 + P310 - P305 + P351 + P338 - P361 - P405 - P501a
- Tariff number: 2928 00 90 90
- Applications: analytical chemistry, laboratory reagent (sugars, aldehydes, ketones), manufacture of dyes, stabilizer (Explosive).
- Appearance: Reddish-brown liquid

### Specifications:

assay (titration with  $HClO_4$ ) ..... min. 95 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/4°) ..... 1,096 - 1,099  
 residue on ignition ..... max. 0,005 %

Art. No.	Volume	Container
FE03150100	100 ml	0

## ortho-Phosphoric acid, 85%

- Synonyms: Orthophosphoric acid
- $H_3PO_4$
- $M = 98,00$  g/mol
- CAS [7664-38-2]
- EINECS-No.: 231-633-2
- Density: 1,71 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ 21 °C

- Boiling point: ~ 158 °C
- Vapour pressure: (25 °C) 2,2 hPa
- LD 50 (oral, rat): 1530 mg/kg (anhydrous substance)
- EC-Index-No.: 015-011-00-6
- ADR: 8 C1 III UN 1805
- IMDG: 8 III UN 1805
- IATA/ICAO: 8 III UN 1805
- GHS-signal word: Danger

- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2809 20 00 00
- Applications: analytical chemistry, laboratory reagent, in fertilizer compositions, solvents (for pharmaceuticals synthesizing), antioxidant (in food industry).

**AC1098 ortho-Phosphoric acid, 85%, extra pure, Pharpur®, Ph Eur, BP, NF**

assay (acidimetric) . . . . .	85 - 88 %	sulfates (SO <sub>4</sub> ) . . . . .	max. 0,01 %
identification . . . . .	passes test	arsenic (As) . . . . .	max. 0,0002 %
appearance of solution . . . . .	clear and colourless	heavy metals (as Pb) . . . . .	max. 0,001 %
hypophosphorous acid and phosphorous acid . . . . .	passes test	iron (Fe) . . . . .	max. 0,005 %
alkali phosphates . . . . .	passes test	substances precipitated with ammonia . . . . .	passes test
chlorides (Cl) . . . . .	max. 0,005 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	
nitrites (NO <sub>2</sub> ) . . . . .	passes test		

Art. No.	Volume	Container
AC10981000	1 l	Ⓟ
AC10982500	2,5 l	Ⓟ
AC1098005P	5 l	Ⓟ
AC1098025P	25 l	Ⓟ

**AC1100 ortho-Phosphoric acid, 85%, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (acidimetric) . . . . .	min. 85 %	arsenic (As) . . . . .	max. 0,00005 %
identity . . . . .	passes test	cadmium (Cd) . . . . .	max. 0,00005 %
appearance of solution . . . . .	passes test	calcium (Ca) . . . . .	max. 0,002 %
colour (Hazen) . . . . .	max. 10	cobalt (Co) . . . . .	max. 0,00005 %
insoluble in water . . . . .	max. 0,001 %	copper (Cu) . . . . .	max. 0,00005 %
volatile acids (as CH <sub>3</sub> COOH) . . . . .	max. 0,001 %	heavy metals (as Pb) . . . . .	max. 0,001 %
chlorides (Cl) . . . . .	max. 0,0002 %	iron (Fe) . . . . .	max. 0,001 %
fluorides (F) . . . . .	max. 0,0001 %	lead (Pb) . . . . .	max. 0,00005 %
nitrites (NO <sub>2</sub> ) . . . . .	max. 0,0003 %	magnesium (Mg) . . . . .	max. 0,0005 %
phosphites, hypophosphites (as H <sub>3</sub> PO <sub>3</sub> ) . . . . .	max. 0,002 %	manganese (Mn) . . . . .	max. 0,00005 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,002 %	nickel (Ni) . . . . .	max. 0,0001 %
antimony (Sb) . . . . .	max. 0,0005 %	potassium (K) . . . . .	max. 0,0005 %
		sodium (Na) . . . . .	max. 0,02 %

zinc (Zn) . . . . .	max. 0,0002 %
substances precipitated with ammonia . . . . .	passes test
substances reducing KMnO <sub>4</sub> . . . . .	passes test

Art. No.	Volume	Container
AC11001000	1 l	Ⓟ
AC11002500	2,5 l	Ⓟ
AC1100005P	5 l	Ⓟ
AC1100025P	25 l	Ⓟ

**ortho-Phosphoric acid, solution 50%****AC1096 ortho-Phosphoric acid, solution 50%, reagent grade**

- Synonyms: Orthophosphoric acid
- H<sub>3</sub>PO<sub>4</sub>
- M = 98,00 g/mol
- CAS [7664-38-2]
- EINECS-No.: 231-633-2
- Density: 1,33 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 1530 mg/kg (anhydrous substance)
- EC-Index-No.: 015-011-00-6
- ADR: 8 C1 III UN 1805
- IMDG: 8 III UN 1805
- IATA/ICAO: 8 III UN 1805
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2809 20 00 00

- Applications: analytical chemistry, laboratory reagent, in fertilizer compositions, solvents (for pharmaceuticals synthesizing), antioxidant (in food industry).

**Specifications:**

assay (acidimetric) . . . . .	approx. 50 %
chlorides (Cl) . . . . .	max. 0,0005 %
nitrites (NO <sub>2</sub> ) . . . . .	max. 0,0005 %
silicates (SiO <sub>2</sub> ) . . . . .	max. 0,025 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,006 %
arsenic (As) . . . . .	max. 0,0001 %
antimony (Sb) . . . . .	max. 0,0002 %
cadmium (Cd) . . . . .	max. 0,0001 %
calcium (Ca) . . . . .	max. 0,005 %
chromium (Cr) . . . . .	max. 0,0001 %
cobalt (Co) . . . . .	max. 0,0001 %
copper (Cu) . . . . .	max. 0,0001 %

iron (Fe) . . . . .	max. 0,001 %
lead (Pb) . . . . .	max. 0,0001 %
magnesium (Mg) . . . . .	max. 0,001 %
manganese (Mn) . . . . .	max. 0,0001 %
nickel (Ni) . . . . .	max. 0,0001 %
potassium (K) . . . . .	max. 0,0005 %
sodium (Na) . . . . .	max. 0,05 %
zinc (Zn) . . . . .	max. 0,0002 %
substances reducing KMnO <sub>4</sub> . . . . .	passes test
volatile acids (as CH <sub>3</sub> COOH) . . . . .	max. 0,001 %

Art. No.	Volume	Container
AC10961000	1 l	Ⓟ
AC1096005P	5 l	Ⓟ

**ortho-Phosphoric acid, volumetric solutions****AC1106 ortho-Phosphoric acid, solution 1 mol/l**

- H<sub>3</sub>PO<sub>4</sub>
- M = 98,00 g/mol
- CAS [7664-38-2]
- EINECS-No.: 231-633-2
- Density: 1,04 g/cm<sup>3</sup>
- LD 50 (oral, rat): 1530 mg/kg (anhydrous substance)
- EC-Index-No.: 015-011-00-6
- GHS-H sentences: EUH210
- Tariff number: 2809 20 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor . . . . .	0,999 - 1,001
uncertainty ± . . . . .	0,001
1 ml = 0,098 g H <sub>3</sub> PO <sub>4</sub> This volumetric solution was checked by means of potentiometric methods using a sodium hydroxide standard solution, that was also checked against Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).	

Art. No.	Volume	Container
AC11061000	1 l	Ⓟ

**AC1105 ortho-Phosphoric acid, solution 0,1 mol/l**

- H<sub>3</sub>PO<sub>4</sub>
- M = 98,00 g/mol
- CAS [7664-38-2]
- EINECS-No.: 231-633-2
- Density: 1,00 g/cm<sup>3</sup>
- LD 50 (oral, rat): 1530 mg/kg (anhydrous substance)
- EC-Index-No.: 015-011-00-6
- Tariff number: 2809 20 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor . . . . .	0,999 - 1,001
uncertainty ± . . . . .	0,001
1 ml = 0,0098 g H <sub>3</sub> PO <sub>4</sub> This volumetric solution was checked by means of potentiometric methods using a sodium hydroxide standard solution, that was also checked against Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).	

Art. No.	Volume	Container
AC11051000	1 l	Ⓟ

**di-Phosphorus pentoxide**

- Synonyms: Phosphoric anhydride
- P<sub>2</sub>O<sub>5</sub>
- M = 141,96 g/mol
- CAS [1314-56-3]
- EINECS-No.: 215-236-1
- Solub. in water: (20 °C): hydrolysis reaction
- Melting point: ~ 580 - 585 °C

- Boiling point: 591 °C
- Vapour pressure: (20 °C) < 0,1 hPa
- EC-Index-No.: 015-010-00-0
- ADR: 8 C2 II UN 1807
- IMDG: 8 II UN 1807
- IATA/ICAO: 8 II UN 1807
- GHS-signal word: Danger

- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2809 10 00 00
- Applications: analytical chemistry, synthesis of organic products, manufacture of dyes, desiccant.

# Phosph

## AN0215 di-Phosphorus pentoxide, synthesis grade

assay (acidimetric) .....min. 97 %

Art. No.	Volume	Container
AN02151000	1 kg	0

## AN0217 di-Phosphorus pentoxide, reagent grade, ACS, ISO

assay (acidimetric) .....min. 99,5 %	calcium (Ca) .....max. 0,005 %	sodium (Na) .....max. 0,005 %
identity .....passes test	cobalt (Co) .....max. 0,0005 %	zinc (Zn) .....max. 0,0005 %
insoluble in water .....max. 0,005 %	copper (Cu) .....max. 0,0005 %	substances reducing $\text{KMnO}_4$ (as $\text{P}_2\text{O}_5$ ) .....max. 0,02 %
chlorides (Cl) .....max. 0,001 %	heavy metals (as Pb) .....max. 0,005 %	
nitrate ( $\text{NO}_3$ ) .....max. 0,0005 %	iron (Fe) .....max. 0,001 %	
total nitrogen (as N) .....max. 0,002 %	lead (Pb) .....max. 0,0005 %	
ammonium ( $\text{NH}_4$ ) .....max. 0,001 %	magnesium (Mg) .....max. 0,001 %	
antimony (Sb) .....max. 0,001 %	manganese (Mn) .....max. 0,0005 %	
arsenic (As) .....max. 0,01 %	nickel (Ni) .....max. 0,0005 %	
cadmium (Cd) .....max. 0,0005 %	potassium (K) .....max. 0,002 %	

Art. No.	Volume	Container
AN02170500	500 g	0
AN02171000	1 kg	0
AN0217025P	25 kg	0

## Phosphorus red

### F00030 Phosphorus red, extra pure

- P
- M = 30,97 g/mol
- CAS [7723-14-0]
- EINECS-No.: 231-768-7
- Solub. in water: (20 °C): insoluble
- Ignition temp.: 300 °C
- EC-Index-No.: 015-002-00-7
- ADR: 4.1 F3 III UN 1338
- IMDG: 4.1 III UN 1338
- IATA/ICAO: 4.1 III UN 1338
- GHS-signal word: Danger
- GHS-H sentences: H228 - H412
- GHS-P sentences: P210 - P241 - P280 - P240 - P273 - P501a
- Tariff number: 2804 70 00 00
- Applications: synthesis of organic products, inorganic salts, in pyrotechnics, in fertilizer compositions.

#### Specifications:

assay .....min. 97 %  
iron (Fe) .....max. 0,2 %  
yellow phosphorus .....passes test

Art. No.	Volume	Container
F000300250	250 g	0
F000301000	1 kg	0

## Phosphotungstic acid hydrate

### AC1130 Phosphotungstic acid hydrate, reagent grade

- Synonyms: Tungstophosphoric acid hydrate
- $\text{H}_3[\text{P}(\text{W}_6\text{O}_{19})_4] \cdot x\text{H}_2\text{O}$
- M = 2880,17 g/mol
- CAS [12501-23-4]
- EINECS-No.: 215-682-7
- Solub. in water: (20 °C): soluble
- Melting point: 107 °C
- ADR: 8 C2 III UN 3260
- IMDG: 8 III UN 3260
- IATA/ICAO: 8 III UN 3260
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2811 19 80 90
- Applications: analytical chemistry, reagent for organic compounds detection.

#### Specifications:

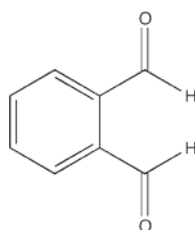
chlorides (Cl) .....max. 0,005 %  
sulfates ( $\text{SO}_4$ ) .....max. 0,01 %  
total nitrogen (as N) .....max. 0,002 %

copper (Cu) .....max. 0,001 %  
iron (Fe) .....max. 0,002 %  
lead (Pb) .....max. 0,002 %  
potassium (K) .....max. 0,02 %  
sodium (Na) .....max. 0,02 %  
loss on ignition (750 °C) .....max. 17 %

Art. No.	Volume	Container
AC11300025	25 g	0
AC11300100	100 g	0

## Phthaldialdehyde

### AL0580 Phthaldialdehyde, for aminoacid analysis



- Synonyms: OPA
- $\text{C}_8\text{H}_6\text{O}_2$
- M = 134,14 g/mol
- CAS [643-79-8]
- EINECS-No.: 211-402-2
- Solub. in water: (25 °C): soluble
- Melting point: 53 - 55 °C
- Flash pt. > 110 °C
- ADR: 6.1 TC2 II UN 2928
- IMDG: 6.1 II UN 2928
- IATA/ICAO: 6.1 II UN 2928
- GHS-signal word: Danger
- GHS-H sentences: H301 - H314 - H400 - H317

- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2912 29 00 90
- Applications: analytical chemistry, fluorescent indicator.

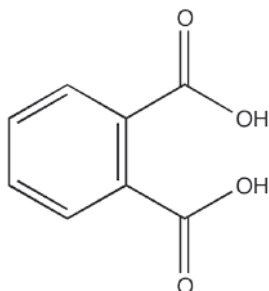
#### Specifications:

assay (G.C.) .....min. 99 %  
identity (IR-spectrum) .....passes test

Art. No.	Volume	Container
AL05800005	5 g	0

## ortho-Phthalic acid

## AC1140 ortho-Phthalic acid, reagent grade



- Synonyms: Phthalic acid, Orthophthalic acid, 1,2-Benzenedicarboxylic acid
- $C_8H_6O_4$
- M = 166,13 g/mol
- CAS [88-99-3]
- EINECS-No.: 201-873-2
- Solub. in water: (20 °C): 5,74 g/l
- Melting point: 206 - 208 °C
- LD 50 (oral, rat): 7900 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2917 39 80 80
- Applications: analytical chemistry, laboratory reagent, solvents, perfumery.

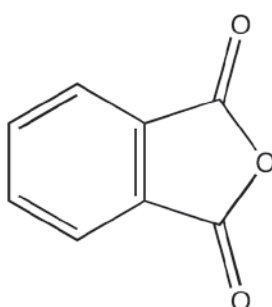
## Specifications:

assay (acidimetric) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 insoluble in Na<sub>2</sub>CO<sub>3</sub> solution . . . . .max. 0,05 %  
 chlorides (Cl) . . . . .max. 0,0003 %  
 nitrates (NO<sub>3</sub>) . . . . .max. 0,0005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %  
 residue on ignition . . . . .max. 0,02 %  
 water (K.F.) . . . . .max. 0,2 %

Art. No.	Volume	Container
AC11400250	250 g	Ⓟ

## Phthalic anhydride

## AN0230 Phthalic anhydride, synthesis grade



- Synonyms: 1,2-Benzenedicarboxylic acid anhydride
- $C_8H_4O_3$
- M = 148,12 g/mol
- CAS [85-44-9]
- EINECS-No.: 201-607-5
- Solub. in water: (20 °C): 6 g/l
- Melting point: 129-132 °C
- Boiling point: 285 °C
- Flash pt. 151 °C
- Ignition temp.: 580 °C
- Vapour pressure: (20 °C) < 0,01 hPa
- LD 50 (oral, rat): 1530 mg/kg
- EC-Index-No.: 607-009-00-4
- ADR: 8 C4 III UN 2214
- IMDG: 8 III UN 2214
- IATA/ICAO: 8 III UN 2214
- GHS-signal word: Danger

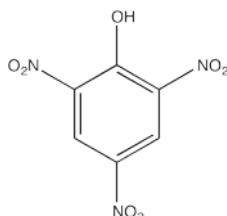
- GHS-H sentences: H334 - H318 - H302 - H335 - H315 - H317
- GHS-P sentences: P285 - P305 + P351 + P338 - P310 - P321 - P405 - P501a
- Tariff number: 2917 35 00 00
- Applications: synthesis of organic products, manufacturing of synthetic resins.

## Specifications:

assay (acidimetric) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test

Art. No.	Volume	Container
AN02300500	500 g	Ⓟ
AN02301000	1 kg	Ⓟ

## Picric acid



- Synonyms: 2,4,6-Trinitrophenol
- $C_6H_3N_3O_7$
- M = 229,11 g/mol
- CAS [88-89-1]
- EINECS-No.: 201-865-9
- Solub. in water: (20 °C): slightly soluble
- Melting point: 121,4 °C
- Flash pt. 150 °C
- Ignition temp.: 300 °C
- LD 50 (oral, rat): 200 mg/kg
- EC-Index-No.: 609-009-00-X

- ADR: 4.1 D I UN 1344
- IMDG: 4.1 I UN 1344
- IATA/ICAO: 4.1 I UN 1344
- GHS-signal word: Danger
- GHS-H sentences: H201 - H301 - H311 - H331
- GHS-P sentences: P301 + P310 - P361 - P373 - P401a - P405 - P501a
- Tariff number: 2908 99 00 90
- Applications: analytical chemistry, laboratory reagent, chromatography.

AC1769 Picric acid, extra pure (with approx. 30% H<sub>2</sub>O)

assay (acidimetric, on dried sample) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 insoluble and resinous matter . . . . .max. 0,1 %  
 chlorides (Cl) . . . . .max. 0,005 %

sulfates (SO<sub>4</sub>) . . . . .max. 0,5 %  
 residue on ignition . . . . .max. 0,1 %

Art. No.	Volume	Container
AC17690250	250 g	Ⓟ
AC17690500	500 g	Ⓟ

AC1770 Picric acid, reagent grade (with approx. 30% H<sub>2</sub>O), ACS, Reag. Ph Eur

assay (acidimetric, on dried sample) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 insoluble in toluene . . . . .max. 0,1 %  
 insoluble and resinous matter . . . . .max. 0,01 %  
 insoluble in water . . . . .max. 0,03 %

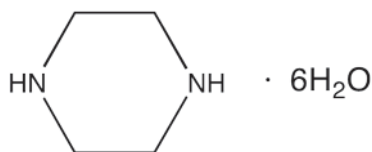
chlorides (Cl) . . . . .max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %  
 residue on ignition . . . . .max. 0,05 %  
 water . . . . .min. 30 %

Art. No.	Volume	Container
AC17700250	250 g	Ⓟ
AC17700500	500 g	Ⓟ

# Pipera

## Piperazine hexahydrate

PI0050 Piperazine hexahydrate, extra pure, Pharmpur®, Ph Eur, BP



- Synonyms: Diethylenediamine
- $C_4H_{10}N_2 \cdot 6H_2O$
- $M = 194,23$  g/mol
- CAS [142-63-2]
- EINECS-No.: 203-808-3
- Solub. in water: (20 °C): 300 °C
- Melting point: 43 - 45 °C
- Boiling point: ~ 105 °C
- Flash pt. > 80 °C
- Ignition temp.: > 150 °C
- Vapour pressure: (20 °C) 2,6 hPa
- EC-Index-No.: 612-057-00-4
- ADR: 8 C8 III UN 2579
- IMDG: 8 III UN 2579
- IATA/ICAO: 8 III UN 2579
- GHS-signal word: Danger
- GHS-H sentences: H334 - H314 - H317 - H412
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 2933 59 95 90
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products, in the pharmaceuticals industry, in pharma industry.

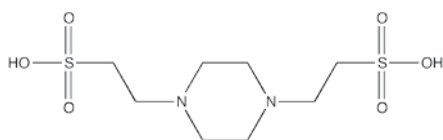
### Specifications:

assay (titration with  $HClO_4$ ) . . . . . 98 - 101 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . passes test  
 pH (5 %,  $H_2O$ ) . . . . . 10,5 - 12,0  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 related substances . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
PI00500500	500 g	Ⓟ

## PIPES free acid

PI0061 PIPES free acid, molecular biology grade



- Synonyms: Piperazine-N,N'-bis(2-ethanesulfonic acid)
- $C_8H_{18}N_2O_6S_2$
- $M = 302,36$  g/mol
- CAS [5625-37-6]
- EINECS-No.: 227-057-6
- Solub. in water: (20 °C): slightly soluble
- Tariff number: 2933 59 95 90
- Applications: laboratory reagent, in buffer solutions, in biochemistry.

identity (IR-spectrum) . . . . . passes test  
 absorbance of a 0,1 M solution in NaOH  
 1 M in a 1 cm cell at 260 nm . . . . . max. 0,05 AU  
 absorbance of a 0,1 M solution in NaOH  
 1 M in a 1 cm cell at 280 nm . . . . . max. 0,05 AU  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 DNases, RNases, Proteases . . . . . non detected

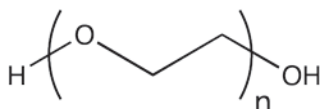
Art. No.	Volume	Container
PI00610025	25 g	Ⓟ

### Specifications:

assay (acidimetric) . . . . . min. 99 %

## Polyethylene glycol 200

P00025 Polyethylene glycol 200, synthesis grade



- Synonyms: Carbowax, PEG, Polyoxyethylene glycol, Polyglycol, Polyethylene oxide
- $HO(C_2H_4O)_nH$
- $M = 190 - 210$  g/mol
- CAS [25322-68-3]
- EINECS-No.: 203-473-3
- Density: 1,124 g/cm<sup>3</sup>
- Solub. in water: (20 °C): freely miscible
- Melting point: -55 - -40 °C
- Boiling point: > 250 °C
- Flash pt. 180 °C
- Ignition temp.: 350 °C
- Vapour pressure: (20 °C) < 0,1 hPa
- LD 50 (oral, rat): 28000 mg/kg

- Tariff number: 3404 20 00 00
- Applications: synthesis of organic products, in food industry, cosmetics.

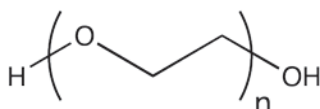
### Specifications:

identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,124 - 1,126  
 average molar mass . . . . . 190 - 210  
 hydroxyl number . . . . . 535 - 590  
 residue on ignition . . . . . max. 0,02 %

Art. No.	Volume	Container
P000251000	1 l	Ⓟ

## Polyethylene glycol 300

P00030 Polyethylene glycol 300, synthesis grade



- Synonyms: Carbowax, PEG, Polyoxyethylene glycol, Polyglycol, Polyethylene oxide
- $HO(C_2H_4O)_nH$
- $M = 300$  g/mol
- CAS [25322-68-3]
- EINECS-No.: 203-473-3
- Density: 1,13 g/cm<sup>3</sup>
- Solub. in water: (20 °C): freely miscible
- Melting point: -15 - -10 °C
- Flash pt. 220 °C
- Ignition temp.: 370 °C
- Vapour pressure: (20 °C) 15000 mg/kg
- Tariff number: 3404 20 00 00
- Applications: synthesis of organic products, in food industry, cosmetics.

### Specifications:

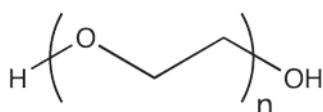
identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,125 - 1,127  
 average molar mass . . . . . 285 - 315  
 hydroxyl number . . . . . 356 - 394  
 residue on ignition . . . . . max. 0,02 %

Art. No.	Volume	Container
P000301000	1 l	Ⓟ
P00030005P	5 l	Ⓟ
P00030025P	25 l	Ⓟ



## Polyethylene glycol 400

## P00035 Polyethylene glycol 400, synthesis grade



- Synonyms: Carbowax, PEG, Polyoxyethylene glycol, Polyglycol, Polyethylene oxide
- $\text{HO}(\text{C}_2\text{H}_4\text{O})_n\text{H}$
- $M = 380 - 420 \text{ g/mol}$
- CAS [25322-68-3]
- EINECS-No.: 203-473-3
- Density:  $1,13 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point:  $4 - 8 \text{ °C}$
- Boiling point:  $> 250 \text{ °C}$
- Flash pt.  $240 \text{ °C}$
- Ignition temp.:  $\sim 370 \text{ °C}$
- Vapour pressure: (20 °C)  $< 0,1 \text{ hPa}$
- LD 50 (oral, rat):  $30200 \text{ mg/kg}$
- Tariff number: 3404 20 00 00

- Applications: analytical chemistry, chromatography, synthesis of organic products, in food industry, cosmetics.

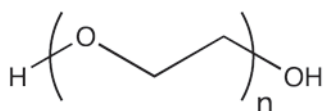
**Specifications:**

identity (IR-spectrum) . . . . . passes test  
density (20°/4°) . . . . . 1,124 - 1,126  
average molar mass . . . . . 380 - 420  
hydroxyl number . . . . . 267 - 295  
residue on ignition . . . . . max. 0,02 %

Art. No.	Volume	Container
P000351000	1 l	
P00035005P	5 l	
P00035025P	25 l	

## Polyethylene glycol 600

## P00045 Polyethylene glycol 600, synthesis grade



- Synonyms: Carbowax, PEG, Polyoxyethylene glycol, Polyglycol, Polyethylene oxide
- $\text{HO}(\text{C}_2\text{H}_4\text{O})_n\text{H}$
- $M = 600 \text{ g/mol}$
- CAS [25322-68-3]
- EINECS-No.: 203-473-3
- Density:  $1,13 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point:  $17 - 22 \text{ °C}$
- Flash pt.  $270 \text{ °C}$
- Ignition temp.:  $380 \text{ °C}$
- Vapour pressure: (20 °C)  $15000 \text{ mg/kg}$
- Tariff number: 3404 20 00 00

- Applications: synthesis of organic products, in food industry, cosmetics.

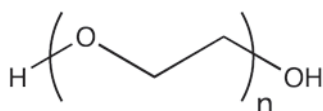
**Specifications:**

identity (IR-spectrum) . . . . . passes test  
density (20°/4°) . . . . . 1,126 - 1,128  
average molar mass . . . . . 570 - 630  
hydroxyl number . . . . . 178 - 197  
residue on ignition . . . . . max. 0,02 %

Art. No.	Volume	Container
P000451000	1 l	
P00045005P	5 l	

## Polyethylene glycol 1500

## P00050 Polyethylene glycol 1500, synthesis grade



- Synonyms: Carbowax, PEG, Polyoxyethylene glycol, Polyglycol, Polyethylene oxide
- $\text{HO}(\text{C}_2\text{H}_4\text{O})_n\text{H}$
- $M = 1400 - 1600 \text{ g/mol}$
- CAS [25322-68-3]
- EINECS-No.: 203-473-3
- Solub. in water: (20 °C):  $\sim 700 \text{ g/l}$
- Melting point:  $42 - 48 \text{ °C}$
- Flash pt.  $260 \text{ °C}$
- Ignition temp.:  $420 \text{ °C}$
- Vapour pressure: (20 °C)  $< 0,01 \text{ hPa}$
- LD 50 (oral, rat):  $44200 \text{ mg/kg}$
- Tariff number: 3404 20 00 00

- Applications: synthesis of organic products, in food industry, cosmetics.

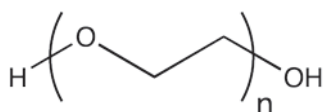
**Specifications:**

identity (IR-spectrum) . . . . . passes test  
average molar mass . . . . . 1400 - 1600  
melting range . . . . . 42 - 48 °C  
hydroxyl number . . . . . 70 - 80  
residue on ignition . . . . . max. 0,1 %

Art. No.	Volume	Container
P000501000	1 kg	
P00050025P	25 kg	

## Polyethylene glycol 4000

## P00060 Polyethylene glycol 4000, synthesis grade



- Synonyms: Carbowax, PEG, Polyoxyethylene glycol, Polyglycol, Polyethylene oxide
- $\text{HO}(\text{C}_2\text{H}_4\text{O})_n\text{H}$
- $M = 3500 - 4500 \text{ g/mol}$
- CAS [25322-68-3]
- EINECS-No.: 203-473-3
- Solub. in water: (20 °C):  $\sim 550 \text{ g/l}$
- Melting point:  $54 - 58 \text{ °C}$
- Flash pt.  $250 \text{ °C}$
- Ignition temp.:  $420 \text{ °C}$
- Vapour pressure: (20 °C)  $< 0,1 \text{ hPa}$
- LD 50 (oral, rat):  $50000 \text{ mg/kg}$
- Tariff number: 3404 20 00 00

- Applications: analytical chemistry, chromatography, synthesis of organic products, in food industry, cosmetics.

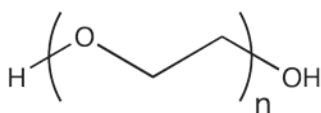
**Specifications:**

identity (IR-spectrum) . . . . . passes test  
average molar mass . . . . . 3500 - 4500  
melting range . . . . . 58 - 61 °C  
hydroxyl number . . . . . 25 - 32  
residue on ignition . . . . . max. 0,15 %

Art. No.	Volume	Container
P000601000	1 kg	
P00060025P	25 kg	

# Polyet

## Polyethylene glycol 6000



- Synonyms: Carbowax, PEG, Polyoxyethylene glycol, Polyglycol, Polyethylene oxide
- $\text{HO}(\text{C}_2\text{H}_4\text{O})_n\text{H}$
- $M = 6000 \text{ g/mol}$
- CAS [25322-68-3]
- EINECS-No.: 203-473-3
- Solub. in water: (20 °C): ~ 500 g/l
- Melting point: 55 - 62 °C
- Flash pt. ~ 250 °C

- Ignition temp.: 420 °C
- Vapour pressure: (20 °C) 50000 mg/kg
- Tariff number: 3404 20 00 00
- Applications: synthesis of organic products, in food industry, cosmetics.

### P00065 Polyethylene glycol 6000, synthesis grade

identity (IR-spectrum) . . . . . passes test  
 average molar mass . . . . . 5000 - 7000  
 melting range . . . . . 56 - 61 °C

hydroxyl number . . . . . 16 - 23  
 residuo on ignition . . . . . max. 0,02 %

Art. No.	Volume	Container
P000651000	1 kg	Ⓢ

### P00066 Polyethylene glycol 6000, molecular biology grade

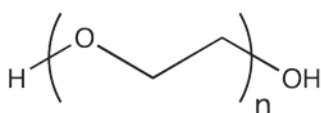
identity (IR-spectrum) . . . . . passes test  
 absorbance of an aqueous solution 0,01 M in a 1 cm cell at 260 nm . . . . . max. 0,200 AU  
 absorbance of an aqueous solution 0,01 M in a 1 cm cell at 280 nm . . . . . max. 0,100 AU

heavy metals (as Pb) . . . . . max. 0,0005 %  
 DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
P000660100	100 g	Ⓢ
P000661000	1 kg	Ⓢ

## Polyethylene glycol 8000

### P00069 Polyethylene glycol 8000, synthesis grade



- Synonyms: Carbowax, PEG, Polyoxyethylene glycol, Polyglycol, Polyethylene oxide
- $\text{HO}(\text{C}_2\text{H}_4\text{O})_n\text{H}$
- $M = 8000 \text{ g/mol}$
- CAS [25322-68-3]
- EINECS-No.: 203-473-3
- Solub. in water: (20 °C): ~ 500 g/l
- Melting point: 56 - 63 °C
- Flash pt. > 270 °C
- Tariff number: 3404 20 00 00
- Applications: synthesis of organic products, in food industry, cosmetics, in the pharmaceuticals industry, in biochemistry.

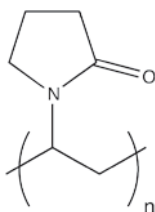
#### Specifications:

average molar mass . . . . . 7000 - 9000  
 solubility (5 %,  $\text{H}_2\text{O}$ ) . . . . . total  
 pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 5,5 - 7,0  
 peroxides (as  $\text{H}_2\text{O}_2$ ) . . . . . max. 0,001 %  
 chlorides (Cl) . . . . . max. 0,005 %

Art. No.	Volume	Container
P000691000	1 kg	Ⓢ
P00069005P	5 kg	Ⓢ
P00069025P	25 kg	Ⓢ

## Polyvinylpyrrolidone

### P00080 Polyvinylpyrrolidone, molecular biology grade



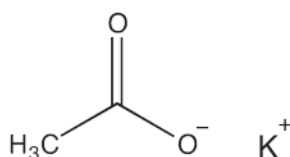
- Synonyms: PVP
- $(\text{C}_6\text{H}_9\text{NO})_n$
- CAS [9003-39-8]
- EINECS-No.: 201-800-4
- Solub. in water: (23 °C): > 270 g/l
- Melting point: > 130 °C (decomposes)
- Flash pt. > 215 °C
- Ignition temp.: 425 °C
- LD 50 (oral, rat): > 2000 mg/kg
- Tariff number: 3905 99 90 99
- Applications: in biochemistry, cosmetics, in the pharmaceuticals industry, photography.

#### Specifications:

nitrogen content (referred to dried sample) . . . . . 11,5 - 12,8 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 loss on drying (105 °C) . . . . . max. 5 %  
 DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
P000800100	100 g	Ⓢ
P000801000	1 kg	Ⓢ

## Potassium acetate



- Synonyms: Acetic acid potassium salt
- $\text{CH}_3\text{COOK}$
- $M = 98,15 \text{ g/mol}$
- CAS [127-08-2]
- EINECS-No.: 204-822-2
- Solub. in water: (20 °C): soluble
- Melting point: 292 °C
- Flash pt. > 250 °C
- LD 50 (oral, rat): 3250 mg/kg

- Tariff number: 2915 29 00 90
- Applications: analytical chemistry, laboratory reagent, in food industry.

### P00109 Potassium acetate, extra pure, Pharmpur®, Ph Eur, BP

assay (titr. with  $\text{HClO}_4$ , on dried sample) . . . . . 99 - 101 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 pH (5 %, 20 °C) . . . . . 7,5 - 9,0  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,02 %  
 aluminium (Al) . . . . . max. 0,0001 %

heavy metals (as Pb) . . . . . max. 0,0004 %  
 iron (Fe) . . . . . max. 0,002 %  
 sodium (Na) . . . . . max. 0,5 %  
 reducing substances . . . . . passes test  
 loss on drying (105 °C) . . . . . max. 3 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P001091000	1 kg	Ⓢ
P00109025P	25 kg	Ⓢ

**PO0110 Potassium acetate, reagent grade, ACS**

assay (titration with HClO <sub>4</sub> )	min. 99 %	cobalt (Co)	max. 0,0005 %
insoluble in water	max. 0,005 %	copper (Cu)	max. 0,0005 %
pH (5 %, H <sub>2</sub> O)	6,5 - 9,0	heavy metals (as Pb)	max. 0,0005 %
chlorides (Cl)	max. 0,002 %	iron (Fe)	max. 0,0005 %
phosphates (as PO <sub>4</sub> )	max. 0,001 %	lead (Pb)	max. 0,0005 %
sulfates (SO <sub>4</sub> )	max. 0,002 %	magnesium (Mg)	max. 0,001 %
total nitrogen (as N)	max. 0,001 %	nickel (Ni)	max. 0,0005 %
arsenic (As)	max. 0,0001 %	sodium (Na)	max. 0,03 %
cadmium (Cd)	max. 0,0005 %		

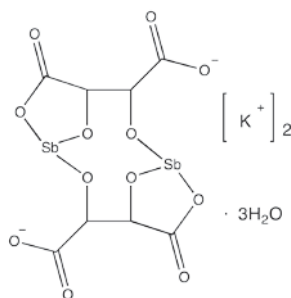
zinc (Zn) . . . . .max. 0,0005 %

Art. No.	Volume	Container
PO01100500	500 g	
PO01101000	1 kg	
PO0110005P	5 kg	
PO0110025P	25 kg	

**PO0112 Potassium acetate, molecular biology grade**

assay (titration with HClO <sub>4</sub> , on dried sample)	min. 99 %
pH (5 %, H <sub>2</sub> O)	7,5 - 8,5
heavy metals (as Pb)	max. 0,0004 %
DNases, RNases, Proteases	non detected

Art. No.	Volume	Container
PO01120250	250 g	
PO01121000	1 kg	

**Potassium antimony(III) tartrate trihydrate****PO0125 Potassium antimony(III) tartrate trihydrate, extra pure**

- Synonyms: Potassium antimony(III) oxide tartrate trihydrate, Potassium antimony tartrate, Tartar emetic, Antimony potassium tartrate
- C<sub>8</sub>H<sub>4</sub>K<sub>2</sub>O<sub>12</sub>Sb<sub>2</sub>·3H<sub>2</sub>O
- M = 667,87 g/mol
- CAS [28300-74-5]
- EINECS-No.: 234-293-3
- Solub. in water: (20 °C): 83 g/l
- LD 50 (oral, rat): 115 mg/kg
- EC-Index-No.: 051-003-00-9
- ADR: 6.1 T5 III UN 1551
- IMDG: 6.1 III UN 1551
- IATA/ICAO: 6.1 III UN 1551
- GHS-signal word: Warning
- GHS-H sentences: H302 - H332 - H411
- GHS-P sentences: P261 - P273 - P301 + P312 - P304 + P340 - P312 - P501a

- Tariff number: 2918 13 00 90
- Applications: mordant/corrosive (in the textile industry), in pesticide compositions, analytical chemistry, for determination of: lead, sodium, germanium (i.a.).
- Appearance: Colourless solid

**Specifications:**

assay (iodometric)	min. 98 %
insoluble in water	max. 0,05 %
pH (5 %, H <sub>2</sub> O)	3 - 5
chlorides (Cl)	max. 0,01 %
sulfates (SO <sub>4</sub> )	max. 0,02 %

Art. No.	Volume	Container
PO01250500	500 g	
PO01251000	1 kg	

**Potassium bromate**

- Synonyms: Bromic acid potassium salt
- KBrO<sub>3</sub>
- M = 167,01 g/mol
- CAS [7758-01-2]
- EINECS-No.: 231-829-8
- Solub. in water: (20 °C): ~ 70 g/l
- Melting point: 434 °C

- LD 50 (oral, rat): 157 mg/kg
- EC-Index-No.: 035-003-00-6
- ADR: 5.1 O2 II UN 1484
- IMDG: 5.1 II UN 1484
- IATA/ICAO: 5.1 II UN 1484
- GHS-signal word: Danger
- GHS-H sentences: H271 - H301 - H350

- GHS-P sentences: P221 - P283 - P210 - P301 + P310 - P405 - P501a
- Tariff number: 2829 90 40 00
- Applications: analytical chemistry, laboratory reagent, in food industry.
- Appearance: White crystalline powder

**PO0160 Potassium bromate, extra pure**

assay (iodometric)	min. 99 %	copper (Cu)	max. 0,002 %
insoluble in water	max. 0,01 %	iron (Fe)	max. 0,002 %
pH (5 %, H <sub>2</sub> O)	5 - 9	lead (Pb)	max. 0,002 %
nitrogen compounds (as N)	max. 0,005 %	nickel (Ni)	max. 0,002 %
bromides (Br)	max. 0,05 %	loss on drying (105 °C)	max. 0,1 %
sulfates (SO <sub>4</sub> )	max. 0,025 %		

Art. No.	Volume	Container
PO01600500	500 g	
PO01601000	1 kg	

**PO0163 Potassium bromate, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (iodometric, on dried sample)	min. 99,8 %	sulfates (SO <sub>4</sub> )	max. 0,005 %
insoluble in water	max. 0,005 %	total nitrogen (as N)	max. 0,001 %
pH (5 %, H <sub>2</sub> O)	5 - 9	heavy metals (as Pb)	max. 0,0005 %
bromides (Br)	max. 0,02 %	iron (Fe)	max. 0,0005 %
		sodium (Na)	max. 0,01 %

Art. No.	Volume	Container
PO01630500	500 g	
PO01631000	1 kg	

**Potassium bromate, volumetric solutions****PO0165 Potassium bromate, solution 1/60 mol/l (0,1 N)**

- KBrO<sub>3</sub>
- M = 167,01 g/mol
- CAS [7758-01-2]
- EINECS-No.: 231-829-8
- Density: ~ 1,002 g/cm<sup>3</sup>
- LD 50 (oral, rat): 157 mg/kg (pure substance)
- EC-Index-No.: 035-003-00-6
- GHS-signal word: Danger
- GHS-H sentences: H350
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2829 90 40 00

- Applications: analytical chemistry.

**Specifications:**

factor	0,999 - 1,001
uncertainty	± 0,001

1 ml = 0,0027835 g KBrO<sub>3</sub>. This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
PO01651000	1 l	

# Potass

## Potassium bromide

- KBr
- M = 119,01 g/mol
- CAS [7758-02-3]
- EINECS-No.: 231-830-3
- Solub. in water: (20 °C): 540 g/l
- Melting point: 730 °C
- Boiling point: 1380 °C
- Vapour pressure: (795 °C) 1,3 hPa
- LD 50 (oral, rat): 3070 mg/kg
- Tariff number: 2827 51 00 00
- Applications: analytical chemistry, laboratory reagent, photography.

### P00166 Potassium bromide, synthesis grade

assay (argentometric) . . . . . min. 99,5 %

Art. No.	Volume	Container
P001660500	500 g	Ⓒ
P001661000	1 kg	Ⓒ
P00166005P	5 kg	Ⓕ

### P00167 Potassium bromide, reagent grade, ACS

assay (argentometric) . . . . . min. 99,5 %  
 identity . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 5,0 - 8,8  
 acidity or alkalinity . . . . . passes test  
 bromates (BrO<sub>3</sub>) . . . . . max. 0,001 %  
 chlorides (Cl) . . . . . max. 0,1 %  
 iodates (IO<sub>3</sub>) . . . . . max. 0,001 %  
 iodides (I) . . . . . max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
 total nitrogen (as N) . . . . . max. 0,001 %  
 arsenic (As) . . . . . max. 0,0001 %  
 barium (Ba) . . . . . max. 0,002 %  
 cadmium (Cd) . . . . . max. 0,0005 %  
 calcium (Ca) . . . . . max. 0,001 %  
 copper (Cu) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0005 %  
 magnesium (Mg) . . . . . max. 0,001 %  
 sodium (Na) . . . . . max. 0,02 %  
 zinc (Zn) . . . . . max. 0,0005 %  
 loss on drying (105 °C) . . . . . max. 0,5 %

Art. No.	Volume	Container
P001670500	500 g	Ⓒ
P001671000	1 kg	Ⓒ

### P00168 Potassium bromide, IR spectroscopy grade

suitability for IR spectroscopy . . . . . passes test

Art. No.	Volume	Container
P001680100	100 g	Ⓒ
P001680250	250 g	Ⓒ

## Potassium carbonate

- Synonyms: Potash
- K<sub>2</sub>CO<sub>3</sub>
- M = 138,21 g/mol
- CAS [584-08-7]
- EINECS-No.: 209-529-3
- Solub. in water: (20 °C): soluble
- Melting point: 891 °C
- LD 50 (oral, rat): > 2000 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2836 40 00 00
- Applications: analytical chemistry, laboratory reagent, manufacture of glass, in the ceramics industry, inorganic salts, cosmetics.

### P00170 Potassium carbonate, extra pure, Ph Eur, BP, USP

assay (acidimetric, on dried sample) . . . . . 99,0 - 101,0 %  
 identification . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble matter . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,01 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %  
 calcium (Ca) . . . . . max. 0,01 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,001 %  
 loss on drying (180 °C) . . . . . max. 5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P001700500	500 g	Ⓒ
P001701000	1 kg	Ⓒ
P00170005P	5 kg	Ⓕ
P00170025P	25 kg	Ⓕ

### P00171 Potassium carbonate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (acidimetric, on dried sample) . . . . . min. 99 %  
 insoluble in water . . . . . max. 0,005 %  
 chlorides (Cl) . . . . . max. 0,003 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,001 %  
 silicates (SiO<sub>2</sub>) . . . . . max. 0,005 %  
 total nitrogen (as N) . . . . . max. 0,001 %  
 total sulphur (as SO<sub>4</sub>) . . . . . max. 0,003 %  
 aluminium (Al) . . . . . max. 0,001 %  
 arsenic (As) . . . . . max. 0,0001 %  
 calcium (Ca) . . . . . max. 0,002 %  
 copper (Cu) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0005 %  
 magnesium (Mg) . . . . . max. 0,002 %  
 sodium (Na) . . . . . max. 0,02 %  
 substances precipitated with ammonia . . . . . max. 0,01 %  
 loss on drying (300 °C) . . . . . max. 1,0 %

Art. No.	Volume	Container
P001710500	500 g	Ⓒ
P001711000	1 kg	Ⓒ
P00171005P	5 kg	Ⓕ
P00171025P	25 kg	Ⓕ

## Potassium carbonate/sodium carbonate anhydrous, mixture 50%

### P00175 Potassium carbonate/sodium carbonate anhydrous, mixture 50%, reagent grade

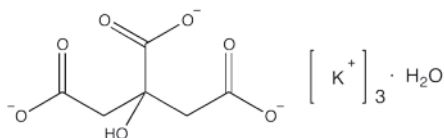
insoluble in water . . . . . max. 0,01 %  
 nitrogen compounds (as N) . . . . . max. 0,001 %  
 sulphur compounds (as SO<sub>4</sub>) . . . . . max. 0,003 %  
 chlorides (Cl) . . . . . max. 0,002 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,001 %  
 arsenic (As) . . . . . max. 0,0001 %  
 calcium (Ca) . . . . . max. 0,005 %  
 copper (Cu) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,001 %  
 lead (Pb) . . . . . max. 0,0005 %  
 magnesium (Mg) . . . . . max. 0,005 %  
 nickel (Ni) . . . . . max. 0,0005 %

Art. No.	Volume	Container
P001751000	1 kg	Ⓒ

**Specifications:**  
 assay (acidimetric) . . . . . min. 99,0 %

## tri-Potassium citrate monohydrate

## P00186 tri-Potassium citrate monohydrate, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms: Citric acid potassium salt, Tripotassium citrate
- $C_6H_5K_3O_7 \cdot H_2O$
- $M = 324,42 \text{ g/mol}$
- CAS [6100-05-6]
- EINECS-No.: 212-755-5
- Solub. in water: (20 °C): soluble
- Melting point: 230 °C (decomposes)
- Tariff number: 2918 15 00 90
- Applications: in food industry (E-332), antioxidant, preservative agent, laboratory reagent, in pharma industry.

## Specifications:

assay (titration with  $HClO_4$ , on dried sample) . . . . . 99 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless

acidity or alkalinity . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,005 %  
 oxalates ( $C_2O_4$ ) . . . . . max. 0,03 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,015 %  
 tartrates ( $C_4O_6$ ) . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 sodium (Na) . . . . . max. 0,3 %  
 substances darkened by  $H_2SO_4$  . . . . . passes test  
 loss on drying (180 °C) . . . . . 3 - 6 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P001860500	500 g	P
P001861000	1 kg	P
P00186005P	5 kg	P

## Potassium cyanide

## P00180 Potassium cyanide, extra pure, Reag. Ph Eur

- Synonyms: Cyanogen potassium
- KCN
- $M = 65,12 \text{ g/mol}$
- CAS [151-50-8]
- EINECS-No.: 205-792-3
- Solub. in water: (25 °C): 716 g/l
- Melting point: 634 °C
- Boiling point: 1625 °C
- Vapour pressure: (634,5 °C) 1,8 hPa
- LD 50 (oral, rat): 5 mg/kg
- EC-Index-No.: 006-007-00-5
- ADR: 6.1 T5 I UN 1680
- IMDG: 6.1 I UN 1680
- IATA/ICAO: 6.1 I UN 1680
- GHS-signal word: Danger

- GHS-H sentences: H300 - EUH032 - H310 - H330 - H410
- GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2837 19 00 90
- Applications: for the extraction of gold and silver from minerals, laboratory reagent, fumigant, in galvanotechnia.

## Specifications:

assay (argentometric) . . . . . min. 96 %  
 insoluble in water . . . . . max. 0,02 %  
 chlorides (Cl) . . . . . max. 0,1 %  
 phosphates (as  $PO_4$ ) . . . . . max. 0,02 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,05 %

sulfides (S) . . . . . max. 0,005 %  
 thiocyanates (SCN) . . . . . max. 0,05 %  
 iron (Fe) . . . . . max. 0,05 %  
 lead (Pb) . . . . . max. 0,001 %  
 sodium (Na) . . . . . max. 0,5 %  
 zinc (Zn) . . . . . max. 0,05 %

Art. No.	Volume	Container
P001800100	100 g	P
P001800250	250 g	P
P001801000	1 kg	P
P00180005P	5 kg	P

## Potassium chlorate

- Synonyms: Chloric acid potassium salt
- $KClO_3$
- $M = 122,55 \text{ g/mol}$
- CAS [3811-04-9]
- EINECS-No.: 223-289-7
- Solub. in water: (20 °C): 73 g/l
- Melting point: 356 °C

- Boiling point: 400 °C (decomposes)
- LD 50 (oral, rat): 1870 mg/kg
- EC-Index-No.: 017-004-00-3
- ADR: 5.1 O2 II UN 1485
- IMDG: 5.1 II UN 1485
- IATA/ICAO: 5.1 II UN 1485
- GHS-signal word: Danger

- GHS-H sentences: H271 - H302 - H332 - H411
- GHS-P sentences: P221 - P283 - P210 - P306 + P360 - P371 + P380 + P375 - P501a
- Tariff number: 2829 19 00 00
- Applications: analytical chemistry, laboratory reagent, in explosive compositions, manufacture of dyes and painting (in the textile industry), antiseptic.

## P00190 Potassium chlorate, extra pure

assay (oxidimetric) . . . . . 99 - 101 %  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . passes test  
 pH (5 %,  $H_2O$ ) . . . . . 5,0 - 9,0  
 chlorides (Cl) . . . . . max. 0,005 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,005 %  
 nitrogen compounds (as N) . . . . . max. 0,005 %  
 arsenic (As) . . . . . max. 0,0001 %

calcium (Ca) . . . . . max. 0,01 %  
 copper (Cu) . . . . . max. 0,002 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,002 %  
 lead (Pb) . . . . . max. 0,002 %  
 magnesium (Mg) . . . . . max. 0,01 %  
 nickel (Ni) . . . . . max. 0,002 %

Art. No.	Volume	Container
P001900500	500 g	P
P001901000	1 kg	P
P00190005P	5 kg	P
P00190025P	25 kg	P

## P00193 Potassium chlorate, reagent grade, ACS, Reag. Ph Eur

assay (argentometric) . . . . . min. 99 %  
 identity . . . . . passes test  
 insoluble in water . . . . . max. 0,005 %  
 chlorides (Cl) . . . . . max. 0,001 %  
 bromates ( $BrO_3$ ) . . . . . max. 0,015 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,002 %  
 total nitrogen (as N) . . . . . max. 0,0005 %

arsenic (As) . . . . . max. 0,00005 %  
 calcium (Ca) . . . . . max. 0,002 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0003 %  
 magnesium (Mg) . . . . . max. 0,001 %  
 sodium (Na) . . . . . max. 0,01 %

Art. No.	Volume	Container
P001930500	500 g	P
P001931000	1 kg	P
P00193005P	5 kg	P

## Potassium chloride

- Synonyms: Chloro potassium
- KCl
- $M = 74,56 \text{ g/mol}$
- CAS [7447-40-7]
- EINECS-No.: 231-211-8

- Solub. in water: (20 °C): 330 g/l
- Melting point: 773 °C
- Boiling point: 1413 °C
- LD 50 (oral, rat): 2600 mg/kg
- Tariff number: 3104 20 10 00

- Applications: analytical chemistry, laboratory reagent, photography, in buffer solutions, electrolyte for batteries.

# Potass

## P00199 Potassium chloride, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (argentometric, on dried sample) . . . . .	.99 - 101 %	barium (Ba) . . . . .	.passes test
identification . . . . .	.passes test	heavy metals (as Pb) . . . . .	.max. 0,001 %
appearance of solution . . . . .	clear and colourless	iron (Fe) . . . . .	.max. 0,002 %
acidity or alkalinity . . . . .	.passes test	magnesium and alkaline-earth metals (as Ca) . . . . .	.max. 0,02 %
bromides (Br) . . . . .	.max. 0,1 %	sodium (Na) . . . . .	.max. 0,1 %
iodides (I) . . . . .	.passes test	loss on drying (105 °C, 3 h) . . . . .	.max. 1 %
sulfates (SO <sub>4</sub> ) . . . . .	.max. 0,03 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	
aluminium (Al) . . . . .	.max. 0,0001 %		

Art. No.	Volume	Container
P001990500	500 g	
P001991000	1 kg	
P00199005P	5 kg	
P00199025P	25 kg	

## P00202 Potassium chloride, crystallized, Pharmpur®, Eur, USP, GMP, suitable for use as excipient

assay (argentometric, on dried sample) . . . . .	.99,0 - 101,0 %	barium (Ba) . . . . .	.passes test
identification . . . . .	.passes test	calcium (Ca) . . . . .	.passes test
appearance of solution . . . . .	clear and colourless	heavy metals (as Pb) . . . . .	.max. 0,001 %
acidity or alkalinity . . . . .	.passes test	iron (Fe) . . . . .	.max. 0,002 %
bromides (Br) . . . . .	.max. 0,1 %	magnesium and alkaline-earth metals (as Ca) . . . . .	.max. 0,02 %
iodides (I) . . . . .	.passes test	sodium (Na) . . . . .	.max. 0,1%
sulfates (SO <sub>4</sub> ) . . . . .	.max. 0,03 %	loss on drying (105 °C, 3 h) . . . . .	.max. 1 %
aluminium (Al) . . . . .	.max. 0,0001 %		

Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
P002021000	1 kg	
P00202025P	25 kg	

## P00200 Potassium chloride, reagent grade, Reag. Ph Eur

assay (argentometric) . . . . .	min. 99,5 %	barium (Ba) . . . . .	.max. 0,001 %
insoluble in water . . . . .	.max. 0,01 %	calcium (Ca) . . . . .	.max. 0,001 %
pH (5 %, H <sub>2</sub> O) . . . . .	.5,5 - 8,0	heavy metals (as Pb) . . . . .	.max. 0,0005 %
bromides (Br) . . . . .	.max. 0,05 %	iron (Fe) . . . . .	.max. 0,0003 %
iodides (I) . . . . .	.max. 0,002 %	magnesium (Mg) . . . . .	.max. 0,002 %
phosphates (as PO <sub>4</sub> ) . . . . .	.max. 0,0005 %	sodium (Na) . . . . .	.max. 0,02 %
sulfates (SO <sub>4</sub> ) . . . . .	.max. 0,005 %		
total nitrogen (as N) . . . . .	.max. 0,001 %		

Art. No.	Volume	Container
P002000250	250 g	
P002000500	500 g	
P002001000	1 kg	
P00200005P	5 kg	
P00200025P	25 kg	

## P00207 Potassium chloride, secondary standard for volumetric titrations, Titrasure®

assay (on dried sample) . . . . .	.99,0 - 100,5 %	phosphates (as PO <sub>4</sub> ) . . . . .	.max. 0,0005 %
insoluble in water . . . . .	.max. 0,005 %	sulfates (SO <sub>4</sub> ) . . . . .	.max. 0,001 %
pH (5 %, H <sub>2</sub> O, 25 °C) . . . . .	.5,4 - 8,6	barium (Ba) . . . . .	.passes test
bromides (Br) . . . . .	.max. 0,01 %	calcium (Ca) . . . . .	.max. 0,002 %
chlorates and nitrates (as NO <sub>3</sub> ) . . . . .	.max. 0,003 %	heavy metals (as Pb) . . . . .	.max. 0,0005 %
iodides (I) . . . . .	.max. 0,002 %	iron (Fe) . . . . .	.max. 0,0003 %

magnesium (Mg) . . . . .max. 0,001 %  
sodium (Na) . . . . .max. 0,005 %

Art. No.	Volume	Container
P002070100	100 g	

## P00201 Potassium chloride, molecular biology grade

assay (argentometric) . . . . .	min. 99,5 %	iron (Fe) . . . . .	.max. 0,0003 %
pH (5 %, H <sub>2</sub> O) . . . . .	.5,5 - 8,0	DNases, RNases, Proteases . . . . .	non detected
heavy metals (as Pb) . . . . .	.max. 0,0005 %		
magnesium (Mg) . . . . .	.max. 0,001 %		

Art. No.	Volume	Container
P002010250	250 g	
P002011000	1 kg	

## Potassium chloride, solutions

### P00205 Potassium chloride, solution 3 mol/l, for filling electrodes

<ul style="list-style-type: none"> <li>• KCl</li> <li>• M = 74,56 g/mol</li> <li>• CAS [7447-40-7]</li> <li>• EINECS-No.: 231-211-8</li> <li>• Density: 1,13 g/cm<sup>3</sup></li> <li>• Solub. in water: (20 °C): miscible</li> <li>• LD 50 (oral, rat): 2600 mg/kg (pure substance)</li> </ul>	<ul style="list-style-type: none"> <li>• Tariff number: 3104 20 90 00</li> <li>• Applications: analytical chemistry, laboratory reagent, for electroanalysis.</li> </ul> <p><b>Specifications:</b> composition: potassium chloride (KCl) . . . . . 224 g</p>	water . . . . . 1 Liter
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Art. No.	Volume	Container
P002050250	250 ml	
P002051000	1 l	

### P00206 Potassium chloride, solution 3,5 mol/l with silver chloride, for filling electrodes

<ul style="list-style-type: none"> <li>• Solub. in water: (20 °C): miscible</li> <li>• LD 50 (oral, rat): 2600 mg/kg (pure substance)</li> <li>• Tariff number: 3822 00 00 00</li> <li>• Applications: for reference electrodes.</li> </ul>	<p><b>Specifications:</b> composition: potassium chloride (KCl) . . . . . 260 g silver chloride . . . . . saturated water . . . . . 1 Liter</p>
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Art. No.	Volume	Container
P002060250	250 ml	

## Potassium chromate

## P00214 Potassium chromate, reagent grade, ACS



- Synonyms: Chromic acid potassium salt
- $K_2CrO_4$
- $M = 194,21$  g/mol
- CAS [7789-00-6]
- EINECS-No.: 232-140-5
- Solub. in water: (20 °C): 637 g/l
- Melting point: 985 °C
- Boiling point: 1000 °C
- LD 50 (oral, rat): 180 mg/kg
- EC-Index-No.: 024-006-00-8
- ADR: 6.1 T5 II UN 3288
- IMDG: 6.1 II UN 3288
- IATA/ICAO: 6.1 II UN 3288

- GHS-signal word: Danger
- GHS-H sentences: H340 - H350i - H410 - H315 - H319 - H317 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: analytical chemistry, laboratory reagent, in the production of enamels, inorganic salts.
- Appearance: Yellow solid

pH (5 %, $H_2O$ )	8,6 - 9,8
chlorides (Cl)	max. 0,001 %
sulfates ( $SO_4$ )	max. 0,01 %
calcium (Ca)	max. 0,005 %
lead (Pb)	max. 0,005 %
sodium (Na)	max. 0,02 %

Art. No.	Volume	Container
P002140500	500 g	
P002141000	1 kg	
P00214005P	5 kg	

## Specifications:

assay (iodometric)	min. 99,5 %
insoluble in water	max. 0,005 %

## Potassium chromate, solution 10%

## P00216 Potassium chromate, solution 10% w/v, extra pure



- Synonyms: Chromic acid potassium salt
- $K_2CrO_4$
- $M = 194,21$  g/mol
- CAS [7789-00-6]
- EINECS-No.: 232-140-5
- Density: ~ 1,08 g/cm<sup>3</sup>
- EC-Index-No.: 024-006-00-8
- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- GHS-signal word: Danger

- GHS-H sentences: H340 - H350i - H317 - H411
- GHS-P sentences: P261 - P280 - P281 - P321 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: analytical chemistry, indicator.

calcium (Ca)	max. 0,01 %
copper (Cu)	max. 0,005 %
iron (Fe)	max. 0,005 %
lead (Pb)	max. 0,01 %
sodium (Na)	max. 0,05 %

Art. No.	Volume	Container
P002160250	250 ml	

## Specifications:

assay (iodometric)	approx. 10 %
chlorides (Cl)	max. 0,005 %
sulfates ( $SO_4$ )	max. 0,1 %
aluminium (Al)	max. 0,005 %

## Potassium chromate, solution 5%

## P00215 Potassium chromate, solution 5% w/v, extra pure



- Synonyms: Chromic acid potassium salt
- $K_2CrO_4$
- $M = 194,21$  g/mol
- CAS [7789-00-6]
- EINECS-No.: 232-140-5
- Density: ~ 1,04 g/cm<sup>3</sup>
- EC-Index-No.: 024-006-00-8
- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- GHS-signal word: Danger

- GHS-H sentences: H340 - H350i - H317 - H411
- GHS-P sentences: P261 - P280 - P281 - P321 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: analytical chemistry, indicator.

calcium (Ca)	max. 0,01 %
copper (Cu)	max. 0,005 %
iron (Fe)	max. 0,005 %
lead (Pb)	max. 0,01 %
sodium (Na)	max. 0,05 %

Art. No.	Volume	Container
P002150250	250 ml	

## Specifications:

assay (iodometric)	approx. 5 %
chlorides (Cl)	max. 0,005 %
sulfates ( $SO_4$ )	max. 0,1 %
aluminium (Al)	max. 0,005 %

## Potassium dichromate

- Synonyms: Potassium bichromate, Potassium pyrochromate
- $K_2Cr_2O_7$
- $M = 294,19$  g/mol
- CAS [7778-50-9]
- EINECS-No.: 231-906-6
- Solub. in water: (20 °C): 130 g/l
- Melting point: 398 °C
- Boiling point: > 500 °C

- LD 50 (oral, rat): 25 mg/kg
- EC-Index-No.: 024-002-00-6
- ADR: 6.1 T5 II UN 3288
- IMDG: 6.1 II UN 3288
- IATA/ICAO: 6.1 II UN 3288
- GHS-signal word: Danger
- GHS-H sentences: H272 - H301 - H330 - H334 - H340 - H350 - H360FD - H372 - H314 - H410 - H312 - H317

- GHS-P sentences: P221 - P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: oxidizing agent, synthesis of organic products, manufacture of dyes, painting.
- Appearance: Orange solid

## P00219 Potassium dichromate, extra pure



assay (iodometric)	min. 99,5 %
insoluble in water	max. 0,01 %
pH (5 %, $H_2O$ )	3,7 - 4,0
chlorides (Cl)	max. 0,005 %
sulfates ( $SO_4$ )	max. 0,01 %
calcium (Ca)	max. 0,005 %

iron (Fe)	max. 0,005 %
sodium (Na)	max. 0,2 %
loss on drying (105 °C)	max. 0,5 %

Art. No.	Volume	Container
P002190500	500 g	
P002191000	1 kg	
P00219005P	5 kg	
P00219025P	25 kg	

## P00220 Potassium dichromate, reagent grade, ACS, ISO, Reag. Ph Eur



assay (iodometric)	min. 99,9 %
insoluble matter	max. 0,005 %
chlorides (Cl)	max. 0,001 %
sulfates ( $SO_4$ )	max. 0,005 %
calcium (Ca)	max. 0,002 %
copper (Cu)	max. 0,001 %

iron (Fe)	max. 0,001 %
lead (Pb)	max. 0,005 %
sodium (Na)	max. 0,02 %
loss on drying (105 °C)	max. 0,05 %

Art. No.	Volume	Container
P002200500	500 g	
P002201000	1 kg	
P00220005P	5 kg	
P00220025P	25 kg	

## P00235 Potassium dichromate, secondary standard for volumetric titrations, Titrasure®



assay (on dried sample)	min. 99 %
insoluble in water	max. 0,005 %
chlorides (Cl)	max. 0,001 %
sulfates ( $SO_4$ )	max. 0,005 %

calcium (Ca)	max. 0,003 %
iron (Fe)	max. 0,001 %
sodium (Na)	max. 0,02 %
loss on drying (105 °C)	max. 0,05 %

Art. No.	Volume	Container
P002350100	100 g	

# Potass

## Potassium dichromate, volumetric solutions

### P00231 Potassium dichromate, solution 1/6 mol/l (1 N)



- $K_2Cr_2O_7$
- M = 294,19 g/mol
- CAS [7778-50-9]
- EINECS-No.: 231-906-6
- Density: ---
- LD 50 (oral, rat): 25 mg/kg (toxic component)
- EC-Index-No.: 024-002-00-6
- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- GHS-signal word: Danger

- GHS-H sentences: H334 - H340 - H350 - H360FD - H373 - H318 - H332 - H315 - H317 - H411
- GHS-P sentences: P260 - P285 - P285 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

1 ml = 0,04903 g  $K_2Cr_2O_7$ . This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

#### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty  $\pm$  0,001

Art. No.	Volume	Container
P002311000	1 l	0

### P00232 Potassium dichromate, solution 1/24 mol/l (0,25 N)



- $K_2Cr_2O_7$
- M = 294,19 g/mol
- CAS [7778-50-9]
- EINECS-No.: 231-906-6
- Density: 1,01 g/cm<sup>3</sup>
- LD 50 (oral, rat): 25 mg/kg (toxic component)
- EC-Index-No.: 024-002-00-6
- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- GHS-signal word: Danger

- GHS-H sentences: H334 - H340 - H350 - H360FD - H373 - H315 - H319 - H317 - H412
- GHS-P sentences: P260 - P285 - P285 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, oxidizing agent, synthesis of organic products.

1 ml = 0,012258 g  $K_2Cr_2O_7$ . This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

#### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty  $\pm$  0,001

Art. No.	Volume	Container
P002321000	1 l	0

### P00233 Potassium dichromate, solution 0,04 mol/l, for COD determination



- $K_2Cr_2O_7$
- M = 294,19 g/mol
- CAS [7778-50-9]
- EINECS-No.: 231-906-6
- Density: 1,004 g/cm<sup>3</sup>
- LD 50 (oral, rat): 25 mg/kg (toxic component)
- EC-Index-No.: 024-002-00-6
- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- GHS-signal word: Danger

- GHS-H sentences: H334 - H340 - H350 - H360FD - H373 - H315 - H319 - H317 - H412
- GHS-P sentences: P260 - P285 - P285 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: analytical chemistry (determining COD), oxidizing agent.

1 ml = 0,01176 g  $K_2Cr_2O_7$ . This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

#### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty  $\pm$  0,001

Art. No.	Volume	Container
P002331000	1 l	0

### P00234 Potassium dichromate 0,04 mol/l / mercury(II) sulfate 80 g/l, solution in sulfuric acid, for COD determination, according to ISO 6060



- Density: ~ 1,19 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 CT1 II UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- GHS-signal word: Danger
- GHS-H sentences: H331 - H334 - H340 - H350 - H360FD - H373 - H314 - H302 - H317 - H411
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, determining COD.

- Appearance: Orange liquid
- Specifications:**  
titer . . . . . 0,039 - 0,041  
uncertainty . . . . .  $\pm$  0,001

1 ml = 0,01176 g  $K_2Cr_2O_7$ . This volumetric solution was checked by means of volumetric methods using an ammonium iron(II) sulfate standard solution, that was also checked against Scharlau's potassium dichromate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P002341000	1 l	0

### P00230 Potassium dichromate, solution 1/60 mol/l (0,1N)



- $K_2Cr_2O_7$
- M = 294,19 g/mol
- CAS [7778-50-9]
- EINECS-No.: 231-906-6
- Density: 1,002 g/cm<sup>3</sup>
- LD 50 (oral, rat): 25 mg/kg (toxic component)
- EC-Index-No.: 024-002-00-6
- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- GHS-signal word: Danger
- GHS-H sentences: H340 - H350 - H360FD - H412

- GHS-P sentences: P281 - P273 - P201 - P308 + P313 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, oxidizing agent.

1 ml = 0,004903 g  $K_2Cr_2O_7$ . This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

#### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty  $\pm$  0,001

Art. No.	Volume	Container
P002301000	1 l	0



## P00218 Potassium dichromate, solution 1/120 mol/l (0,05 N)

- $K_2Cr_2O_7$
- M = 294,19 g/mol
- CAS [7778-50-9]
- EINECS-No.: 231-906-6
- LD 50 (oral, rat): 25 mg/kg (toxic component)
- EC-Index-No.: 024-002-00-6
- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- GHS-signal word: Danger
- GHS-H sentences: H340 - H350 - H412

- GHS-P sentences: P281 - P273 - P201 - P308 + P313 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, oxidizing agent.

### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty  $\pm$  0,001

1 ml = 0,002452 g  $K_2Cr_2O_7$ . This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P002181000	1 l	

## P00221 Potassium dichromate, concentrated solution to prepare 1 l of solution 1/60 mol/l (0,1N)

- $K_2Cr_2O_7$
- M = 294,19 g/mol
- CAS [7778-50-9]
- EINECS-No.: 231-906-6
- Density: 1,06 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 25 mg/kg (toxic component)
- EC-Index-No.: 024-002-00-6
- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287

- IATA/ICAO: 6.1 III UN 3287
- GHS-signal word: Danger
- GHS-H sentences: H334 - H340 - H350 - H360FD - H373 - H318 - H332 - H315 - H317 - H411
- GHS-P sentences: P260 - P285 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

### Specifications:

amount of substance: 4,9031 g  $K_2Cr_2O_7$   
concentrated solution. . . . . 1/6 mol/l  $\pm$  0,1 %

Art. No.	Volume	Container
P0022100PA	u.	

## Potassium dihydrogen phosphate

- Synonyms: Potassium biphosphate, Potassium phosphate monobasic, Primary potassium phosphate, Mono-potassium phosphate
- $KH_2PO_4$





- M = 136,09 g/mol
- CAS [7778-77-0]
- EINECS-No.: 231-913-4
- Solub. in water: (20 °C): 222 g/l

- Melting point: - 253 °C (decomposes)
- Tariff number: 2835 24 00 00
- Applications: analytical chemistry; in buffer solutions.

## P00259 Potassium dihydrogen phosphate, extra pure, Pharmpur®, Ph Eur, BP, NF

assay (acidimetric, on dried sample) . . . . . 98 - 100,5 %  
identification . . . . . passes test  
appearance of solution . . . . . clear and colourless  
insoluble matter . . . . . max. 0,2 %  
pH (5 %, H<sub>2</sub>O) . . . . . 4,2 - 4,5  
chlorides (Cl) . . . . . max. 0,02 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,03 %  
arsenic (As) . . . . . max. 0,0003 %






lead (Pb) . . . . . max. 0,0005 %  
fluorides (F) . . . . . max. 0,001 %  
heavy metals (as Pb) . . . . . max. 0,002 %  
iron (Fe) . . . . . max. 0,001 %  
sodium (Na) . . . . . max. 0,1 %  
reducing substances . . . . . passes test  
loss on drying (130 °C) . . . . . max. 2 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P002590500	500 g	
P002591000	1 kg	
P00259005P	5 kg	
P00259025P	25 kg	

## P00260 Potassium dihydrogen phosphate, reagent grade, ACS, ISO, Reag. Ph Eur,

assay (acidimetric) . . . . . min. 99,5 %  
identity . . . . . passes test  
appearance of solution (10 %, H<sub>2</sub>O) . . . . . clear and colourless  
insoluble in water . . . . . max. 0,01 %  
pH (5 %, H<sub>2</sub>O) . . . . . 4,2 - 4,5  
chlorides (Cl) . . . . . max. 0,0005 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,003 %  
total nitrogen (as N) . . . . . max. 0,001 %

arsenic (As) . . . . . max. 0,0002 %  
heavy metals (as Pb) . . . . . max. 0,001 %  
iron (Fe) . . . . . max. 0,001 %  
sodium (Na) . . . . . max. 0,005 %  
substances reducing KMnO<sub>4</sub> . . . . . passes test  
loss on drying (105 °C, 1h) . . . . . max. 0,2 %

Art. No.	Volume	Container
P002600250	250 g	
P002600500	500 g	
P002601000	1 kg	
P00260005P	5 kg	
P00260025P	25 kg	

## P00261 Potassium dihydrogen phosphate, HPLC grade

assay (acidimetric) . . . . . min. 99,5 %  
identity (IR-spectrum) . . . . . passes test  
insoluble matter . . . . . passes test  
pH (5 %, H<sub>2</sub>O) . . . . . 4,2 - 4,5  
chlorides (Cl) . . . . . max. 0,0005 %  
iron (Fe) . . . . . max. 0,0005 %

heavy metals (as Pb) . . . . . max. 0,0005 %  
max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength: absorbance:  
210 nm . . . . . 0,1 AU  
220 nm . . . . . 0,06 AU  
230 nm . . . . . 0,04 AU

300 nm . . . . . 0,02 AU

Art. No.	Volume	Container
P002610250	250 g	

## P00262 Potassium dihydrogen phosphate, molecular biology grade

assay (acidimetric) . . . . . min. 99,5 %  
absorbance of an aqueous solution  
0,1 M in a 1 cm cell at 260 nm . . . . . max. 0,005 AU

absorbance of an aqueous solution  
0,1 M in a 1 cm cell at 280 nm . . . . . max. 0,005 AU  
heavy metals (as Pb) . . . . . max. 0,001 %  
DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
P002620100	100 g	
P002621000	1 kg	

## Potassium disulfite

- Synonyms: Potassium metabisulfite, Potassium pyrosulfite
- $K_2S_2O_5$
- M = 222,33 g/mol
- CAS [16731-55-8]
- EINECS-No.: 240-795-3

- Solub. in water: (20 °C): 450 g/l
- Melting point: 190 °C
- LD 50 (oral, rat): 2300 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H318 - H335 - EUH031

- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2832 20 00 00
- Applications: analytical chemistry, laboratory reagent, inorganic salts, preservative agent (in food industry).

# Potass

## P00242 Potassium disulfite, extra pure, Pharmpur®, Ph Eur, NF

assay (iodometric) . . . . .	.95 - 101 %	heavy metals (as Pb) . . . . .	max. 0,001 %
assay (iodometric, as SO <sub>2</sub> ) . . . . .	51,8 - 57,6 %	iron (Fe) . . . . .	max. 0,001 %
identification . . . . .	passes test	selenium (Se) . . . . .	max. 0,001 %
appearance of solution . . . . .	clear and colourless	zinc (Zn) . . . . .	max. 0,0025 %
pH (5 %, H <sub>2</sub> O) . . . . .	3,0 - 4,5	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	
thiosulfates (S <sub>2</sub> O <sub>3</sub> ) . . . . .	passes test		

Art. No.	Volume	Container
P002421000	1 kg	
P00242005P	5 kg	
P00242025P	25 kg	

## P00241 Potassium disulfite, reagent grade

assay (iodometric) . . . . .	min. 96 %	copper (Cu) . . . . .	max. 0,001 %
insoluble in water . . . . .	max. 0,005 %	iron (Fe) . . . . .	max. 0,0005 %
chlorides (Cl) . . . . .	max. 0,005 %	lead (Pb) . . . . .	max. 0,001 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,0002 %	nickel (Ni) . . . . .	max. 0,001 %
thiosulfates (S <sub>2</sub> O <sub>3</sub> ) . . . . .	max. 0,05 %	zinc (Zn) . . . . .	max. 0,001 %
arsenic (As) . . . . .	max. 0,0001 %		

Art. No.	Volume	Container
P002410500	500 g	
P002411000	1 kg	
P00241005P	5 kg	
P00241025P	25 kg	

## Potassium fluoride

### P00256 Potassium fluoride, extra pure, Reag. Ph Eur

<ul style="list-style-type: none"> <li>Synonyms: Fluorine potassium</li> <li>KF</li> <li>M = 58,10 g/mol</li> <li>CAS [7789-23-3]</li> <li>EINECS-No.: 232-151-5</li> <li>Solub. in water: (20 °C): soluble</li> <li>Melting point: ~ 855 °C</li> <li>Boiling point: 1500 °C</li> <li>Vapour pressure: (885 °C) 1,3 hPa</li> <li>LD 50 (oral, rat): 245 mg/kg</li> <li>EC-Index-No.: 009-005-00-2</li> <li>ADR: 6.1 T5 III UN 1812</li> <li>IMDG: 6.1 III UN 1812</li> <li>IATA/ICAO: 6.1 III UN 1812</li> <li>GHS-signal word: Danger</li> </ul>	<ul style="list-style-type: none"> <li>GHS-H sentences: H301 - H311 - H331</li> <li>GHS-P sentences: P261 - P301 + P310 - P361 - P321 - P405 - P501a</li> <li>Tariff number: 2826 19 90 90</li> <li>Applications: synthesis of organic products (fluorides), insecticide.</li> <li>Appearance: White solid</li> </ul>
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sulfates (SO <sub>4</sub> ) . . . . .	max. 0,1 %
heavy metals (as Pb) . . . . .	max. 0,003 %
iron (Fe) . . . . .	max. 0,003 %
residue on ignition (500 °C, 15 min) . . . . .	max. 0,3 %

Art. No.	Volume	Container
P002560500	500 g	
P002561000	1 kg	
P00256005P	5 kg	
P00256025P	25 kg	

## Potassium hexacyanoferrate(II) trihydrate

<ul style="list-style-type: none"> <li>Synonyms: Potassium ferrocyanide, Yellow prussiate of potash, Ferrocyanpotassium</li> <li>K<sub>4</sub>[Fe(CN)<sub>6</sub>]·3H<sub>2</sub>O</li> <li>M = 422,39 g/mol</li> <li>CAS [14459-95-1]</li> </ul>	<ul style="list-style-type: none"> <li>EINECS-No.: 237-722-2</li> <li>Solub. in water: (20 °C): 289 g/l</li> <li>Melting point: ~ 70 °C (release of crystalline water)</li> <li>LD 50 (oral, rat): 3613 mg/kg (anhydrous substance)</li> <li>GHS-H sentences: H412</li> </ul>
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GHS-P sentences: P273 - P501a
Tariff number: 2837 20 00 90
Applications: analytical chemistry, laboratory reagent, in food industry.

## P00247 Potassium hexacyanoferrate(II) trihydrate, extra pure

assay (permanganometric) . . . . .	min. 99 %	arsenic (As) . . . . .	max. 0,0003 %
insoluble in water . . . . .	max. 0,025 %	copper (Cu) . . . . .	max. 0,0025 %
chlorides (Cl) . . . . .	max. 0,05 %	lead (Pb) . . . . .	max. 0,001 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,01 %	zinc (Zn) . . . . .	max. 0,0025 %
ferricyanide . . . . .	passes test	water . . . . .	max. 1 %

Art. No.	Volume	Container
P002471000	1 kg	
P00247005P	5 kg	

## P00248 Potassium hexacyanoferrate(II) trihydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (permanganometric) . . . . .	.99 - 102 %	lead (Pb) . . . . .	max. 0,002 %
insoluble in water . . . . .	max. 0,005 %	sodium (Na) . . . . .	max. 0,01 %
chlorides (Cl) . . . . .	max. 0,01 %		
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,005 %		
cadmium (Cd) . . . . .	max. 0,0005 %		
copper (Cu) . . . . .	max. 0,002 %		

Art. No.	Volume	Container
P002480500	500 g	
P002481000	1 kg	
P00248005P	5 kg	
P00248025P	25 kg	

## Potassium hexacyanoferrate(II), solution 10%

### P00249 Potassium hexacyanoferrate(II), solution 10% w/v

<ul style="list-style-type: none"> <li>Synonyms: Potassium ferrocyanide solution</li> <li>K<sub>4</sub>[Fe(CN)<sub>6</sub>]·3H<sub>2</sub>O</li> <li>M = 422,39 g/mol</li> <li>CAS [14459-95-1]</li> <li>Density: 1,060 g/cm<sup>3</sup></li> <li>LD 50 (oral, rat): 3613 mg/kg (anhydrous substance)</li> <li>GHS-H sentences: EUH210</li> <li>Tariff number: 2837 20 00 00</li> </ul>	<ul style="list-style-type: none"> <li>Applications: analytical chemistry, for determination of: iron.</li> </ul>
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cadmium (Cd) . . . . .	max. 0,0005 %
copper (Cu) . . . . .	max. 0,002 %
lead (Pb) . . . . .	max. 0,002 %
sodium (Na) . . . . .	max. 0,01 %

Art. No.	Volume	Container
P002490250	250 ml	

## Potassium hexacyanoferrate(III)

<ul style="list-style-type: none"> <li>Synonyms: Potassium ferricyanide, Ferricyanpotassium, Potassium cyanoferrate(III)</li> <li>K<sub>3</sub>[Fe(CN)<sub>6</sub>]</li> <li>M = 329,26 g/mol</li> </ul>	<ul style="list-style-type: none"> <li>CAS [13746-66-2]</li> <li>EINECS-No.: 237-323-3</li> <li>Solub. in water: (20 °C): 464 g/l</li> <li>Tariff number: 2837 20 00 00</li> </ul>
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Applications: analytical chemistry, laboratory reagent, painting, photography, manufacture of dyes, oxidizing agent (synthesis of organic products).
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**PO0240 Potassium hexacyanoferrate(III), extra pure**

assay (iodometric) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,025 %  
 chlorides (Cl) . . . . .max. 0,05 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %

Art. No.	Volume	Container
PO02400500	500 g	
PO02401000	1 kg	
PO0240005P	5 kg	
PO0240025P	25 kg	

**PO0243 Potassium hexacyanoferrate(III), reagent grade, ACS, ISO**

assay (iodometric) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,005 %  
 chlorides (Cl) . . . . .max. 0,01 %  
 hexacyanoferrate (II) [Fe(CN)<sub>6</sub>]<sup>4-</sup> . . . . .max. 0,02 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
 copper (Cu) . . . . .max. 0,005 %

lead (Pb) . . . . .max. 0,002 %  
 nickel (Ni) . . . . .max. 0,001 %  
 sodium (Na) . . . . .max. 0,02 %  
 zinc (Zn) . . . . .max. 0,0005 %

Art. No.	Volume	Container
PO02430500	500 g	
PO02431000	1 kg	
PO0243005P	5 kg	
PO0243025P	25 kg	

**Potassium hexahydroxoantimonate(V)****PO0120 Potassium hexahydroxoantimonate(V), extra pure**

• Synonyms: Potassium antimonate  
 • K[Sb(OH)<sub>6</sub>]  
 • M = 262,90 g/mol  
 • CAS [12208-13-8]  
 • EINECS-No.: 235-387-7  
 • Solub. in water: (20 °C): 20 g/l  
 • EC-Index-No.: 051-003-00-9  
 • ADR: 6.1 T5 III UN 1549  
 • IMDG: 6.1 III UN 1549

• IATA/ICAO: 6.1 III UN 1549  
 • GHS-signal word: Warning  
 • GHS-H sentences: H302 - H332 - H411  
 • GHS-P sentences: P261 - P273 - P301 + P312 - P304 + P340 - P312 - P501a  
 • Tariff number: 2841 90 80 00  
 • Applications: analytical chemistry, laboratory reagent.  
 • Appearance: White solid

**Specifications:**

assay (iodometric, as Sb) . . . . .44,4 - 49,7 %  
 identity (IR-spectrum) . . . . .passes test  
 loss on drying (110 °C) . . . . .max. 10 %

Art. No.	Volume	Container
PO01200100	100 g	

**Potassium hydrogen carbonate****PO0173 Potassium hydrogen carbonate, reagent grade, Reag. Ph Eur**

• Synonyms: Potassium bicarbonate  
 • KHCO<sub>3</sub>  
 • M = 100,12 g/mol  
 • CAS [298-14-6]  
 • EINECS-No.: 206-059-0  
 • Solub. in water: (20 °C): 224 g/l  
 • Melting point: 292 °C  
 • LD 50 (oral, rat): > 2000 mg/kg  
 • Tariff number: 2836 40 00 00  
 • Applications: in food industry, effervescent salt.

**Specifications:**

assay (acidimetric) . . . . .min. 99,5 %  
 chlorides (Cl) . . . . .max. 0,001 %  
 phosphates and silicates (as SiO<sub>2</sub>) . . . . .max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,001 %  
 total nitrogen (as N) . . . . .max. 0,001 %  
 aluminium (Al) . . . . .max. 0,0005 %  
 calcium (Ca) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0005 %

sodium (Na) . . . . .max. 0,02 %

Art. No.	Volume	Container
PO01730500	500 g	
PO01731000	1 kg	
PO0173005P	5 kg	
PO0173025P	25 kg	

**di-Potassium hydrogen phosphate anhydrous**

• Synonyms: Dipotassium hydrogen phosphate, Potassium phosphate dibasic  
 • K<sub>2</sub>HPO<sub>4</sub>  
 • M = 174,18 g/mol

• CAS [7758-11-4]  
 • EINECS-No.: 231-834-5  
 • Solub. in water: (20 °C): soluble  
 • Tariff number: 2835 24 00 00

• Applications: analytical chemistry, in buffer solutions (phosphates), nutrient media for bacterial culture.

**PO0257 di-Potassium hydrogen phosphate anhydrous, extra pure, Pharmpur®, Ph Eur, BP, USP**

assay (acidimetric, on dried sample) . . . . .98 - 101 %  
 identification . . . . .passes test  
 appearance of solution . . . . .clear and colourless  
 pH (5 %, H<sub>2</sub>O) . . . . .8,5 - 9,6  
 insoluble matter . . . . .max. 0,2 %  
 chlorides (Cl) . . . . .max. 0,03 %  
 carbonate . . . . .passes test  
 fluorides (F) . . . . .max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,1 %

arsenic (As) . . . . .max. 0,0003 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,003 %  
 sodium (Na) . . . . .max. 0,1 %  
 potassium dihydrogen phosphate . . . . .max. 2,5 %  
 potassium dihydrogen phosphate and tri-potassium phosphate . . . . .passes test  
 reducing substances . . . . .passes test  
 loss on drying (130 °C) . . . . .max. 2 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
PO02570500	500 g	
PO02571000	1 kg	
PO0257005P	5 kg	
PO0257025P	25 kg	

**PO0258 di-Potassium hydrogen phosphate anhydrous, reagent grade, ACS, Reag. Ph Eur**

assay (acidimetric, on dried sample) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,01 %  
 pH (5 %, H<sub>2</sub>O) . . . . .8,5 - 9,6  
 chlorides (Cl) . . . . .max. 0,003 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %

total nitrogen (as N) . . . . .max. 0,001 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,001 %  
 sodium (Na) . . . . .max. 0,05 %  
 loss on drying (105 °C) . . . . .max. 1,0 %

Art. No.	Volume	Container
PO02580500	500 g	
PO02581000	1 kg	
PO0258005P	5 kg	
PO0258025P	25 kg	

**di-Potassium hydrogen phosphate trihydrate**

• Synonyms: Secondary potassium phosphate, Potassium phosphate dibasic  
 • K<sub>2</sub>HPO<sub>4</sub>·3H<sub>2</sub>O

• M = 228,23 g/mol  
 • CAS [16788-57-1]  
 • EINECS-No.: 231-834-5

• Solub. in water: (20 °C): freely soluble  
 • Tariff number: 2835 24 00 00  
 • Applications: in buffer solutions (chromatography).

# Potass

## P00269 di-Potassium hydrogen phosphate trihydrate, extra pure

assay (acidimetric) . . . . .	.98 - 102 %	arsenic (As) . . . . .	max. 0,0005 %
insoluble in water . . . . .	max. 0,01 %	copper (Cu) . . . . .	max. 0,003 %
pH (5 %, H <sub>2</sub> O) . . . . .	8,5 - 9,6	iron (Fe) . . . . .	max. 0,003 %
chlorides (Cl) . . . . .	max. 0,005 %	lead (Pb) . . . . .	max. 0,003 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,01 %	nickel (Ni) . . . . .	max. 0,003 %
nitrogen compounds (as N) . . . . .	max. 0,005 %		

Art. No.	Volume	Container
P002690500	500 g	
P002691000	1 kg	
P00269005P	5 kg	

## P00271 di-Potassium hydrogen phosphate trihydrate, reagent grade, Reag. Ph Eur

assay (acidimetric) . . . . .	min. 98 %	copper (Cu) . . . . .	max. 0,003 %
insoluble in water . . . . .	max. 0,01 %	heavy metals (as Pb) . . . . .	max. 0,001 %
pH (5 %, H <sub>2</sub> O) . . . . .	8,5 - 9,6	iron (Fe) . . . . .	max. 0,0005 %
chlorides (Cl) . . . . .	max. 0,001 %	lead (Pb) . . . . .	max. 0,001 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,005 %	nickel (Ni) . . . . .	max. 0,001 %
total nitrogen (as N) . . . . .	max. 0,001 %	sodium (Na) . . . . .	max. 0,1 %
arsenic (As) . . . . .	max. 0,00005 %		

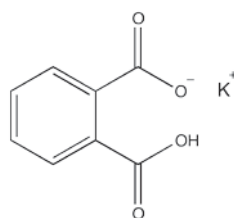
Art. No.	Volume	Container
P002710500	500 g	
P002711000	1 kg	
P00271005P	5 kg	

## P00270 di-Potassium hydrogen phosphate trihydrate, HPLC grade

assay (acidimetric) . . . . .	min. 99 %	cell at wavelength:	absorbance:
identity (IR-spectrum) . . . . .	passes test	230 nm. . . . .	0,1 AU
insoluble matter . . . . .	passes test	240 nm. . . . .	0,06 AU
pH (5 %, H <sub>2</sub> O) . . . . .	9,2 - 9,4	250 nm. . . . .	0,04 AU
max. absorbance of an aqueous sol. 10 % in a 1,0 cm		310 nm. . . . .	0,02 AU

Art. No.	Volume	Container
P002700250	250 g	
P002701000	1 kg	

## Potassium hydrogen phthalate



- Synonyms: Potassium biphthalate, Phthalic acid monopotassium salt, KHP
- C<sub>8</sub>H<sub>5</sub>KO<sub>4</sub>
- M = 204,22 g/mol
- CAS [877-24-7]
- EINECS-No.: 212-889-4
- Solub. in water: (20 °C): 80 g/l
- Melting point: 295 - 300 °C
- LD 50 (oral, rat): > 3200 mg/kg

- Tariff number: 2917 39 80 80
- Applications: analytical chemistry, titrant in volumetric analysis (bases), in buffer solutions.

## P00130 Potassium hydrogen phthalate, reagent grade, Reag. Ph Eur

assay (acidimetric, on dried sample) . . . . .	min. 99,9 %	copper (Cu) . . . . .	max. 0,0002 %
identity (IR-spectrum) . . . . .	passes test	heavy metals (as Pb) . . . . .	max. 0,0005 %
insoluble in water . . . . .	max. 0,005 %	iron (Fe) . . . . .	max. 0,0005 %
phthalic acid . . . . .	max. 0,005 %	lead (Pb) . . . . .	max. 0,0005 %
chlorides (Cl) . . . . .	max. 0,002 %	nickel (Ni) . . . . .	max. 0,0005 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,005 %	sodium (Na) . . . . .	max. 0,01 %
cadmium (Cd) . . . . .	max. 0,0005 %	zinc (Zn) . . . . .	max. 0,0005 %
cobalt (Co) . . . . .	max. 0,0005 %	loss on drying (105 °C) . . . . .	max. 0,2 %

Art. No.	Volume	Container
P001300500	500 g	
P001301000	1 kg	
P00130005P	5 kg	

## P00131 Potassium hydrogen phthalate, secondary standard for volumetric titrations, Titrasure®

assay (acidimetric, on dried sample) . . . . .	.99,95 - 100,05 %	chlorine compounds (as Cl) . . . . .	max. 0,003 %
identity (IR-spectrum) . . . . .	passes test	chlorides (Cl) . . . . .	max. 0,002 %
insoluble in water . . . . .	max. 0,005 %	total nitrogen (as N) . . . . .	max. 0,001 %
pH (0,05 mol/l, H <sub>2</sub> O, 25 °C) . . . . .	4,00 - 4,02	heavy metals (as Pb) . . . . .	max. 0,0005 %
		iron (Fe) . . . . .	max. 0,0005 %

sodium (Na) . . . . . max. 0,005 %  
sulfur compounds (as S) . . . . . max. 0,002 %

Art. No.	Volume	Container
P001310100	100 g	

## Potassium hydrogen sulfate

### P00272 Potassium hydrogen sulfate, extra pure, Reag. Ph Eur

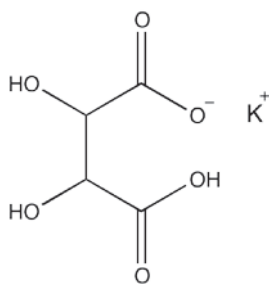
<ul style="list-style-type: none"> <li>• Synonyms: Potassium bisulfate</li> <li>• KH<sub>2</sub>SO<sub>4</sub></li> <li>• M = 136,17 g/mol</li> <li>• CAS [7646-93-7]</li> <li>• EINECS-No.: 231-594-1</li> <li>• Solub. in water: (20 °C): 490 g/l (exothermic process)</li> <li>• Melting point: 210 °C (decomposes)</li> <li>• LD 50 (oral, rat): 2340 mg/kg</li> <li>• EC-Index-No.: 016-056-00-4</li> <li>• ADR: 8 C2 II UN 2509</li> <li>• IMDG: 8 II UN 2509</li> <li>• IATA/ICAO: 8 II UN 2509</li> <li>• GHS-signal word: Danger</li> <li>• GHS-H sentences: H314 - H335</li> </ul>	<ul style="list-style-type: none"> <li>• GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a</li> <li>• Tariff number: 2833 29 90 00</li> <li>• Applications: analytical chemistry, laboratory reagent, for determination of: silicon compounds and ores.</li> </ul> <p><b>Specifications:</b></p> <table> <tr> <td>assay (acidimetric) . . . . .</td> <td>min. 99 %</td> </tr> <tr> <td>chlorides (Cl) . . . . .</td> <td>max. 0,003 %</td> </tr> <tr> <td>nitrates (NO<sub>3</sub>) . . . . .</td> <td>max. 0,005 %</td> </tr> <tr> <td>phosphates (as PO<sub>4</sub>) . . . . .</td> <td>max. 0,005 %</td> </tr> <tr> <td>aluminium (Al) . . . . .</td> <td>max. 0,002 %</td> </tr> <tr> <td>calcium (Ca) . . . . .</td> <td>max. 0,01 %</td> </tr> <tr> <td>arsenic (As) . . . . .</td> <td>max. 0,0005 %</td> </tr> </table>	assay (acidimetric) . . . . .	min. 99 %	chlorides (Cl) . . . . .	max. 0,003 %	nitrates (NO <sub>3</sub> ) . . . . .	max. 0,005 %	phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,005 %	aluminium (Al) . . . . .	max. 0,002 %	calcium (Ca) . . . . .	max. 0,01 %	arsenic (As) . . . . .	max. 0,0005 %
assay (acidimetric) . . . . .	min. 99 %														
chlorides (Cl) . . . . .	max. 0,003 %														
nitrates (NO <sub>3</sub> ) . . . . .	max. 0,005 %														
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,005 %														
aluminium (Al) . . . . .	max. 0,002 %														
calcium (Ca) . . . . .	max. 0,01 %														
arsenic (As) . . . . .	max. 0,0005 %														

copper (Cu) . . . . . max. 0,005 %  
heavy metals (as Pb) . . . . . max. 0,004 %  
iron (Fe) . . . . . max. 0,002 %  
lead (Pb) . . . . . max. 0,005 %  
magnesium (Mg) . . . . . max. 0,01 %  
nickel (Ni) . . . . . max. 0,01 %

Art. No.	Volume	Container
P002720500	500 g	
P002721000	1 kg	
P00272005P	5 kg	

## Potassium hydrogen tartrate

## P00150 Potassium hydrogen tartrate, extra pure, Pharmpur®, Ph Eur, BP



- Synonyms: Potassium bitartrate, Tartaric acid mono-potassium salt
- $C_4H_5KO_6$
- $M = 188,14 \text{ g/mol}$
- CAS [868-14-4]
- EINECS-No.: 212-769-1
- Solub. in water: (20 °C): 5,7 g/l
- Melting point: ~ 250 °C (decomposes)
- Tariff number: 2918 13 00 90
- Applications: in food industry, in galvanotechnology, colouring agent (metals), in pharma industry.

## Specifications:

assay (acidimetric, on dried sample) . . . . . 99,5 - 100,5 %  
 identification . . . . . passes test

free acid (as tartaric acid) . . . . . max. 0,2 %  
 specific rotation ( $[\alpha]_{20^\circ/D}$ ) . . . . . + 8,0 ° - + 9,2 °  
 chlorides (Cl) . . . . . max. 0,05 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,05 %  
 oxalic acid ( $C_2H_2O_4$ ) . . . . . max. 0,05 %  
 barium (Ba) . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 loss on drying (105 °C) . . . . . max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P001500500	500 g	
P001501000	1 kg	

## Potassium hydroxide

- Synonyms: Potash caustic, Potassium hydrate, Potassium oxide hydrate
- KOH
- $M = 56,11 \text{ g/mol}$
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Solub. in water: (20 °C): soluble
- Melting point: 360 °C

- Boiling point: 1320 °C
- LD 50 (oral, rat): 273 mg/kg
- EC-Index-No.: 019-002-00-8
- ADR: 8 C6 II UN 1813
- IMDG: 8 II UN 1813
- IATA/ICAO: 8 II UN 1813
- GHS-signal word: Danger
- GHS-H sentences: H314 - H302

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 20 10 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, synthesis of organic products, in the pharmaceuticals industry.

## P00263 Potassium hydroxide, 90%, flakes, pure

assay (acidimetric) . . . . . approx. 90 %  
 insoluble in water . . . . . max. 0,05 %  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,05 %

arsenic (As) . . . . . max. 0,0003 %  
 iron (Fe) . . . . . max. 0,005 %  
 lead (Pb) . . . . . max. 0,005 %

Art. No.	Volume	Container
P002631000	1 kg	
P00263005P	5 kg	

## P00266 Potassium hydroxide, pellets, extra pure, Pharmpur®, Ph Eur, BP, NF

assay (acidimetric) . . . . . 85 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 insoluble matter . . . . . passes test  
 carbonates (as  $K_2CO_3$ ) . . . . . max. 2 %  
 chlorides (Cl) . . . . . max. 0,005 %  
 phosphates (as  $PO_4$ ) . . . . . max. 0,002 %

sulfates ( $SO_4$ ) . . . . . max. 0,005 %  
 aluminium (Al) . . . . . max. 0,001 %  
 heavy metals (as Pb) . . . . . max. 0,003 %  
 iron (Fe) . . . . . max. 0,001 %  
 sodium (Na) . . . . . max. 1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P002660500	500 g	
P002661000	1 kg	
P00266005P	5 kg	
P00266025P	25 kg	

## P00275 Potassium hydroxide, pellets, reagent grade, ACS, ISO, Reag. Ph Eur

assay (acidimetric) . . . . . min. 85 %  
 identity . . . . . passes test  
 appearance of solution . . . . . passes test  
 carbonates (as  $K_2CO_3$ ) . . . . . max. 1,0 %  
 chlorides (Cl) . . . . . max. 0,0005 %  
 phosphates (as  $PO_4$ ) . . . . . max. 0,0005 %  
 silicates ( $SiO_2$ ) . . . . . max. 0,002 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,0005 %  
 ammonium hydroxide precipitate . . . . . max. 0,02 %  
 total nitrogen (as N) . . . . . max. 0,0003 %

aluminium (Al) . . . . . max. 0,0002 %  
 cadmium (Cd) . . . . . max. 0,00001 %  
 calcium (Ca) . . . . . max. 0,0005 %  
 copper (Cu) . . . . . max. 0,0001 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0001 %  
 magnesium (Mg) . . . . . max. 0,0005 %  
 manganese (Mn) . . . . . max. 0,00005 %  
 nickel (Ni) . . . . . max. 0,0001 %

sodium (Na) . . . . . max. 0,05 %  
 zinc (Zn) . . . . . max. 0,0001 %

Art. No.	Volume	Container
P002750500	500 g	
P002751000	1 kg	
P00275005P	5 kg	
P00275025P	25 kg	

## Potassium hydroxide, solution 40% w/v

## P00273 Potassium hydroxide, solution 40% w/v, extra pure

- Synonyms: Caustic potash, Potassium hydrate, Potassium oxide hydrate
- KOH
- $M = 56,11 \text{ g/mol}$
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 1,29 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 273 mg/kg (pure substance)
- EC-Index-No.: 019-002-00-8
- ADR: 8 C5 II UN 1814
- IMDG: 8 II UN 1814

- IATA/ICAO: 8 II UN 1814
- GHS-signal word: Danger
- GHS-H sentences: H314 - H302
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 20 90 00
- Applications: laboratory reagent, synthesis of organic products, perfumery.

## Specifications:

assay (acidimetric) . . . . . min. 40 %  
 carbonates (as  $Na_2CO_3$ ) . . . . . max. 1 %

chlorides (Cl) . . . . . max. 0,002 %  
 phosphates (as  $PO_4$ ) . . . . . max. 0,002 %  
 silicates ( $SiO_2$ ) . . . . . max. 0,005 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,003 %  
 total nitrogen (as N) . . . . . max. 0,005 %  
 aluminium (Al) . . . . . max. 0,001 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %

Art. No.	Volume	Container
P002731000	1 l	

# Potass

## Potassium hydroxide, volumetric solutions

### P00288 Potassium hydroxide, solution 2 mol/l (2 N)

- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: ~ 1,09 g/cm<sup>3</sup>
- EC-Index-No.: 019-002-00-8
- ADR: 8 C5 II UN 1814
- IMDG: 8 II UN 1814
- IATA/ICAO: 8 II UN 1814
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 20 90 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,11222 g KOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P002881000	1 l	

### P00280 Potassium hydroxide, solution 1 mol/l (1 N)

- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 1,05 g/cm<sup>3</sup>
- LD 50 (oral, rat): 273 mg/kg (pure substance)
- EC-Index-No.: 019-002-00-8
- ADR: 8 C5 II UN 1814
- IMDG: 8 II UN 1814
- IATA/ICAO: 8 II UN 1814
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 2815 20 90 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,05611 g KOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P002800500	500 ml	
P002801000	1 l	
P00280005P	5 l	
P00280010C	10 l	

### P00281 Potassium hydroxide, solution 0,5 mol/l (0,5 N)

- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 1,02 g/cm<sup>3</sup>
- LD 50 (oral, rat): 273 mg/kg (pure substance)
- EC-Index-No.: 019-002-00-8
- ADR: 8 C5 II UN 1814
- IMDG: 8 II UN 1814
- IATA/ICAO: 8 II UN 1814
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 20 90 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,02806 g KOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P002811000	1 l	
P00281005P	5 l	
P00281010C	10 l	

### P00283 Potassium hydroxide, solution 0,23 mol/l (0,23 N), for determination of crude fibre, according to Weende

- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 1 g/cm<sup>3</sup>
- LD 50 (oral, rat): 273 mg/kg (pure substance)
- EC-Index-No.: 019-002-00-8
- ADR: 8 C5 III UN 1814
- IMDG: 8 III UN 1814
- IATA/ICAO: 8 III UN 1814
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2815 20 90 00
- Applications: analytical chemistry (for determination of raw fibre, according to Weende).

**Specifications:**

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,0129053 g KOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P002831000	1 l	
P00283005P	5 l	
P00283010C	10 l	

### P00282 Potassium hydroxide, solution 0,1 mol/l (0,1 N)

- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 1,01 g/cm<sup>3</sup>
- Boiling point: ~ 100 °C
- LD 50 (oral, rat): 273 mg/kg (pure substance)
- EC-Index-No.: 019-002-00-8
- ADR: 8 C5 III UN 1814
- IMDG: 8 III UN 1814
- IATA/ICAO: 8 III UN 1814
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2815 20 90 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,005611 g KOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P002821000	1 l	
P00282005P	5 l	
P00282010C	10 l	

## P00277 Potassium hydroxide, concentrated solution to prepare 1 l of solution 1 mol/l (1 N)

- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 1,58 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 273 mg/kg (pure substance)
- EC-Index-No.: 019-002-00-8
- ADR: 8 C5 II UN 1814

- IMDG: 8 II UN 1814
- IATA/ICAO: 8 II UN 1814
- GHS-signal word: Danger
- GHS-H sentences: H314 - H302
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 20 90 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

### Specifications:

amount of substance: 56,11 g KOH  
concentrated solution . . . . . 5 mol/l ± 0,1 %

Art. No.	Volume	Container
P0027700PA	u.	

## P00276 Potassium hydroxide, concentrated solution to prepare 1 l of solution 0,1 mol/l (0,1 N)

- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 1,09 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 273 mg/kg (pure substance)
- EC-Index-No.: 019-002-00-8
- ADR: 8 C5 II UN 1814

- IMDG: 8 II UN 1814
- IATA/ICAO: 8 II UN 1814
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 20 90 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

### Specifications:

amount of substance: 5,611 g KOH  
concentrated solution . . . . . 1 mol/l ± 0,1 %

Art. No.	Volume	Container
P0027600PA	u.	

## Potassium hydroxide, volumetric solutions in alcoholic medium

### P00278 Potassium hydroxide, ethanolic solution 0,5 mol/l

- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 0,82 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 12 °C
- Ignition temp.: 425 °C
- Vapour pressure: (20 °C) 59 hPa (ethanol)
- LD 50 (oral, rat): 273 mg/kg (KOH)
- EC-Index-No.: 019-002-00-8

- ADR: 3 FC II UN 2924
- IMDG: 3 II UN 2924
- IATA/ICAO: 3 II UN 2924
- GHS-signal word: Danger
- GHS-H sentences: H225 - H314
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00

### Specifications:

factor . . . . . 0,999 - 1,001

1 ml = 0,02806 g KOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P002781000	1 l	

### P00284 Potassium hydroxide, ethanolic solution 0,1 mol/l

- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 0,80 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 11 °C
- Ignition temp.: 425 °C
- LD 50 (oral, rat): 273 mg/kg (KOH)
- EC-Index-No.: 019-002-00-8
- ADR: 3 FC II UN 2924
- IMDG: 3 II UN 2924

- IATA/ICAO: 3 II UN 2924
- GHS-signal word: Danger
- GHS-H sentences: H225 - H315 - H319
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P321 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,005611 g KOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P002841000	1 l	
P00284005P	5 l	

### P00286 Potassium hydroxide, solution 0,5 mol/l (0,5 N) in methanol

- Density: 0,83 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 7 °C
- Ignition temp.: 455 °C (methanol)
- ADR: 3 FTC II UN 3286
- IMDG: 3 II UN 3286
- IATA/ICAO: 3 II UN 3286
- GHS-signal word: Danger
- GHS-H sentences: H225 - H331 - H314 - H370
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 3822 00 00 00

### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,02806 g KOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P002861000	1 l	

### P00292 Potassium hydroxide, solution 0,1 mol/l (0,1 N) in methanol

- Density:
- Solub. in water: (20 °C): miscible
- Flash pt. 7 °C
- Ignition temp.: 455 °C (methanol)
- LD 50 (oral, rat): 5628 mg/kg (methanol)
- ADR: 3 FTC II UN 3286
- IMDG: 3 II UN 3286
- IATA/ICAO: 3 II UN 3286
- GHS-signal word: Danger
- GHS-H sentences: H225 - H331 - H370 - H315 - H319

- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 3822 00 00 00

### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,005611 g KOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P002921000	1 l	
P00292010C	10 l	

# Potass

## P00289 Potassium hydroxide, solution 0,1 mol/l (0,1 N) in 2-propanol



- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 0,79 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 12 °C
- Ignition temp.: ~ 425 °C
- LD 50 (oral, rat): 5045 mg/kg (2-propanol)
- ADR: 3 FC II UN 2924
- IMDG: 3 II UN 2924
- IATA/ICAO: 3 II UN 2924

- GHS-signal word: Danger
- GHS-H sentences: H225 - H315 - H319 - H336
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 3814 00 90 99
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

1 ml = 0,005611 g KOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

Art. No.	Volume	Container
P002891000	1 l	0

## P00293 Potassium hydroxide, solution 0,05 mol/l (0,05 N) in 2-propanol



- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 0,79 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 12 °C
- Ignition temp.: ~ 425 °C
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993

- GHS-signal word: Danger
- GHS-H sentences: H225 - H319 - H336
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 3814 00 90 99

This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001  
1 ml = 0,0028055 g KOH

Art. No.	Volume	Container
P002931000	1 l	0

## P00294 Potassium hydroxide, solution 0,01 mol/l (0,01 N) in 2-propanol



- KOH
- M = 56,11 g/mol
- CAS [1310-58-3]
- EINECS-No.: 215-181-3
- Density: 0,79 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 12 °C
- Ignition temp.: ~ 425 °C
- ADR: 3 F1 II UN 1993
- IMDG: 3 II UN 1993
- IATA/ICAO: 3 II UN 1993

- GHS-signal word: Danger
- GHS-H sentences: H225 - H319 - H336
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 3814 00 90 99

1 ml = 0,0005611 g KOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

Art. No.	Volume	Container
P002941000	1 l	0

## Potassium iodate

- KIO<sub>3</sub>
- M = 214,00 g/mol
- CAS [7758-05-6]
- EINECS-No.: 231-831-9
- Solub. in water: (20 °C): soluble
- Melting point: 560 °C
- ADR: 5.1 O2 II UN 1479

- IMDG: 5.1 II UN 1479
- IATA/ICAO: 5.1 II UN 1479
- GHS-signal word: Danger
- GHS-H sentences: H272
- GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a
- Tariff number: 2829 90 80 00

- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis (oxidizing agent), in food industry.
- Appearance: Off-white crystalline powder

## P00401 Potassium iodate, extra pure



assay (iodometric, on dried sample) . . . . . 99 - 101 %  
insoluble in water . . . . . max. 0,05 %  
acidity or alkalinity . . . . . passes test  
pH (5 %, H<sub>2</sub>O) . . . . . 4 - 8  
chlorides and bromides (as Cl) . . . . . max. 0,05 %  
iodides (I) . . . . . max. 0,002 %  
nitrogen compounds (as N) . . . . . max. 0,01 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %  
copper (Cu) . . . . . max. 0,002 %  
iron (Fe) . . . . . max. 0,002 %  
lead (Pb) . . . . . max. 0,002 %  
nickel (Ni) . . . . . max. 0,002 %  
loss on drying (130 °C) . . . . . max. 0,1 %

Art. No.	Volume	Container
P004010100	100 g	0
P004010250	250 g	0
P004011000	1 kg	0
P00401005P	5 kg	0
P00401025P	25 kg	0

## P00400 Potassium iodate, reagent grade, ACS, ISO, Reag. Ph Eur



assay (iodometric) . . . . . 99,7 - 100,4 %  
insoluble in water . . . . . max. 0,005 %  
pH (5 %, H<sub>2</sub>O) . . . . . 5,0 - 8,0  
chlorides, chlorates, bromides and bromates (as Cl) . . . . . max. 0,01 %  
iodides (I) . . . . . max. 0,001 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %

total nitrogen (as N) . . . . . max. 0,002 %  
arsenic (As) . . . . . max. 0,0002 %  
copper (Cu) . . . . . max. 0,0005 %  
heavy metals (as Pb) . . . . . max. 0,0005 %  
iron (Fe) . . . . . max. 0,001 %  
sodium (Na) . . . . . max. 0,005 %  
loss on drying (130 °C) . . . . . max. 0,05 %

Art. No.	Volume	Container
P004000100	100 g	0
P004000250	250 g	0
P004001000	1 kg	0

## P00404 Potassium iodate, secondary standard for volumetric titrations, Titrasure®



assay (on dried sample) . . . . . 99,4 - 100,4 %  
chlorides and bromides (as Cl) . . . . . max. 0,01 %  
iodides (I) . . . . . max. 0,001 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %

total nitrogen (as N) . . . . . max. 0,005 %  
heavy metals (as Pb) . . . . . max. 0,0005 %  
iron (Fe) . . . . . max. 0,001 %  
sodium (Na) . . . . . max. 0,005 %

Art. No.	Volume	Container
P004040100	100 g	0



## Potassium iodide

- Synonyms: Knollide
- KI
- M = 166,01 g/mol
- CAS [7681-11-0]
- EINECS-No.: 231-659-4

- Solub. in water: (20 °C): soluble
- Melting point: 686 °C
- Boiling point: 1330 °C
- Vapour pressure: (745 °C) 1,3 hPa
- LD 50 (oral, rat): 2779 mg/kg

- Tariff number: 2827 60 00 90
- Applications: analytical chemistry, laboratory reagent, emulsifier (photography).

## P00411 Potassium iodide, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (argentometric, on dried sample) . . . . . 99,0 - 101,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 alkalinity . . . . . passes test  
 iodates (IO<sub>3</sub>) . . . . . passes test  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,015 %  
 thiosulfates (S<sub>2</sub>O<sub>3</sub>) . . . . . passes test

nitrites and ammonia . . . . . passes test  
 barium (Ba) . . . . . max. 0,002 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,002 %  
 loss on drying (105 °C, 3 h) . . . . . max. 1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P004110100	100 g	P
P004110250	250 g	P
P004110500	500 g	P
P004111000	1 kg	P
P00411005P	5 kg	P

## P00410 Potassium iodide, reagent grade, ACS, ISO, Reag. Ph Eur

assay (argentometric) . . . . . min. 99,5 %  
 insoluble in water . . . . . max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 6,0 - 9,2  
 chlorides and bromides (as Cl) . . . . . max. 0,01 %  
 iodates (IO<sub>3</sub>) and iodine (I) (as IO<sub>3</sub>) . . . . . max. 0,0002 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,001 %  
 thiosulfates (S<sub>2</sub>O<sub>3</sub>) . . . . . max. 0,005 %  
 total nitrogen (as N) . . . . . max. 0,001 %  
 arsenic (As) . . . . . max. 0,00001 %

barium (Ba) . . . . . max. 0,002 %  
 calcium (Ca) . . . . . max. 0,001 %  
 copper (Cu) . . . . . max. 0,0002 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0003 %  
 lead (Pb) . . . . . max. 0,0002 %  
 magnesium (Mg) . . . . . max. 0,001 %  
 sodium (Na) . . . . . max. 0,005 %  
 reducing substances . . . . . passes test  
 loss on drying (150°C, 6 h) . . . . . max. 0,2 %

Art. No.	Volume	Container
P004100250	250 g	P
P004100500	500 g	P
P004101000	1 kg	P
P00410005P	5 kg	P

## Potassium iodide, solution 15%

## P00415 Potassium iodide, solution 15% w/v, extra pure

- Synonyms: Knollide
- KI
- M = 166,01 g/mol
- CAS [7681-11-0]
- EINECS-No.: 231-659-4
- Tariff number: 2827 60 00 90
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**  
 assay (argentometric) . . . . . approx. 15 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,001 %  
 total nitrogen (as N) . . . . . max. 0,001 %  
 calcium (Ca) . . . . . max. 0,001 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0003 %

sodium (Na) . . . . . max. 0,03 %

Art. No.	Volume	Container
P004156100	100 ml	I
P004151000	1 l	P

## Potassium nitrate

- Synonyms: Nitric acid potassium salt, Saltpeter
- KNO<sub>3</sub>
- M = 101,11 g/mol
- CAS [7757-79-1]
- EINECS-No.: 231-818-8
- Solub. in water: (20 °C): 320 g/l
- Melting point: 334 °C

- LD 50 (oral, rat): 3750 mg/kg
- ADR: 5.1 O2 III UN 1486
- IMDG: 5.1 III UN 1486
- IATA/ICAO: 5.1 III UN 1486
- GHS-signal word: Danger
- GHS-H sentences: H272

- GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a
- Tariff number: 2834 21 00 00
- Applications: analytical chemistry, laboratory reagent, oxidizing agent, in pyrotechnics, manufacture of glass, in food industry.

## P00279 Potassium nitrate, technical grade

assay (acidimetric) . . . . . min. 98,5 %  
 nitrites (NO<sub>2</sub>) . . . . . max. 0,01 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,01 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 calcium (Ca) . . . . . max. 0,005 %

iron (Fe) . . . . . max. 0,001 %  
 sodium (Na) . . . . . max. 0,2 %

Art. No.	Volume	Container
P002790500	500 g	P
P002791000	1 kg	P
P00279005P	5 kg	P
P00279025P	25 kg	P

## P00285 Potassium nitrate, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (acidimetric, on dried sample) . . . . . 99 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 insoluble in water . . . . . max. 0,025 %  
 acidity or alkalinity . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,003 %  
 nitrites (NO<sub>2</sub>) . . . . . max. 0,0005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,015 %

ammonium (NH<sub>4</sub>) . . . . . max. 0,01 %  
 arsenic (As) . . . . . max. 0,0003 %  
 calcium (Ca) . . . . . max. 0,01 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,002 %  
 lead (Pb) . . . . . max. 0,001 %  
 sodium (Na) . . . . . max. 0,1 %  
 reducing substances . . . . . passes test  
 loss on drying (105 °C) . . . . . max. 0,5 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P002850500	500 g	P
P002851000	1 kg	P
P00285005P	5 kg	P
P00285025P	25 kg	P

## P00287 Potassium nitrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (acidimetric) . . . . . min. 99 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 4,5 - 8,5  
 insoluble in water . . . . . max. 0,005 %  
 chlorides (Cl) . . . . . max. 0,001 %  
 iodates (IO<sub>3</sub>) . . . . . max. 0,0005 %  
 nitrites (NO<sub>2</sub>) . . . . . max. 0,001 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,0005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,003 %

ammonium (NH<sub>4</sub>) . . . . . max. 0,001 %  
 calcium (Ca) . . . . . max. 0,001 %  
 copper (Cu) . . . . . max. 0,0001 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0003 %  
 lead (Pb) . . . . . max. 0,0001 %  
 magnesium (Mg) . . . . . max. 0,002 %  
 sodium (Na) . . . . . max. 0,005 %

Art. No.	Volume	Container
P002870500	500 g	P
P002871000	1 kg	P
P00287005P	5 kg	P

# Potass

## Potassium nitrite

### P00290 Potassium nitrite, crystallized, reagent grade, ACS



- Synonyms: Nitrous acid potassium salt
- KNO<sub>2</sub>
- M = 85,11 g/mol
- CAS [7758-09-0]
- EINECS-No.: 231-832-4
- Solub. in water: (20 °C): soluble
- Melting point: 440 °C
- EC-Index-No.: 007-011-00-X
- ADR: 5.1 O2 II UN 1488
- IMDG: 5.1 II UN 1488
- IATA/ICAO: 5.1 II UN 1488
- GHS-signal word: Danger

- GHS-H sentences: H272 - H301 - H400
- GHS-P sentences: P221 - P210 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2834 10 00 00
- Applications: analytical chemistry, laboratory reagent, in food industry, preservative agent (E-249), for de-termination of: aminoacids, cobalt, iodine, urea.

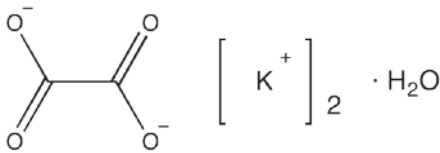
chlorides (Cl) . . . . .max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
 calcium (Ca) . . . . .max. 0,003 %  
 copper (Cu) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0005 %  
 sodium (Na) . . . . .max. 0,25 %

#### Specifications:

assay (permanganometric) . . . . .min. 97 %  
 insoluble in water . . . . .max. 0,01 %  
 pH (5 %, H<sub>2</sub>O) . . . . .7,0 - 10,0

Art. No.	Volume	Container
P002900250	250 g	
P002900500	500 g	

## di-Potassium oxalate monohydrate



- Synonyms: Oxalic acid dipotassium salt monohydrate
- K<sub>2</sub>C<sub>2</sub>O<sub>4</sub>·H<sub>2</sub>O
- M = 184,24 g/mol
- CAS [6487-48-5]
- EINECS-No.: 209-506-8
- Solub. in water: (20 °C): 360 g/l
- EC-Index-No.: 607-007-00-3
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811

- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312
- GHS-P sentences: P280 - P322 - P301 + P312 - P312 - P363 - P501a
- Tariff number: 2917 11 00 99
- Applications: analytical chemistry, for determination of: manganese.
- Appearance: Colourless solid

### P00309 di-Potassium oxalate monohydrate, extra pure



assay (permanganometric) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,025 %  
 pH (5 %, H<sub>2</sub>O) . . . . .7 - 8,5  
 chlorides (Cl) . . . . .max. 0,002 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,02 %  
 ammonium (NH<sub>4</sub>) . . . . .max. 0,005 %

copper (Cu) . . . . .max. 0,003 %  
 heavy metals (as Pb) . . . . .max. 0,002 %  
 iron (Fe) . . . . .max. 0,001 %  
 lead (Pb) . . . . .max. 0,002 %  
 nickel (Ni) . . . . .max. 0,003 %

Art. No.	Volume	Container
P003090500	500 g	
P003091000	1 kg	
P00309005P	5 kg	

### P00310 di-Potassium oxalate monohydrate, reagent grade, ACS



assay (permanganometric) . . . . .99,5 - 101 %  
 insoluble in water . . . . .max. 0,01 %  
 pH (5 %, H<sub>2</sub>O) . . . . .7 - 8,5  
 acidity . . . . .passes test  
 alkalinity . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %

total nitrogen (as N) . . . . .max. 0,001 %  
 ammonium (NH<sub>4</sub>) . . . . .max. 0,002 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,0005 %  
 sodium (Na) . . . . .max. 0,02 %  
 substances darkened by hot H<sub>2</sub>SO<sub>4</sub> . . . . .passes test

Art. No.	Volume	Container
P003100500	500 g	
P003101000	1 kg	
P00310005P	5 kg	
P00310025P	25 kg	

## Potassium perchlorate

- Synonyms: Peroidin, Perchloracap
- KClO<sub>4</sub>
- M = 138,55 g/mol
- CAS [7778-74-7]
- EINECS-No.: 231-912-9
- Solub. in water: (20 °C): 17 g/l
- Melting point: 610 °C

- EC-Index-No.: 017-008-00-5
- ADR: 5.1 O2 II UN 1489
- IMDG: 5.1 II UN 1489
- IATA/ICAO: 5.1 II UN 1489
- GHS-signal word: Danger
- GHS-H sentences: H271 - H302

- GHS-P sentences: P221 - P283 - P210 - P306 + P360 - P371 + P380 + P375 - P501a
- Tariff number: 2829 90 10 00
- Applications: analytical chemistry, laboratory reagent, in explosive compositions, in pyrotechnics, photography.

### P00319 Potassium perchlorate, extra pure, Pharmapur®, Ph Eur



assay (argentometric, on dried sample) . . . . .99 - 102 %  
 identification . . . . .passes test  
 appearance of solution . . . . .clear and colourless  
 insoluble in water . . . . .max. 0,005 %  
 acidity or alkalinity . . . . .passes test  
 chlorides and chlorates (as Cl) . . . . .max. 0,01 %

sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %  
 calcium (Ca) . . . . .max. 0,01 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P003190500	500 g	
P003191000	1 kg	
P00319005P	5 kg	

### P00320 Potassium perchlorate, reagent grade, ACS



assay (argentometric) . . . . .99,5 - 100,5 %  
 insoluble in water . . . . .max. 0,005 %  
 pH (1 %, H<sub>2</sub>O) . . . . .5,0 - 7,0  
 chlorides (Cl) . . . . .max. 0,003 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,001 %

total nitrogen (as N) . . . . .max. 0,0005 %  
 calcium (Ca) . . . . .max. 0,005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0005 %  
 sodium (Na) . . . . .max. 0,002 %

Art. No.	Volume	Container
P003200500	500 g	
P003201000	1 kg	

## Potassium metaperiodate

## P00340 Potassium metaperiodate, reagent grade, ACS

- Synonyms: Potassium tetroxiodate
- KIO<sub>4</sub>
- M = 230,00 g/mol
- CAS [7790-21-8]
- EINECS-No.: 232-196-0
- Solub. in water: (20 °C): 7 g/l
- Melting point: 581 °C
- ADR: 5.1 O2 II UN 1479
- IMDG: 5.1 II UN 1479
- IATA/ICAO: 5.1 II UN 1479
- GHS-signal word: Danger
- GHS-H sentences: H272

- GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a
- Tariff number: 2829 90 80 00
- Applications: synthesis of organic products, oxidizing agent, for colourimetric determinations (manganese).
- Appearance: White-fine crystalline powder

**Specifications:**

assay (iodometric, on dried sample) . . . . . 99,8 - 100,3 %  
 insoluble in water . . . . . max. 0,005 %  
 pH (0,5 %, H<sub>2</sub>O) . . . . . 5,0 - 5,4  
 other halogens (as Cl) . . . . . max. 0,01 %

iodides (I) . . . . . max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %  
 manganese (Mn) . . . . . max. 0,0001 %  
 sodium (Na) . . . . . max. 0,03 %  
 loss on drying (110 °C) . . . . . max. 0,05 %

Art. No.	Volume	Container
P003400100	100 g	Ⓟ
P003400250	250 g	Ⓟ

## Potassium permanganate

- Synonyms: Permanganic acid potassium salt
- KMnO<sub>4</sub>
- M = 158,04 g/mol
- CAS [7722-64-7]
- EINECS-No.: 231-760-3
- Solub. in water: (20 °C): 64 g/l
- Melting point: > 240 °C (decomposes)
- Vapour pressure: (20 °C) < 0,01 hPa

- LD 50 (oral, rat): 1090 mg/kg
- EC-Index-No.: 025-002-00-9
- ADR: 5.1 O2 II UN 1490
- IMDG: 5.1 II UN 1490
- IATA/ICAO: 5.1 II UN 1490
- GHS-signal word: Danger
- GHS-H sentences: H272 - H410 - H302

- GHS-P sentences: P221 - P210 - P220 - P280 - P301 + P312 - P501a
- Tariff number: 2841 61 00 00
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products, bleaching agent, photography, antiseptic.
- Appearance: Dark-brown black crystalline powder

## P00330 Potassium permanganate, extra pure, Pharpur®, Ph Eur, BP, USP

assay (iodometric) . . . . . 99 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . colourless  
 insoluble in water . . . . . max. 1 %  
 chlorides (Cl) . . . . . max. 0,02 %  
 loss on drying (silica gel) . . . . . max. 0,5 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,05 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P003300500	500 g	Ⓟ
P003301000	1 kg	Ⓟ
P00330005P	5 kg	Ⓟ
P00330025P	25 kg	Ⓟ

## P00331 Potassium permanganate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (permanganometric) . . . . . min. 99 %  
 identity . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . max. 0,2 %  
 chlorides (Cl) . . . . . max. 0,005 %  
 chlorides and chlorates (as Cl) . . . . . max. 0,005 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %  
 total nitrogen (as N) . . . . . max. 0,003 %  
 copper (Cu) . . . . . max. 0,001 %  
 heavy metals (as Pb) . . . . . max. 0,003 %  
 iron (Fe) . . . . . max. 0,002 %  
 lead (Pb) . . . . . max. 0,002 %  
 loss on drying . . . . . max. 0,2 %

Art. No.	Volume	Container
P003310500	500 g	Ⓟ
P003311000	1 kg	Ⓟ
P00331005P	5 kg	Ⓟ
P00331025P	25 kg	Ⓟ

## Potassium permanganate, volumetric solutions

## P00335 Potassium permanganate, solution 0,2 mol/l (1 N)

- KMnO<sub>4</sub>
- M = 158,04 g/mol
- CAS [7722-64-7]
- EINECS-No.: 231-760-3
- Density: 1,02 g/cm<sup>3</sup>
- EC-Index-No.: 025-002-00-9
- ADR: 9 M6 III UN 3082
- IMDG: 9 III UN 3082
- IATA/ICAO: 9 III UN 3082
- GHS-H sentences: H411

- GHS-P sentences: P273 - P391 - P501a
- Tariff number: 2841 61 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,0316 g KMnO<sub>4</sub>

This volumetric solution was checked by means of potentiometric methods using Scharlau's disodium oxalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P003351000	1 l	Ⓟ

## P00336 Potassium permanganate, solution 0,02 mol/l (0,1 N)

- KMnO<sub>4</sub>
- M = 158,04 g/mol
- CAS [7722-64-7]
- EINECS-No.: 231-760-3
- Density: 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 025-002-00-9
- GHS-H sentences: H412
- GHS-P sentences: P273 - P501a
- Tariff number: 2841 61 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,00316 g KMnO<sub>4</sub>

This volumetric solution was checked by means of potentiometric methods using Scharlau's disodium oxalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P003360100	100 ml	Ⓟ
P003361000	1 l	Ⓟ
P003362500	2,5 l	Ⓟ

## P00333 Potassium permanganate, concentrated solution to prepare 1 l of solution 0,02 mol/l (0,1 N)

- KMnO<sub>4</sub>
- M = 158,04 g/mol
- CAS [7722-64-7]
- EINECS-No.: 231-760-3
- Density: 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 9 M6 III UN 3082

- IMDG: 9 III UN 3082
- IATA/ICAO: 9 III UN 3082
- GHS-H sentences: H411
- GHS-P sentences: P273 - P391 - P501a
- Tariff number: 2841 61 00 00
- Applications: analytical chemistry, laboratory reagent.

**Specifications:**

amount of substance: 3,160 g KMnO<sub>4</sub>  
 concentrated solution . . . . . 0,2 mol/l ± 0,1 %

Art. No.	Volume	Container
P0033300GA	u.	Ⓟ

# Potass

## Potassium peroxodisulfate

### P00350 Potassium peroxodisulfate, extra pure, Reag. Ph Eur



- Synonyms: Potassium persulfate, Peroxydisulfuric acid dipotassium salt
- $K_2S_2O_8$
- $M = 270,33 \text{ g/mol}$
- CAS [7727-21-1]
- EINECS-No.: 231-781-8
- Solub. in water: (20 °C): 47 g/l
- Melting point: 100 °C (decomposes)
- LD 50 (oral, rat): 802 mg/kg
- ADR: 5.1 O2 III UN 1492
- IMDG: 5.1 III UN 1492
- IATA/ICAO: 5.1 III UN 1492
- GHS-signal word: Danger

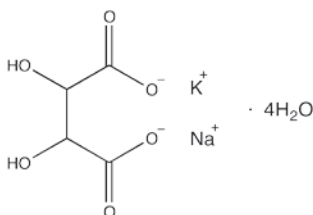
- GHS-H sentences: H334 - H272 - H302 - H335 - H315 - H319 - H317
- GHS-P sentences: P221 - P210 - P285 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2833 40 00 10
- Applications: analytical chemistry, laboratory reagent, cosmetics, photography.
- Appearance: White crystalline powder

copper (Cu) . . . . .max. 0,005 %  
 heavy metals (as Pb) . . . . .max. 0,005 %  
 iron (Fe) . . . . .max. 0,002 %  
 lead (Pb) . . . . .max. 0,005 %  
 manganese (Mn) . . . . .max. 0,0005 %  
 nickel (Ni) . . . . .max. 0,005 %

Art. No.	Volume	Container
P003500500	500 g	Ⓒ
P003501000	1 kg	Ⓒ
P00350005P	5 kg	Ⓖ

- Specifications:**  
 assay (iodometric) . . . . .min. 98 %  
 insoluble in water . . . . .max. 0,02 %  
 chlorides (Cl) . . . . .max. 0,005 %

## Potassium sodium tartrate tetrahydrate



- Synonyms: Sodium potassium tartrate, Tartaric acid potassium sodium salt
- $C_4H_4KNaO_6 \cdot 4H_2O$
- $M = 282,23 \text{ g/mol}$
- CAS [6381-59-5]
- EINECS-No.: 205-698-2
- Solub. in water: (20 °C): 630 g/l
- Melting point: 70 - 80 °C
- Tariff number: 2918 13 00 00

- Applications: analytical chemistry, laboratory reagent, in food industry, in fertilizer compositions, in the electronic industry.

### P00353 Potassium sodium tartrate tetrahydrate, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (titration with  $HClO_4$ , on dried sample) . . . . .99 - 101 %  
 identification . . . . .passes test  
 appearance of solution . . . . .clear and colourless  
 acidity or alkalinity . . . . .passes test  
 specific rotation ( $[\alpha]_{20}^{20}/D$ , 50g/l,  $H_2O$ ) . . . . .+ 28 ° - + 30 °  
 chlorides (Cl) . . . . .max. 0,01 %  
 sulfates ( $SO_4$ ) . . . . .max. 0,005 %

ammonium ( $NH_4$ ) . . . . .max. 0,002 %  
 barium and oxalates . . . . .passes test  
 calcium (Ca) . . . . .max. 0,02 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 water (K.F) . . . . .21 - 27 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P003530500	500 g	Ⓒ
P003531000	1 kg	Ⓒ
P00353005P	5 kg	Ⓖ
P00353025P	25 kg	Ⓖ

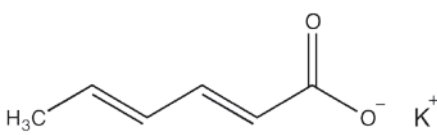
### P00355 Potassium sodium tartrate tetrahydrate, reagent grade, ACS, ISO

assay (titration with  $HClO_4$ ) . . . . .99 - 102 %  
 insoluble in water . . . . .max. 0,005 %  
 pH (5 %,  $H_2O$ ) . . . . .6,0 - 8,5  
 chlorides (Cl) . . . . .max. 0,0005 %  
 phosphates (as  $PO_4$ ) . . . . .max. 0,001 %  
 sulfates ( $SO_4$ ) . . . . .max. 0,005 %  
 total nitrogen (as N) . . . . .max. 0,001 %

ammonium ( $NH_4$ ) . . . . .max. 0,002 %  
 calcium (Ca) . . . . .max. 0,004 %  
 copper (Cu) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0005 %  
 lead (Pb) . . . . .max. 0,0005 %

Art. No.	Volume	Container
P003550250	250 g	Ⓒ
P003550500	500 g	Ⓒ
P003551000	1 kg	Ⓒ
P00355005P	5 kg	Ⓖ

## Potassium sorbate



- Synonyms: Sorbic acid potassium salt
- $C_6H_7KO_2$
- $M = 150,22 \text{ g/mol}$
- CAS [24634-61-5]
- EINECS-No.: 246-376-1
- Solub. in water: (20 °C): soluble
- Melting point: ~ 270 °C (decomposes)
- LD 50 (oral, rat): 3800 mg/kg
- GHS-signal word: Warning

- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2916 19 95 90
- Applications: in food industry (E202), mold and yeast inhibitor, in pharma industry.

### P00360 Potassium sorbate, extra pure, Pharmpur®, Ph Eur, BP, NF



assay (acidimetric, on dried sample) . . . . .98 - 101 %  
 identity (IR-spectrum) . . . . .passes test  
 appearance of solution . . . . .passes test  
 acidity or alkalinity . . . . .passes test  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 aldehydes (as  $CH_3CHO$ ) . . . . .max. 0,15 %

loss on drying (105 °C) . . . . .max. 1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
P003600500	500 g	Ⓒ
P003601000	1 kg	Ⓒ
P00360005P	5 kg	Ⓖ
P00360025P	25 kg	Ⓖ

### P00361 Potassium sorbate, powder, Pharmpur®, Ph Eur, NF, GMP, suitable for use as excipient



assay (acidimetric, on dried sample) . . . . .99 - 101 %  
 identification . . . . .passes test  
 appearance of solution . . . . .clear and colourless  
 acidity or alkalinity . . . . .passes test  
 aldehydes (as  $CH_3CHO$ ) . . . . .max. 0,15 %  
 heavy metals (as Pb) . . . . .max. 0,001 %

loss on drying (105 °C, 3 h) . . . . .max. 1,0 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
 Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
P003611000	1 kg	Ⓒ
P00361025P	25 kg	Ⓖ

## Potassium sulfate

- Synonyms: Sulfuric acid potassium salt
- $K_2SO_4$
- $M = 174,27$  g/mol
- CAS [7778-80-5]
- EINECS-No.: 231-915-5
- Solub. in water: (20 °C): 110 g/l
- Melting point: 1069 °C
- Boiling point: 1689 °C
- LD 50 (oral, rat): 6600 mg/kg
- Tariff number: 3104 30 00 00
- Applications: analytical chemistry, laboratory reagent, for determination of: nitrogen (Kjeldahl), in fertilizer compositions, manufacture of glass.

### P00363 Potassium sulfate, extra pure, Pharmpur®, Ph Eur, BP

assay (acidimetric, on dried sample) . . . . .	98,5 - 101 %	heavy metals (as Pb) . . . . .	max. 0,002 %
identification . . . . .	passes test	iron (Fe) . . . . .	max. 0,001 %
appearance of solution . . . . .	clear and colourless	magnesium (Mg) . . . . .	max. 0,002 %
acidity or alkalinity . . . . .	passes test	sodium (Na) . . . . .	max. 0,1 %
chlorides (Cl) . . . . .	max. 0,004 %	loss on drying (130 °C) . . . . .	max. 1 %
calcium (Ca) . . . . .	max. 0,02 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
P003630500	500 g	
P003631000	1 kg	
P00363005P	5 kg	
P00363025P	25 kg	

### P00366 Potassium sulfate, crystallized, Pharmpur®, Ph Eur, GMP, suitable for use as excipient

assay (acidimetric, on dried sample) . . . . .	98,5 - 101 %	iron (Fe) . . . . .	max. 0,001 %
identification . . . . .	passes test	magnesium (Mg) . . . . .	max. 0,002 %
appearance of solution . . . . .	clear and colourless	sodium (Na) . . . . .	max. 0,1 %
acidity or alkalinity . . . . .	passes test	loss on drying (130 °C, 4 h) . . . . .	max. 1 %
chlorides (Cl) . . . . .	max. 0,004 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95. Suitable for use as excipient according to requirements of GMP.	
calcium (Ca) . . . . .	max. 0,02 %		
heavy metals (as Pb) . . . . .	max. 0,002 %		

Art. No.	Volume	Container
P003661000	1 kg	
P00366025P	25 kg	

### P00365 Potassium sulfate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (acidimetric) . . . . .	min. 99 %	calcium (Ca) . . . . .	max. 0,005 %
insoluble in water . . . . .	max. 0,01 %	copper (Cu) . . . . .	max. 0,0005 %
pH (5 %, H <sub>2</sub> O) . . . . .	5,5 - 8,5	heavy metals (as Pb) . . . . .	max. 0,0005 %
chlorides (Cl) . . . . .	max. 0,0005 %	iron (Fe) . . . . .	max. 0,0005 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,001 %	lead (Pb) . . . . .	max. 0,0005 %
total nitrogen (as N) . . . . .	max. 0,0005 %	magnesium (Mg) . . . . .	max. 0,002 %
arsenic (As) . . . . .	max. 0,0002 %	sodium (Na) . . . . .	max. 0,02 %

Art. No.	Volume	Container
P003650250	250 g	
P003650500	500 g	
P003651000	1 kg	
P00365005P	5 kg	

## Potassium tellurite hydrate

### P00380 Potassium tellurite hydrate, for bacteriology

- $K_2TeO_3 \cdot xH_2O$
- $M = 253,79$  g/mol
- CAS [123333-66-4]
- EINECS-No.: 232-213-1
- Solub. in water: (20 °C): soluble
- Melting point: 460 - 470 °C (decomposes)
- ADR: 6.1 T5 II UN 3284
- IMDG: 6.1 II UN 3284
- IATA/ICAO: 6.1 II UN 3284
- GHS-signal word: Danger
- GHS-H sentences: H301 - H315 - H319
- GHS-P sentences: P280 - P301 + P310 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2842 90 10 00
- Applications: for microbiology, for the detection of: bacteria.
- Appearance: Off-white powder

**Specifications:**  
suitability for bacteriology . . . . . passes test

Art. No.	Volume	Container
P003800025	25 g	
P003800250	250 g	
P003801000	1 kg	

## Potassium thiocyanate

- Synonyms: Potassium sulfocyanate, Potassium rhodanide, Potassium sulfocyanide
- KSCN
- $M = 97,18$  g/mol
- CAS [333-20-0]
- EINECS-No.: 206-370-1
- Solub. in water: (20 °C): soluble
- Melting point: 175 °C
- Boiling point: 500 °C (decomposes)
- LD 50 (oral, rat): 854 mg/kg
- EC-Index-No.: 615-004-00-3
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332 - H412 - EUH032
- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a
- Tariff number: 2842 90 80 80
- Applications: in the textile industry, photography, analytical chemistry.

### P00369 Potassium thiocyanate, extra pure

assay (argentometric) . . . . .	min. 98 %	copper (Cu) . . . . .	max. 0,002 %
insoluble in water . . . . .	max. 0,02 %	iron (Fe) . . . . .	max. 0,002 %
pH (5 %, H <sub>2</sub> O) . . . . .	5,0 - 8,7	lead (Pb) . . . . .	max. 0,002 %
chlorides (Cl) . . . . .	max. 0,05 %	nickel (Ni) . . . . .	max. 0,002 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,1 %		
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,01 %		

Art. No.	Volume	Container
P003690500	500 g	
P003691000	1 kg	
P00369005P	5 kg	
P00369025P	25 kg	

### P00370 Potassium thiocyanate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (argentometric) . . . . .	min. 99 %	ammonium (NH <sub>4</sub> ) . . . . .	max. 0,002 %
insoluble in water . . . . .	max. 0,003 %	copper (Cu) . . . . .	max. 0,0002 %
pH (5 %, H <sub>2</sub> O) . . . . .	5,3 - 8,7	heavy metals (as Pb) . . . . .	max. 0,0005 %
chlorides (Cl) . . . . .	max. 0,005 %	iron (Fe) . . . . .	max. 0,0001 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,002 %	lead (Pb) . . . . .	max. 0,0002 %
matter consuming I (as I) . . . . .	passes test	sodium (Na) . . . . .	max. 0,005 %
sulfides (S) . . . . .	max. 0,001 %		

Art. No.	Volume	Container
P003700500	500 g	
P003701000	1 kg	
P00370005P	5 kg	
P00370025P	25 kg	

# Potass

## Potassium thiocyanate, solution 5%

### P00372 Potassium thiocyanate, solution 5% w/v

- Synonyms: Potassium sulfocyanate, Potassium rhodanide
  - KSCN
  - M = 97,18 g/mol
  - CAS [333-20-0]
  - EINECS-No.: 206-370-1
  - Density: 1,022 g/cm<sup>3</sup>
  - LD 50 (oral, rat): 854 mg/kg (pure substance)
  - EC-Index-No.: 615-004-00-3
  - GHS-H sentences: EUH210
  - Tariff number: 2842 90 80 80
  - Applications: analytical chemistry, for determination of: iron.
- Specifications:**  
 assay (argentometric) . . . . . approx. 5%

Art. No.	Volume	Container
P003720250	250 ml	Ⓒ
P003720500	500 ml	Ⓒ
P003721000	1 l	Ⓒ

## Potassium thiocyanate, volumetric solutions

### P00375 Potassium thiocyanate, solution 0,1 mol/l (0,1 N)

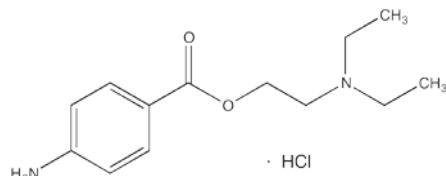
- KSCN
  - M = 97,18 g/mol
  - CAS [333-20-0]
  - EINECS-No.: 206-370-1
  - Density: 1,00 g/cm<sup>3</sup>
  - LD 50 (oral, rat): 854 mg/kg (pure substance)
  - EC-Index-No.: 615-004-00-3
  - Tariff number: 2842 90 80 80
  - Applications: analytical chemistry, for determination of: iron.
- Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,009718 g KSCN This volumetric solution was checked by means of potentiometric methods using a silver nitrate standard solution, that was also checked against Scharlau's potassium chloride volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
P003751000	1 l	Ⓒ

## Procaine hydrochloride

### PR0025 Procaine hydrochloride, extra pure, Pharmapur®, Ph Eur, BP, USP

- Synonyms: 2-Diethylamino-4-amino-benzoate hydrochloride
- C<sub>13</sub>H<sub>20</sub>N<sub>2</sub>O<sub>2</sub>·HCl
- M = 272,78 g/mol
- CAS [51-05-8]
- EINECS-No.: 200-077-2
- Solub. in water: (20 °C): soluble
- Melting point: 155 - 157 °C
- LD 50 (oral, rat): 200 mg/kg
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H301
- GHS-P sentences: P264 - P270 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2922 49 95 90
- Applications: in the pharmaceuticals industry, in pharma industry.



- Appearance: Colourless to white crystals

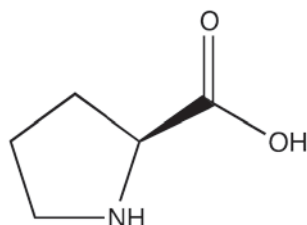
**Specifications:**  
 assay (acidimetric, on dried ample) . . . . . 99 - 101 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution (5%, H<sub>2</sub>O) . . . . . clear and colourless  
 melting range . . . . . 153 - 158 °C  
 acidity . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 related substances (TLC) . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 loss on drying (105 °C) . . . . . max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
PR00250100	100 g	Ⓒ

## L-Proline

### PR0055 L-Proline, extra pure, Pharmapur®, Ph Eur, BP, USP

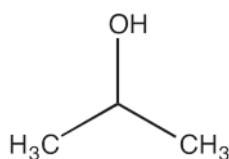
- Synonyms: 2-Pyrrolidine carboxylic acid
  - C<sub>5</sub>H<sub>9</sub>NO<sub>2</sub>
  - M = 115,13 g/mol
  - CAS [147-85-3]
  - EINECS-No.: 205-702-2
  - Solub. in water: (20 °C): 1500 g/l
  - Melting point: 220 - 222 °C
  - LD 50 (oral, rat): > 5110 mg/kg
  - Tariff number: 2933 99 90 90
  - Applications: in biochemistry, chromatography, synthesis of organic products, in pharma industry.
- Specifications:**  
 assay (titration with HClO<sub>4</sub>, on dried sample) . . . . . 98,5 - 101,5 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . clear and colourless



specific rotation ([α]<sub>D</sub><sup>20</sup>, c = 4, H<sub>2</sub>O) . . . . . - 84 ° - - 86 °  
 chlorides (Cl) . . . . . max. 0,05 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,03 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,0015 %  
 iron (Fe) . . . . . max. 0,003 %  
 ninhydrin-positive substances . . . . . max. 0,5 %  
 related substances . . . . . max. 2 %  
 residue on ignition . . . . . max. 0,4 %  
 loss on drying (105 °C) . . . . . max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
PR00550010	10 g	Ⓒ
PR00550100	100 g	Ⓒ

## 2-Propanol



- Synonyms: Isopropyl alcohol, Isopropanol, iso-Propanol, Dimethylcarbinol, 2-Hydroxypropane
- $C_3H_8O$
- $M = 60,10 \text{ g/mol}$
- CAS [67-63-0]
- EINECS-No.: 200-661-7
- Density:  $0,78 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Melting point:  $-89,5 \text{ °C}$
- Boiling point:  $82,4 \text{ °C}$
- Flash pt.  $12 \text{ °C}$
- Ignition temp.:  $425 \text{ °C}$
- Vapour pressure: (20 °C)  $43 \text{ hPa}$

- Dielectric const.: (25 °C)  $18,3$
- LD 50 (oral, rat):  $5045 \text{ mg/kg}$
- EC-Index-No.: 603-117-00-0
- ADR: 3 F1 II UN 1219
- IMDG: 3 II UN 1219
- IATA/ICAO: 3 II UN 1219
- GHS-signal word: Danger
- GHS-H sentences: H225 - H319 - H336
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2905 12 00 00
- Applications: solvents, in antifreeze compositions, cosmetics.

## AL0310 2-Propanol, synthesis grade



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,785 - 0,789  
 residue on evaporation . . . . . max. 0,005 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
AL03101000	1 l	
AL03102500	2,5 l	
AL0310005P	5 l	
AL0310025P	25 l	
AL0310025S	25 l	
AL0310200L	200 l	

## AL0311 2-Propanol, extra pure, Pharpur®, Ph Eur, BP, USP



assay (G.C.) . . . . . min. 99,5 %  
 identification . . . . . passes test  
 density (20°/20°) . . . . . 0,785 - 0,789  
 density (25°/25°) . . . . . 0,783 - 0,787  
 appearance . . . . . clear and colourless  
 refractive index  $n_{20/D}$  . . . . . 1,376 - 1,378  
 acidity or alkalinity . . . . . passes test  
 aldehydes and ketones (as  $C_2H_5CHO$ ) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,0002 %  
 iron (Fe) . . . . . max. 0,0001 %  
 benzene (G.C.) . . . . . max. 0,0002 %

methanol (G.C.) . . . . . max. 0,1 %  
 peroxides . . . . . passes test  
 related substances . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,2 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95. max. absorbance in a 1,0 cm cell at wavelength: A (AU)  
 230 nm. . . . . 0,30 AU  
 250 nm. . . . . 0,10 AU  
 270 nm. . . . . 0,03 AU  
 290 nm. . . . . 0,02 AU

310 nm. . . . . 0,01 AU

Art. No.	Volume	Container
AL03111000	1 l	
AL03112500	2,5 l	
AL0311005P	5 l	
AL0311025A	25 l	
AL0311025P	25 l	
AL0311025S	25 l	
AL0311200L	200 l	

## AL0312 2-Propanol, reagent grade, ACS, ISO, Reag. Ph Eur



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance . . . . . clear  
 density (20°/4°) . . . . . 0,784 - 0,786  
 density (20°/20°) . . . . . 0,785 - 0,789  
 boiling point . . . . . 81 - 83 °C  
 colour (Hazen) . . . . . max. 10  
 solubility in water . . . . . passes test  
 acidity . . . . . max. 0,0001 meq/g  
 alkalinity . . . . . max. 0,0001 meq/g  
 chlorides (Cl) . . . . . max. 0,00003 %  
 nitrates ( $NO_3$ ) . . . . . max. 0,00003 %  
 phosphates (as  $PO_4$ ) . . . . . max. 0,00005 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 antimony (Sb) . . . . . max. 0,000002 %  
 arsenic (As) . . . . . max. 0,000002 %  
 barium (Ba) . . . . . max. 0,00001 %  
 beryllium (Be) . . . . . max. 0,000002 %  
 bismuth (Bi) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %

chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 gallium (Ga) . . . . . max. 0,000002 %  
 gold (Au) . . . . . max. 0,000002 %  
 indium (In) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 lithium (Li) . . . . . max. 0,000005 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 molybdenum (Mo) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 platinum (Pt) . . . . . max. 0,000002 %  
 silver (Ag) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 thallium (Tl) . . . . . max. 0,000002 %  
 titanium (Ti) . . . . . max. 0,000002 %  
 vanadium (V) . . . . . max. 0,000002 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 zirconium (Zr) . . . . . max. 0,000002 %  
 acetone (G.C.) . . . . . max. 0,002 %  
 ethanol (G.C.) . . . . . max. 0,01 %

isopropylether (G.C.) . . . . . max. 0,01 %  
 methanol (G.C.) . . . . . max. 0,01 %  
 n-propanol (G.C.) . . . . . max. 0,1 %  
 propionaldehyde . . . . . max. 0,002 %  
 substances reducing  $KMnO_4$  . . . . . passes test  
 substances darkened by  $H_2SO_4$  . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
AL03121000	1 l	
AL03122500	2,5 l	
AL0312005P	5 l	
AL0312007E	7 l	
AL0312010C	10 l	
AL0312025P	25 l	
AL0312025S	25 l	
AL0312030S	30 l	
AL0312200L	200 l	

# Propan

## AL0316 2-Propanol, dried (max. 0,01% H<sub>2</sub>O), reagent grade, ACS, ISO



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,784 - 0,786  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 solubility in water . . . . . passes test  
 acidity . . . . . max. 0,0001 meq/g  
 alkalinity . . . . . max. 0,0001 meq/g  
 chlorides (Cl) . . . . . max. 0,00003 %  
 nitrates (NO<sub>3</sub>) . . . . . max. 0,00003 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 antimony (Sb) . . . . . max. 0,00002 %  
 arsenic (As) . . . . . max. 0,00002 %  
 barium (Ba) . . . . . max. 0,00001 %  
 beryllium (Be) . . . . . max. 0,00002 %  
 bismuth (Bi) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,00002 %

cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,00002 %  
 cobalt (Co) . . . . . max. 0,00002 %  
 copper (Cu) . . . . . max. 0,00002 %  
 gallium (Ga) . . . . . max. 0,00002 %  
 gold (Au) . . . . . max. 0,00002 %  
 indium (In) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 lithium (Li) . . . . . max. 0,00005 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,00002 %  
 molybdenum (Mo) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 platinum (Pt) . . . . . max. 0,00002 %  
 silver (Ag) . . . . . max. 0,00002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 thallium (Tl) . . . . . max. 0,00002 %

titanium (Ti) . . . . . max. 0,00002 %  
 vanadium (V) . . . . . max. 0,00002 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 zirconium (Zr) . . . . . max. 0,00002 %  
 acetone (G.C.) . . . . . max. 0,002 %  
 ethanol (G.C.) . . . . . max. 0,01 %  
 isopropylether (G.C.) . . . . . max. 0,01 %  
 methanol (G.C.) . . . . . max. 0,01 %  
 n-propanol (G.C.) . . . . . max. 0,1 %  
 propionaldehyde . . . . . max. 0,002 %  
 substances reducing KMnO<sub>4</sub> . . . . . passes test  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,01 %

Art. No.	Volume	Container
AL03161000	1 l	0
AL03162500	2,5 l	0

## AL0321 2-Propanol, Multisolvant® HPLC grade ACS ISO UV-VIS



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,784 - 0,786  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 solubility in water . . . . . passes test  
 acidity . . . . . max. 0,0001 meq/g  
 alkalinity . . . . . max. 0,0001 meq/g  
 chlorides (Cl) . . . . . max. 0,00003 %  
 nitrates (NO<sub>3</sub>) . . . . . max. 0,00003 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00001 %  
 antimony (Sb) . . . . . max. 0,00002 %  
 arsenic (As) . . . . . max. 0,00002 %  
 barium (Ba) . . . . . max. 0,00001 %  
 beryllium (Be) . . . . . max. 0,00002 %  
 bismuth (Bi) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,00002 %  
 cadmium (Cd) . . . . . max. 0,00001 %  
 calcium (Ca) . . . . . max. 0,00001 %  
 chromium (Cr) . . . . . max. 0,00002 %  
 cobalt (Co) . . . . . max. 0,00002 %  
 copper (Cu) . . . . . max. 0,00002 %  
 gallium (Ga) . . . . . max. 0,00002 %

gold (Au) . . . . . max. 0,00002 %  
 indium (In) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00002 %  
 manganese (Mn) . . . . . max. 0,00002 %  
 molybdenum (Mo) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 platinum (Pt) . . . . . max. 0,00002 %  
 silver (Ag) . . . . . max. 0,00002 %  
 thallium (Tl) . . . . . max. 0,00002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 titanium (Ti) . . . . . max. 0,00002 %  
 vanadium (V) . . . . . max. 0,00002 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 zirconium (Zr) . . . . . max. 0,00002 %  
 acetone (G.C.) . . . . . max. 0,01 %  
 ethanol (G.C.) . . . . . max. 0,01 %  
 isopropylether (G.C.) . . . . . max. 0,01 %  
 methanol (G.C.) . . . . . max. 0,01 %  
 n-propanol (G.C.) . . . . . max. 0,1 %  
 carbonyl compounds (as CO) . . . . . max. 0,002 %  
 substances reducing KMnO<sub>4</sub> . . . . . passes test  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0002 %

water (K.F.) . . . . . max. 0,05 %  
 liquid chromatography suitability  
 absorbance . . . . . passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 207 nm . . . . . 10 % 1,000 AU  
 217 nm . . . . . 50 % 0,301 AU  
 232 nm . . . . . 80 % 0,097 AU  
 242 nm . . . . . 90 % 0,046 AU  
 260 nm . . . . . 98 % 0,009 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
AL03211000	1 l	0
AL03212500	2,5 l	0
AL03214000	4 l	0
AL0321007E	7 l	0
AL0321025S	25 l	0
AL0321030S	30 l	0
AL0321185E	185 l	0

## AL0315 2-Propanol, gradient HPLC grade



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,784 - 0,786  
 acidity . . . . . max. 0,0001 meq/g  
 alkalinity . . . . . max. 0,0001 meq/g  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,05 %

gradient grade (240 nm) maximum background absor-  
 bance: 0,025 AU; maximum peak absorbance: 0,002  
 AU; min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 210 nm . . . . . 20 % 0,699 AU  
 215 nm . . . . . 50 % 0,301 AU  
 240 nm . . . . . 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Suitable for UPLC.

Art. No.	Volume	Container
AL03151000	1 l	0
AL03152500	2,5 l	0
AL03154000	4 l	0
AL0315007E	7 l	0

## AL0326 2-Propanol, LC-MS



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,784 - 0,786  
 acidity . . . . . max. 0,0001 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 cadmium (Cd) . . . . . max. 0,00005 %  
 calcium (Ca) . . . . . max. 0,00001 %  
 chromium (Cr) . . . . . max. 0,00002 %  
 cobalt (Co) . . . . . max. 0,00002 %  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %

magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 potassium (K) . . . . . max. 0,00001 %  
 silver (Ag) . . . . . max. 0,00001 %  
 sodium (Na) . . . . . max. 0,00001 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,05 %  
 suitability for use in LC-MS . . . . . passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at

wavelength: T(%) A (AU)  
 210 nm . . . . . 20 % 0,699 AU  
 215 nm . . . . . 50 % 0,301 AU  
 240 nm . . . . . 90 % 0,046 AU  
 gradient grade (254 nm) maximum peak absorbance:-  
 max. 0,005 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
AL03261000	1 l	0
AL03262500	2,5 l	0



## AL0319 2-Propanol, for GC residue analysis



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,784 - 0,786  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,05 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 3 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl. Suitable for highly volatile halogenated hydrocarbons trace analysis. ECD, from dichloromethane to 1,2,4-trichlorobenzene, no peaks are obtained greater than 1 ng/ml as tetrachloromethane.

Suitable for pesticide and polycyclic aromatic hydrocarbons residue analysis. FID, from 1-octanol to 1-tetradecanol, no peaks are obtained greater than 5 ng/ml as 1-tetradecanol. No peaks are obtained in vicinity of pyrene.

Art. No.	Volume	Container
AL03191000	1 l	0
AL03192500	2,5 l	0

## AL0317 2-Propanol, 99,8%, anhydrous (max. 0,005% H<sub>2</sub>O)



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,784 - 0,786  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 solubility in water . . . . . passes test  
 acidity . . . . . max. 0,0001 meq/g  
 alkalinity . . . . . max. 0,0001 meq/g  
 chlorides (Cl) . . . . . max. 0,00003 %  
 nitrates (NO<sub>3</sub>) . . . . . max. 0,00003 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 antimony (Sb) . . . . . max. 0,000002 %  
 arsenic (As) . . . . . max. 0,000002 %  
 barium (Ba) . . . . . max. 0,00001 %  
 beryllium (Be) . . . . . max. 0,000002 %  
 bismuth (Bi) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 gallium (Ga) . . . . . max. 0,000002 %  
 gold (Au) . . . . . max. 0,00002 %  
 indium (In) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,0001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 lithium (Li) . . . . . max. 0,000005 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 molybdenum (Mo) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 platinum (Pt) . . . . . max. 0,000002 %  
 silver (Ag) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 thallium (Tl) . . . . . max. 0,000002 %  
 titanium (Ti) . . . . . max. 0,000002 %  
 vanadium (V) . . . . . max. 0,000002 %

zinc (Zn) . . . . . max. 0,00001 %  
 zirconium (Zr) . . . . . max. 0,000002 %  
 acetone (G.C.) . . . . . max. 0,01 %  
 ethanol (G.C.) . . . . . max. 0,01 %  
 isopropylether (G.C.) . . . . . max. 0,01 %  
 methanol (G.C.) . . . . . max. 0,1 %  
 n-propanol (G.C.) . . . . . max. 0,1 %  
 propionaldehyde . . . . . max. 0,002 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,0003 %  
 substances reducing KMnO<sub>4</sub> . . . . . passes test  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
AL03170500	500 ml	0
AL03171000	1 l	0

## AL0324 2-Propanol, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O), with molecular sieves



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 0,785 - 0,789  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g

heavy metals (as Pb) . . . . . max. 0,0002 %  
 iron (Fe) . . . . . max. 0,0001 %  
 aldehydes and ketones (as C<sub>2</sub>,5CHO) . . . . . max. 0,02 %  
 methanol (G.C.) . . . . . max. 0,1 %

peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,0003 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
AL03241000	1 l	0

## AL0322 2-Propanol, VLSI grade



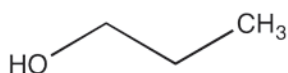
assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,784 - 0,786  
 solubility in water . . . . . passes test  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0001 meq/g  
 chlorides (Cl) . . . . . max. 0,00002 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,00005 %  
 aluminium (Al) . . . . . max. 0,00001 %  
 arsenic and antimony (as As) . . . . . max. 0,000001 %  
 boron (B) . . . . . max. 0,000001 %

calcium (Ca) . . . . . max. 0,00001 %  
 chromium (Cr) . . . . . max. 0,00001 %  
 copper (Cu) . . . . . max. 0,00001 %  
 gold (Au) . . . . . max. 0,00001 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,00001 %  
 nickel (Ni) . . . . . max. 0,00001 %  
 potassium (K) . . . . . max. 0,00001 %  
 sodium (Na) . . . . . max. 0,00001 %

tin (Sn) . . . . . max. 0,00001 %  
 titanium (Ti) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
AL03221000	1 l	0
AL03222500	2,5 l	0

## 1-Propanol



- Synonyms: n-Propyl alcohol, Ethylcarbinol, 1-Hydroxypropane, n-Propanol
- C<sub>3</sub>H<sub>8</sub>O
- M = 60,10 g/mol
- CAS [71-23-8]
- EINECS-No.: 200-746-9
- Density: 0,80 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -127 °C
- Boiling point: 96,5 - 98 °C
- Flash pt. 15 °C
- Ignition temp.: 405 °C
- Vapour pressure: (20 °C) 19 hPa

- Dielectric const.: (25 °C) 20,1
- LD 50 (oral, rat): 1870 mg/kg
- EC-Index-No.: 603-003-00-0
- ADR: 3 F1 II UN 1274
- IMDG: 3 II UN 1274
- IATA/ICAO: 3 II UN 1274
- GHS-signal word: Danger
- GHS-H sentences: H225 - H318 - H336
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2905 12 00 00
- Applications: analytical chemistry, solvents.

## AL0436 1-Propanol, extra pure, Pharmpur®, Ph Eur



assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,803 - 0,805  
 appearance of solution . . . . . passes test  
 acidity . . . . . max. 0,001 meq/g  
 alkalinity . . . . . max. 0,001 meq/g  
 ethanol (G.C.) . . . . . max. 0,1 %  
 methanol (G.C.) . . . . . max. 0,1 %  
 2-propanol (G.C.) . . . . . max. 0,1 %

related substances . . . . . passes test  
 reducing substances . . . . . passes test  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 UV spectroscopy . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,2 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AL04361000	1 l	0
AL04362500	2,5 l	0
AL0436005P	5 l	0
AL0436025A	25 l	0
AL0436200L	200 l	0

# Propan

## AL0437 1-Propanol, reagent grade

assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,803 - 0,805  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 solubility in water . . . . . passes test  
 acidity . . . . . max. 0,0004 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,00002 %  
 cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %

chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 acetone (G.C.) . . . . . max. 0,01 %  
 ethanol (G.C.) . . . . . max. 0,01 %  
 methanol (G.C.) . . . . . max. 0,01 %

2-propanol (G.C.) . . . . . max. 0,05 %  
 aldehydes and ketones (as C<sub>2</sub>H<sub>5</sub>CHO) . . . . . max. 0,03 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
AL04371000	1 l	Ⓒ
AL04372500	2,5 l	Ⓒ
AL0437005P	5 l	Ⓒ

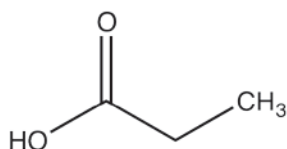
## AL0438 1-Propanol, HPLC grade

assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,803 - 0,805  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 residue on evaporation . . . . . max. 0,0002 %  
 water (K.F.) . . . . . max. 0,05 %

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 T(%) A (AU)  
 210 nm. . . . . 20 % 0,699 AU  
 220 nm. . . . . 50 % 0,301 AU  
 250 nm. . . . . 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
AL04381000	1 l	Ⓒ
AL04382500	2,5 l	Ⓒ

## Propionic acid



- Synonyms: Methyl acetic acid
- C<sub>3</sub>H<sub>6</sub>O<sub>2</sub>
- M = 74,08 g/mol
- CAS [79-09-4]
- EINECS-No.: 201-176-3
- Density: 0,99 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -22 °C
- Boiling point: 140 - 142 °C
- Flash pt. 49 °C
- Ignition temp.: 485 °C
- Vapour pressure: (20 °C) 2,9 hPa
- Refraction index: (n 20 °C/D) 1,386

- LD 50 (oral, rat): 2600 mg/kg
- EC-Index-No.: 607-089-00-0
- ADR: 8 CF1 II UN 3463
- IMDG: 8 II UN 3463
- IATA/ICAO: 8 II UN 3463
- GHS-signal word: Danger
- GHS-H sentences: H314 - H226
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 50 00 00
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products, for the synthesis of: esters, solvents, perfumery.

## AC1891 Propionic acid, extra pure

assay (acidimetric) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,993 - 0,994  
 chlorides (Cl) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,0005 %  
 residue on evaporation . . . . . max. 0,01 %

heavy metals (as Pb) . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
AC18911000	1 l	Ⓒ
AC18912500	2,5 l	Ⓒ
AC1891005P	5 l	Ⓒ
AC1891025P	25 l	Ⓒ

## AC1894 Propionic acid, reagent grade, ACS, Reag. Ph Eur

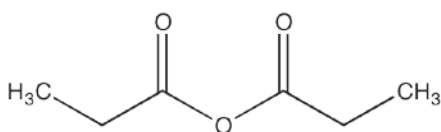
assay (acidimetric) . . . . . min. 99,7 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,993 - 0,994  
 density (20°/20°) . . . . . 0,994 - 0,996  
 refractive index n<sub>20</sub>/D . . . . . 1,386 - 1,388  
 colour (Hazen) . . . . . max. 20  
 boiling point . . . . . 140 - 142 °C  
 miscibility with water . . . . . passes test

chlorides (Cl) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 carbonyl compounds (as C<sub>2</sub>H<sub>5</sub>CHO) . . . . . max. 0,002 %  
 oxidizing substances (as HCOOH) . . . . . max. 0,10 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
AC18941000	1 l	Ⓒ
AC18942500	2,5 l	Ⓒ

## Propionic anhydride

### AN0300 Propionic anhydride, synthesis grade



- C<sub>6</sub>H<sub>10</sub>O<sub>3</sub>
- M = 130,14 g/mol
- CAS [123-62-6]
- EINECS-No.: 204-638-2
- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): hydrolysis reaction
- Melting point: -45 °C
- Boiling point: 167 °C
- Flash pt. 64 °C
- Ignition temp.: 285 °C
- Vapour pressure: (21 °C) 1,3 hPa
- Refraction index: (n 20 °C/D) 1,404
- LD 50 (oral, rat): 2360 mg/kg
- EC-Index-No.: 607-010-00-X
- ADR: 8 C3 III UN 2496
- IMDG: 8 III UN 2496
- IATA/ICAO: 8 III UN 2496
- GHS-signal word: Danger

- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2917 19 90 90
- Applications: synthesis of organic products, perfumery, manufacture of dyes, in the production of alkylid resins.

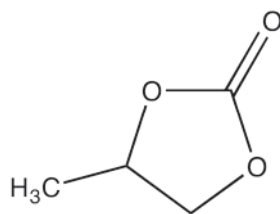
#### Specifications:

assay (G.C.) . . . . . min. 98 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,009 - 1,011  
 residue on evaporation . . . . . max. 0,005 %

Art. No.	Volume	Container
AN03000500	500 ml	Ⓒ
AN03001000	1 l	Ⓒ

## Propylene carbonate

## CA0370 Propylene carbonate, extra pure



- Synonyms: 4-Methyl-1,3-dioxolan-2-one
- $C_5H_8O_3$
- M = 102,09 g/mol
- CAS [108-32-7]
- EINECS-No.: 203-572-1
- Density: ---
- Solub. in water: (20 °C): 240 g/l
- Melting point: -49 °C
- Boiling point: 242 °C
- Flash pt. 123 °C
- Ignition temp.: 510 °C
- Vapour pressure: (20 °C) 0,03 hPa
- Dielectric const.: (25 °C) 6,51
- LD 50 (oral, rat): 34920 mg/kg
- EC-Index-No.: 607-194-00-1
- GHS-signal word: Warning
- GHS-H sentences: H319

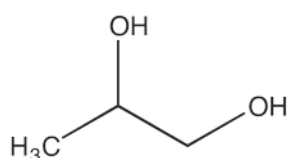
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2920 90 10 90
- Applications: analytical chemistry, solvents, chromatography, for organic trace analysis.

**Specifications:**

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,204 - 1,205  
 residue on ignition . . . . . max. 0,02 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
CA03701000	1 l	

## 1,2-Propylene glycol



- Synonyms: 1,2-Propanediol, 1,2-Dihydroxypropane
- $C_3H_8O_2$
- M = 76,10 g/mol
- CAS [57-55-6]
- EINECS-No.: 200-338-0
- Density: 1,04 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -59 °C
- Boiling point: 188 °C

- Ignition temp.: 371 °C
- Vapour pressure: (20 °C) 0,11 hPa
- Refraction index: (n 20 °C/D) 1,43
- LD 50 (oral, rat): 19400 - 36000 mg/kg
- Tariff number: 2905 32 00 00
- Applications: in antifreeze compositions, for pharmaceuticals synthesizing, emulsifier, manufacturing of synthetic resins.

## PR0085 1,2-Propylene glycol, extra pure, Pharpur®, Ph Eur, BP, USP

assay (G.C.) . . . . . min. 99,5 %  
 identification . . . . . passes test  
 density (20°/20°) . . . . . 1,035 - 1,040  
 appearance . . . . . clear and colourless  
 refractive index n<sub>20</sub>/D . . . . . 1,431 - 1,433  
 acidity . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,007 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,006 %

heavy metals (as Pb) . . . . . max. 0,0005 %  
 oxidizing substances . . . . . passes test  
 reducing substances . . . . . passes test  
 residue on ignition . . . . . max. 0,01 %  
 water (K.F.) . . . . . max. 0,2 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
PR00851000	1 l	
PR00852500	2,5 l	
PR0085005P	5 l	
PR0085025P	25 l	

## PR0088 1,2-Propylene glycol, reagent grade, Reag. Ph Eur

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,036 - 1,037  
 free acid (as CH<sub>3</sub>COOH) . . . . . max. 0,003 %  
 chlorides (Cl) . . . . . max. 0,0001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %

arsenic (As) . . . . . max. 0,00005 %  
 heavy metals (as Pb) . . . . . max. 0,00005 %  
 iron (Fe) . . . . . max. 0,00005 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,001 %  
 residue on ignition . . . . . max. 0,002 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
PR00881000	1 l	
PR00882500	2,5 l	
PR0088025P	25 l	

## Pumice stone

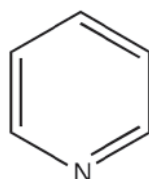
## PI0010 Pumice stone, granulated

- CAS [1332-09-8]
- Solub. in water: (20 °C): insoluble
- Tariff number: 2513 19 00 00
- Applications: abrasive, in the pharmaceuticals industry (Filter), cosmetics.

**Specifications:**  
 additive regulator of boiling

Art. No.	Volume	Container
PI00100500	500 g	
PI0010005P	5 kg	

## Pyridine



- $C_5H_5N$
- M = 79,10 g/mol
- CAS [110-86-1]
- EINECS-No.: 203-809-9
- Density: 0,98 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -42 °C
- Boiling point: 115 °C
- Flash pt. 17 °C
- Ignition temp.: 550 °C
- Vapour pressure: (20 °C) 20 hPa
- Refraction index: (n 20 °C/D) 1,5092
- Dielectric const.: (25 °C) 12,3

- LD 50 (oral, rat): 891 mg/kg
- EC-Index-No.: 613-002-00-7
- ADR: 3 F1 II UN 1282
- IMDG: 3 II UN 1282
- IATA/ICAO: 3 II UN 1282
- GHS-signal word: Danger
- GHS-H sentences: H225 - H302 - H312 - H332
- GHS-P sentences: P210 - P241 - P261 - P280 - P303 + P361 + P353 - P501a
- Tariff number: 2933 31 00 00
- Applications: solvents, synthesis of organic products, analytical chemistry.

# Pyridi

## PI0120 Pyridine, synthesis grade

assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,982 - 0,984  
 residue on evaporation . . . . .max. 0,01 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
PI01201000	1 l	
PI01202500	2,5 l	
PI0120005L	5 l	
PI0120025L	25 l	

## PI0121 Pyridine, extra pure

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,982 - 0,984  
 chlorides (Cl) . . . . .max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
 ammonia (NH<sub>3</sub>) . . . . .max. 0,005 %  
 copper (Cu) . . . . .max. 0,00002 %  
 iron (Fe) . . . . .max. 0,00005 %  
 lead (Pb) . . . . .max. 0,00002 %  
 nickel (Ni) . . . . .max. 0,00002 %  
 2-methylpyridine . . . . .max. 0,2 %  
 piperidine (G.C.) . . . . .max. 0,05 %  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,1 %

Art. No.	Volume	Container
PI01211000	1 l	
PI01212500	2,5 l	
PI0121005L	5 l	

## PI0123 Pyridine, reagent grade, ACS, Reag. Ph Eur

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,982 - 0,984  
 appearance . . . . .clear  
 solubility in water . . . . .passes test  
 colour (Hazen) . . . . .max. 10  
 boiling point . . . . .114 - 116 °C  
 chlorides (Cl) . . . . .max. 0,0005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,0005 %  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %

2-picoline (G.C.) . . . . .max. 0,2 %  
 piperidine (G.C.) . . . . .max. 0,01 %  
 ammonia (NH<sub>3</sub>) . . . . .max. 0,002 %  
 reducing substances . . . . .passes test  
 residue on evaporation . . . . .max. 0,0005 %  
 water (K.F.) . . . . .max. 0,05 %

Art. No.	Volume	Container
PI01231000	1 l	
PI01232500	2,5 l	

## PI0124 Pyridine, dried (max. 0,01% H<sub>2</sub>O), reagent grade

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,982 - 0,984  
 appearance . . . . .clear  
 solubility in water . . . . .passes test  
 colour (Hazen) . . . . .max. 10  
 chlorides (Cl) . . . . .max. 0,0005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,0005 %  
 ammonia (NH<sub>3</sub>) . . . . .max. 0,002 %  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %

tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 2-picoline (G.C.) . . . . .max. 0,2 %  
 piperidine (G.C.) . . . . .max. 0,01 %  
 reducing substances . . . . .passes test  
 residue on evaporation . . . . .max. 0,002 %  
 water (K.F.) . . . . .max. 0,01 %

Art. No.	Volume	Container
PI01241000	1 l	

## PI0125 Pyridine, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O)

assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,982 - 0,984  
 appearance . . . . .clear  
 colour (Hazen) . . . . .max. 10  
 solubility in water . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,0005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,0005 %  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 boron (B) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00005 %  
 chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 2-picoline (G.C.) . . . . .max. 0,2 %

piperidine (G.C.) . . . . .max. 0,01 %  
 ammonia (NH<sub>3</sub>) . . . . .max. 0,002 %  
 reducing substances . . . . .passes test  
 residue on evaporation . . . . .max. 0,001 %  
 water (K.F.) . . . . .max. 0,005 %

Art. No.	Volume	Container
PI01250100	100 ml	
PI01250500	500 ml	
PI01251000	1 l	

## PI0126 Pyridine, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O), with molecular sieves

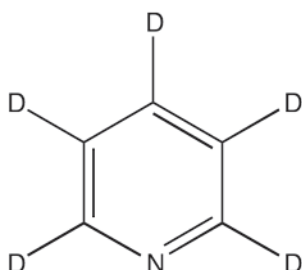
assay (G.C.) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .0,982 - 0,984  
 chlorides (Cl) . . . . .max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
 ammonia (NH<sub>3</sub>) . . . . .max. 0,005 %  
 copper (Cu) . . . . .max. 0,00002 %  
 iron (Fe) . . . . .max. 0,00005 %  
 lead (Pb) . . . . .max. 0,00002 %  
 nickel (Ni) . . . . .max. 0,00002 %

piperidine (G.C.) . . . . .max. 0,05 %  
 water (K.F.) . . . . .max. 0,005 %

Art. No.	Volume	Container
PI01261000	1 l	

## Pyridine-d5

PI0132 Pyridine-d5, deuteration degree min. 99,95%, NMR spectroscopy grade, Spectrosol®



- C<sub>5</sub>D<sub>5</sub>N
- M = 84,13 g/mol
- CAS [7291-22-7]
- EINECS-No.: 230-720-2
- Density: 1,05 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -41 °C
- Boiling point: 114 °C
- Flash pt. 17 °C
- Ignition temp.: ~ 480 °C
- Vapour pressure: (20 °C) 20 hPa
- LD 50 (oral, rat): 891 mg/kg (pyridine)
- ADR: 3 F1 II UN 1282
- IMDG: 3 II UN 1282
- IATA/ICAO: 3 II UN 1282
- GHS-signal word: Danger

- GHS-H sentences: H225 - H302 - H312 - H332
- GHS-P sentences: P210 - P241 - P261 - P280 - P303 + P361 + P353 - P501a
- Tariff number: 2845 90 10 00
- Applications: for nuclear magnetic resonance spectroscopy.

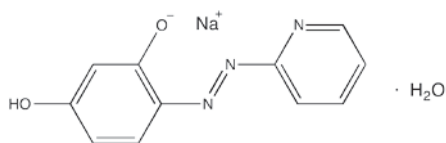
**Specifications:**

deuteration degree . . . . . min. 99,95 %  
 water (K.F., H<sub>2</sub>O + D<sub>2</sub>O) . . . . . max. 0,02 %  
 performance test (NMR-spectrum) . . . . . passes test

Art. No.	Volume	Container
PI01320010	10 ml	↓

## 4-(2-Pyridylazo)-resorcinol, monosodium salt monohydrate

PI0100 4-(2-Pyridylazo)-resorcinol, monosodium salt monohydrate, reagent grade, Reag. Ph Eur



- Synonyms: PAR
- C<sub>11</sub>H<sub>8</sub>N<sub>2</sub>NaO<sub>2</sub>·H<sub>2</sub>O
- M = 255,21 g/mol
- CAS [16593-81-0]
- EINECS-No.: 236-339-8
- Solub. in water: (20 °C): 38 g/l
- Tariff number: 2933 39 99 90
- Applications: analytical chemistry, indicator.

appearance of solution . . . . . passes test  
 water (K.F.) . . . . . 7,0 - 8,0 %  
 suitability as indicator for metal  
 titration . . . . . passes test

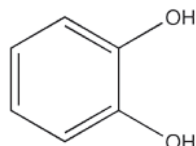
Art. No.	Volume	Container
PI01000001	1 g	0
PI01000005	5 g	0

**Specifications:**

assay (titr. with HClO<sub>4</sub>, referred on dried sample) . . . min. 99 %

## Pyrocatechol

PI0150 Pyrocatechol, synthesis grade



- Synonyms: 1,2-Dihydroxybenzene, Catechol
- C<sub>6</sub>H<sub>6</sub>O<sub>2</sub>
- M = 110,11 g/mol
- CAS [120-80-9]
- EINECS-No.: 204-427-5
- Solub. in water: (20 °C): 450 g/l
- Melting point: 103 - 105 °C
- Boiling point: 245 °C (decomposes)
- Flash pt. 127 °C
- Vapour pressure: (118 °C) 13 hPa
- LD 50 (oral, rat): 358 mg/kg
- EC-Index-No.: 604-016-00-4
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Warning

- GHS-H sentences: H302 - H312 - H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P322 - P362 - P501a
- Tariff number: 2907 29 00 90
- Applications: synthesis of organic products, laboratory reagent, photography, manufacture of dyes, antiseptic.

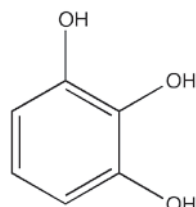
**Specifications:**

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test

Art. No.	Volume	Container
PI01500250	250 g	0
PI01501000	1 kg	0

## Pyrogallol

AC1850 Pyrogallol, synthesis grade



- Synonyms: 1,2,3-Trihydroxybenzene, Pyrogallic acid
- C<sub>6</sub>H<sub>3</sub>O<sub>3</sub>
- M = 126,11 g/mol
- CAS [87-66-1]
- EINECS-No.: 201-762-9
- Solub. in water: (20 °C): 400 g/l
- Melting point: 131 - 134 °C
- Boiling point: 309 °C
- Vapour pressure: (140 °C) 2 - 4 hPa
- LD 50 (oral, rat): 789 mg/kg
- EC-Index-No.: 604-009-00-6
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Warning
- GHS-H sentences: H341 - H302 - H312 - H332 - H412

- GHS-P sentences: P261 - P280 - P281 - P322 - P405 - P501a
- Tariff number: 2907 29 00 80
- Applications: synthesis of organic products, analytical chemistry, laboratory reagent (antimony and bismuth), photography, solvents (metals), manufacture of dyes.

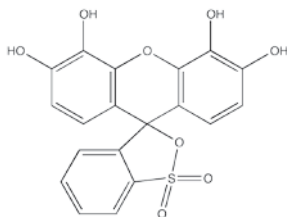
**Specifications:**

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 pH (5 %, H<sub>2</sub>O) . . . . . 4 - 5  
 residue on ignition . . . . . max. 0,02 %

Art. No.	Volume	Container
AC18500100	100 g	0
AC18500250	250 g	0

## Pyrogallol red

### R00165 Pyrogallol red, indicator for metal titration



- Synonyms: Pyrogallolsulfonphthalein, Pyrogallic acid
- $C_{19}H_{12}O_8S$
- $M = 400,36 \text{ g/mol}$
- CAS [32638-88-3]
- EINECS-No.: 251-134-3
- Solub. in water: (20 °C): soluble
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, indicator (metals).

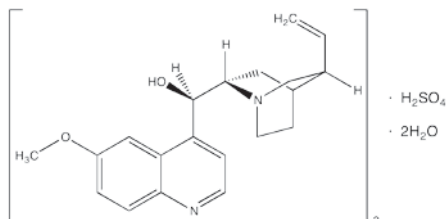
#### Specifications:

suitability as indicator for metal titration .....passes test  
loss on drying (110 °C) ..... max. 5 %

Art. No.	Volume	Container
R001650001	1 g	0
R001650100	100 g	0

## Quinine sulfate dihydrate

QU0095 Quinine sulfate dihydrate, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms: Quinamm, Quine, Quinate, Quinsam
- $(C_{20}H_{24}N_2O_2)_2 \cdot H_2SO_4 \cdot 2H_2O$
- M = 782,94 g/mol
- CAS [6119-70-6]
- EINECS-No.: 212-359-2
- Solub. in water: (20 °C): ~ 1,2 g/l
- Melting point: 233 - 235 °C
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332
- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a
- Tariff number: 2939 21 00 00
- Applications: in the pharmaceuticals industry, bactericide, antiseptic, in food industry, in pharma industry.

### Specifications:

assay (titration with  $HClO_4$ , on dried sample) . . . . . 99 - 101 %

identification . . . . . passes test  
 appearance of solution . . . . . passes test  
 pH (1 %,  $H_2O$ ) . . . . . 5,7 - 6,6  
 specific rotation ( $[\alpha]_{20}^{20}/D$ , c = 2 ,  $HCl$  0,1 M) . . . . . - 235 ° - - 245 °  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 chloroform-alcohol-insoluble substances . . max. 0,1 %  
 limit of dihydroquinine sulfate . . . . . max. 10 %  
 organic impurities . . . . . passes test  
 other cinchona alkaloids . . . . . passes test  
 residue on ignition . . . . . max. 0,1 %  
 loss on drying (105 °C) . . . . . 3 - 5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

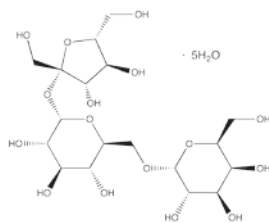
Art. No.	Volume	Container
QU00950025	25 g	0

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z

# Raffin

## D(+)-Raffinose pentahydrate

### RA0025 D (+)-Raffinose pentahydrate, for bacteriology



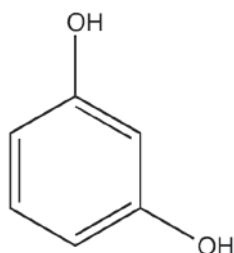
- Synonyms: Melitose
- $C_{18}H_{32}O_{16} \cdot 5H_2O$
- $M = 594,52 \text{ g/mol}$
- CAS [17629-30-0]
- EINECS-No.: 208-146-9
- Solub. in water: (20 °C): freely soluble
- Melting point: 80 °C
- Tariff number: 2940 00 00 10
- Applications: in biochemistry.

identity (IR-spectrum) . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^{\circ}/D, c = 10, H_2O$ )  
 referred to dried sample) . . . . . + 122,0 ° - + 124,0 °  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 reducing sugars (as glucose) . . . . . max. 0,3 %  
 water . . . . . 14 - 16 %

Art. No.	Volume	Container
RA00250025	25 g	0

**Specifications:**  
 assay (HPLC) . . . . . min. 97 %

## Resorcinol



- Synonyms: 1,3-Dihydroxybenzene
- $C_6H_6O_2$
- $M = 110,11 \text{ g/mol}$
- CAS [108-46-3]
- EINECS-No.: 203-585-2
- Solub. in water: (20 °C): soluble
- Melting point: 109 - 111 °C
- Boiling point: (20 hPa) 177 °C
- Flash pt. 127 °C
- Ignition temp.: 605 °C
- Vapour pressure: (20 °C) 0,1 hPa
- LD 50 (oral, rat): 301 mg/kg
- EC-Index-No.: 604-010-00-1

- ADR: 6.1 T2 III UN 2876
- IMDG: 6.1 III UN 2876
- IATA/ICAO: 6.1 III UN 2876
- GHS-signal word: Warning
- GHS-H sentences: H400 - H302 - H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2907 21 00 10
- Applications: analytical chemistry, laboratory reagent (zinc), synthesis of organic products, cosmetics, manufacture of adhesives, manufacture of dyes, in the textile industry.
- Appearance: White-light beige flakes

### RE0080 Resorcinol, extra pure, Pharpur®, Ph Eur, BP

assay (G.C., on dried sample) . . . . . 98,5 - 101 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . passes test  
 acidity or alkalinity . . . . . passes test  
 pyrocatechol . . . . . passes test

related substances . . . . . passes test  
 residue on ignition . . . . . max. 0,05 %  
 loss on drying (over silica gel) . . . . . max. 1 %  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.

Art. No.	Volume	Container
RE00800250	250 g	0

### RE0083 Resorcinol, reagent grade, Reag. Ph Eur

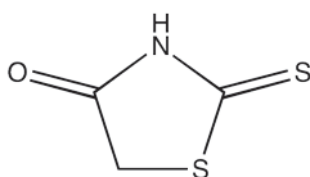
assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 free acid (as  $H_2SO_4$ ) . . . . . max. 0,005 %  
 free alkali (as  $NH_3$ ) . . . . . max. 0,002 %  
 chlorides (Cl) . . . . . max. 0,001 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,005 %

heavy metals (as Pb) . . . . . max. 0,0005 %  
 phenol (G.C.) . . . . . max. 0,01 %  
 pyrocatechol . . . . . max. 0,1 %  
 residue on ignition . . . . . max. 0,02 %  
 loss on drying (over silica gel) . . . . . max. 1 %

Art. No.	Volume	Container
RE00830100	100 g	0
RE00830250	250 g	0

## Rhodanine

### R00030 Rhodanine, synthesis grade



- Synonyms: 2-Thioxo-4-thiazolidinone, Rhodanic acid
- $C_5H_5NOS_2$
- $M = 133,19 \text{ g/mol}$
- CAS [141-84-4]
- EINECS-No.: 205-505-1
- Solub. in water: (20 °C): soluble
- Melting point: 166 - 168 °C
- LD 50 (oral, rat): 326 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a

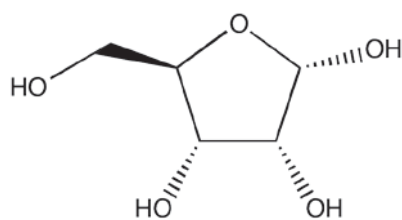
- Tariff number: 2934 10 00 90
- Applications: synthesis of organic products, laboratory reagent.

**Specifications:**  
 assay . . . . . min. 98 %  
 identity (IR-spectrum) . . . . . passes test

Art. No.	Volume	Container
R000300025	25 g	0

## D(-)-Ribose

### RI0025 D(-)-Ribose, extra pure



- Synonyms:  $\alpha$ -D-Ribofuranose
- $C_5H_{10}O_5$
- $M = 150,13 \text{ g/mol}$
- CAS [50-69-1]
- EINECS-No.: 200-059-4
- Solub. in water: (20 °C): soluble
- Melting point: ~ 90 - 95 °C
- Tariff number: 2940 00 00 80
- Applications: analytical chemistry, in biochemistry, in food industry, synthesis of organic products, nutrient media for bacterial culture.

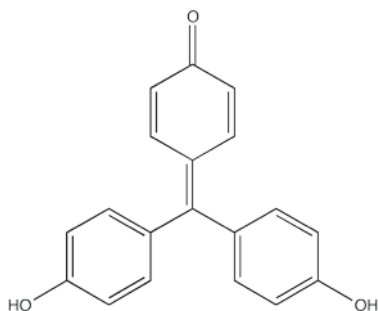
**Specifications:**  
 identity (IR-spectrum) . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^{\circ}/D, c = 2, H_2O$ ) . . . . . - 22,0 ° - - 18 °  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 related substances (TLC) . . . . . passes test  
 water (K.F.) . . . . . max. 0,5 %

Art. No.	Volume	Container
RI00250005	5 g	0
RI00250025	25 g	0
RI00250100	100 g	0



## Rosolic acid, C.I. 43800

AC1990 Rosolic acid, C.I. 43800, indicator, for microscopy



- Synonyms: Aurin, 4-[Bis(4-hydroxyphenyl)methylene]2,5-cyclohexadien-1-one
- $C_{19}H_{14}O_3$
- $M = 290,32 \text{ g/mol}$
- CAS [603-45-2]
- EINECS-No.: 210-041-8
- Solub. in water: (20 °C): 1,2 g/l
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3212 90 90 00
- Applications: microscopy, manufacture of dyes.

**Specifications:**

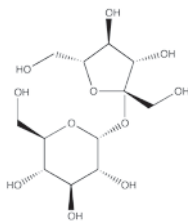
pH range (yellow-red) . . . . . 6,8 - 8,0

Absorption maximum  $\lambda$  (in ethanol + 2 ml HCl 1N) . . . . . 482 - 486 nm  
 Absorptivity (A1%/1 cm;  $\lambda$  max.) . . . . . > 1250  
 insoluble in  $C_2H_5OH$  . . . . . passes test  
 copper (Cu) . . . . . max. 0,005 %  
 iron (Fe) . . . . . max. 0,005 %  
 lead (Pb) . . . . . max. 0,005 %  
 nickel (Ni) . . . . . max. 0,005 %  
 residue on ignition (as  $SO_4$ ) . . . . . max. 0,5 %  
 loss on drying (135 °C) . . . . . max. 5 %

Art. No.	Volume	Container
AC19900010	10 g	0
AC19900025	25 g	0

# Saccha

## D(+)-Saccharose



- Synonyms: Cane sugar, Sucrose
- $C_{12}H_{22}O_{11}$
- $M = 342,30 \text{ g/mol}$
- CAS [57-50-1]
- EINECS-No.: 200-334-9
- Solub. in water: (20 °C): freely soluble
- Melting point: 169 - 170 °C
- LD 50 (oral, rat): 29700 mg/kg
- Tariff number: 1701 99 10 80

- Applications: analytical chemistry, for determination of proteins, in food industry, for pharmaceuticals synthesizing, synthesis of organic products, in biochemistry, nutrient media for bacterial culture.

### SA0020 D(+) - Saccharose, extra pure, Pharpur®, Ph Eur, BP, NF

identity (IR-spectrum) . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ ;  
 $c = 26, \text{H}_2\text{O}$ ) . . . . . + 66,3° - + 67,0°  
 appearance of solution (50 %,  $\text{H}_2\text{O}$ ) . . . . . passes test  
 colour (Hazen) . . . . . max. 45  
 conductivity (20°C) . . . . . max. 35  $\mu\text{S}\cdot\text{cm}^{-1}$   
 sulfites (as  $\text{SO}_2$ ) . . . . . max. 0,001 %  
 dextrans . . . . . passes test

glucose and invert sugar . . . . . passes test  
 reducing sugars . . . . . passes test  
 residue on ignition . . . . . max. 0,05 %  
 loss on drying (105 °C, 3 h) . . . . . max. 0,1 %  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.

Art. No.	Volume	Container
SA00200500	500 g	Ⓟ
SA00201000	1 kg	Ⓟ
SA0020005P	5 kg	Ⓟ
SA0020025P	25 kg	Ⓟ

### SA0022 D(+) - Saccharose, crystallized, Pharpur®, Ph Eur, NF, GMP, suitable for use as excipient

identification . . . . . passes test  
 appearance of solution (50 %,  $\text{H}_2\text{O}$ ) . . . . . clear  
 colour (Hazen) . . . . . max. 45  
 conductivity (20°C) . . . . . max. 35  $\mu\text{S}\cdot\text{cm}^{-1}$   
 specific rotation ( $[\alpha]_{20}^D$ ;  
 $c = 26, \text{H}_2\text{O}$ ) . . . . . + 66,3° - + 67,0°  
 dextrans . . . . . passes test  
 invert sugars . . . . . passes test  
 reducing sugars . . . . . passes test

chlorides (Cl) . . . . . max. 0,0035 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,006 %  
 sulfites (as  $\text{SO}_2$ ) . . . . . max. 0,001 %  
 calcium (Ca) . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 loss on drying (105 °C, 3 h) . . . . . max. 0,1 %  
 residue on ignition . . . . . max. 0,05 %  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.

Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
SA00221000	1 kg	Ⓟ
SA0022025P	25 kg	Ⓟ

### SA0021 D(+) - Saccharose, reagent grade, Reag. Ph Eur

identity (IR-spectrum) . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ ;  
 $c = 26, \text{H}_2\text{O}$ ) . . . . . + 66,3° - + 67,0°  
 appearance of solution (50 %,  $\text{H}_2\text{O}$ ) . . . . . passes test  
 acidity or alkalinity . . . . . passes test  
 dextrans . . . . . passes test  
 dye stuffs . . . . . passes test

sulfites (as  $\text{SO}_2$ ) . . . . . max. 0,001 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 lead (Pb) . . . . . max. 0,00005 %  
 residue on ignition . . . . . max. 0,02 %  
 loss on drying (105 °C, 3 h) . . . . . max. 0,1 %

Art. No.	Volume	Container
SA00210500	500 g	Ⓟ
SA00211000	1 kg	Ⓟ
SA0021005P	5 kg	Ⓟ
SA0021025P	25 kg	Ⓟ

### SU0030 D(+) - Saccharose (sucrose), molecular biology grade

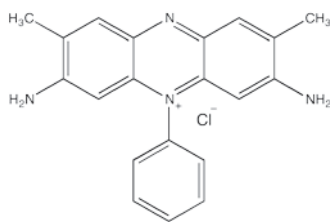
identity (IR-spectrum) . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ ;  
 $c = 26, \text{H}_2\text{O}$ ) . . . . . + 66,2° - + 66,8°  
 absorbance of an aqueous solution (50 %) in a 1 cm  
 cell at 260 nm . . . . . max. 0,15 AU  
 absorbance of an aqueous solution (50 %) in a 1 cm  
 cell at 280 nm . . . . . max. 0,10 AU

heavy metals (as Pb) . . . . . max. 0,001 %  
 reducing sugars . . . . . max. 0,5 %  
 TLC test . . . . . passes test  
 residue on ignition . . . . . max. 0,02 %  
 DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
SU00301000	1 kg	Ⓟ
SU0030005P	5 kg	Ⓟ

## Safranine O, C.I. 50240

### SA0040 Safranine O, C.I. 50240, for microscopy



- $C_{20}H_{19}ClN_4$
- $M = 350,88 \text{ g/mol}$
- CAS [477-73-6]
- EINECS-No.: 207-518-8
- Solub. in water: (20 °C): 50 g/l
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 3204 13 00 90
- Applications: microscopy, manufacture of dyes.

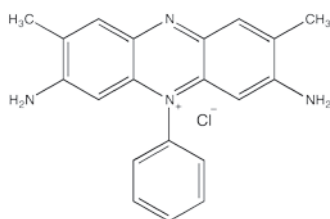
#### Specifications:

Absorption maximum  $\lambda$  (in ethanol 50 %) . . . . . 530 - 534 nm  
 Absorptivity ( $A_{1\%}^{1\text{cm}}$ ;  $\lambda$  max.) . . . . . 875 - 1450  
 loss on drying (110 °C) . . . . . max. 15 %

Art. No.	Volume	Container
SA00400010	10 g	Ⓟ
SA00400050	50 g	Ⓟ

### Safranine O, solution according to Gram

#### SA0042 Safranine O, solution according to Gram



- $C_{20}H_{19}ClN_4$
- $M = 350,88 \text{ g/mol}$
- CAS [477-73-6]
- EINECS-No.: 207-518-8
- Density: 0,99 g/cm<sup>3</sup>
- Solub. in water: (20 °C): soluble
- Flash pt. 49 °C
- GHS-H sentences: EUH210
- Tariff number: 3204 13 00 90
- Applications: microscopy, bacterium staining.

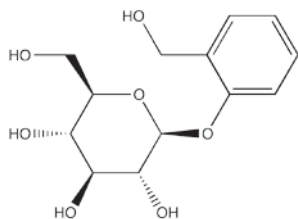
#### Specifications:

suitability for microscopy . . . . . passes test

Art. No.	Volume	Container
SA0042G100	100 ml	Ⓟ
SA00420500	500 ml	Ⓟ
SA00421000	1 l	Ⓟ
SA00422500	2,5 l	Ⓟ

## D-Salicin

## SA0200 D-Salicin, for biochemistry



- Synonyms: 2-(Hydroxymethyl)phenyl-β-D-glucopyranoside
- C<sub>13</sub>H<sub>18</sub>O<sub>7</sub>
- M = 286,28 g/mol
- CAS [138-52-3]
- EINECS-No.: 205-331-6
- Solub. in water: (15 °C): 36 g/l
- Melting point: 199 - 201 °C
- Tariff number: 2938 90 90 90
- Applications: in biochemistry, for microbiology, for pharmaceuticals synthesizing.

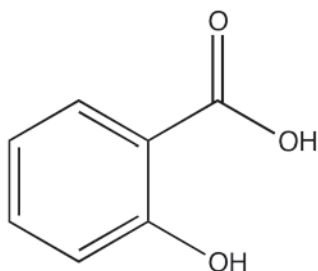
## Specifications:

assay (HPLC) . . . . .min. 98 %  
 specific rotation ([α]<sub>D</sub><sup>20</sup>/D, c = 2, H<sub>2</sub>O) . . . - 59 ° - 64,5 °  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 residue on ignition . . . . .max. 0,1 %  
 loss on drying (110 °C) . . . . .max. 2 %  
 suitability as enzymatic substract . . . . .passes test

Art. No.	Volume	Container
SA02000025	25 g	Ⓟ

## Salicylic acid

## AC2002 Salicylic acid, extra pure, Pharmapur®, Ph Eur, BP, USP



- Synonyms: 2-Hydroxybenzoic acid
- C<sub>7</sub>H<sub>6</sub>O<sub>3</sub>
- M = 138,12 g/mol
- CAS [69-72-7]
- EINECS-No.: 200-712-3
- Solub. in water: (20 °C): 2 g/l
- Melting point: 158-161 °C
- Boiling point: 211 °C
- Flash pt. 157 °C
- Ignition temp.: 500 °C
- Vapour pressure: (100 °C) < 1hPa
- LD 50 (oral, rat): 891 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H318 - H302 - H335 - H315
- GHS-P sentences: P261 - P305 + P351 + P338 - P310 - P321 - P405 - P501a
- Tariff number: 2918 21 00 00
- Applications: synthesis of organic products, manufacture of dyes, analytical chemistry, in pharma industry.

## Specifications:

assay (acidimetric, on dried sample) . . . . . 99,5 - 100,5 %  
 identification . . . . .passes test  
 appearance of solution (10 %, ethanol 96 %) . . . . .clear and colourless  
 chlorides (Cl) . . . . .max. 0,01 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,02 %  
 heavy metals (as Pb) . . . . .max. 0,002 %  
 related substances . . . . .passes test  
 residue on ignition . . . . .max. 0,05 %  
 loss on drying . . . . .max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC20020500	500 g	Ⓟ
AC20021000	1 kg	Ⓟ

## Sea sand

- CAS [14808-60-7]
- EINECS-No.: 238-878-4
- Solub. in water: (20 °C): insoluble

- Tariff number: 2505 10 00 00

- Applications: . manufacture of glass, in the ceramics industry, in the production of enamels, antifoaming agent

## AR0100 Sea sand, washed, thin

grain size . . . . . approx. 300 - 350 μm  
 solubility in HCl . . . . .max. 0,2 %  
 chlorides (Cl) . . . . .max. 0,015 %  
 loss on ignition (800 °C) . . . . .max. 0,2 %

Art. No.	Volume	Container
AR01000500	500 g	Ⓟ
AR01001000	1 kg	Ⓟ
AR0100005P	5 kg	Ⓟ
AR0100025P	25 kg	Ⓟ

## AR0101 Sea sand, washed, thick

grain size . . . . . approx. 1-2 mm  
 solubility in HCl . . . . .max. 0,2 %  
 chlorides (Cl) . . . . .max. 0,015 %  
 loss on ignition (800 °C) . . . . .max. 0,2 %

Art. No.	Volume	Container
AR01010500	500 g	Ⓟ
AR01011000	1 kg	Ⓟ
AR0101005P	5 kg	Ⓟ
AR0101025P	25 kg	Ⓟ

## Selenium

## SE0025 Selenium, black, powder



- Se
- M = 78,96 g/mol
- CAS [7782-49-2]
- EINECS-No.: 231-957-4
- Solub. in water: (20 °C): slightly soluble
- Melting point: 217 °C
- Boiling point: 685 °C
- Vapour pressure: (20 °C) 0,001 hPa
- LD 50 (oral, rat): 360 mg/kg
- EC-Index-No.: 034-001-00-2
- ADR: 6.1 T5 III UN 3283
- IMDG: 6.1 III UN 3283
- IATA/ICAO: 6.1 III UN 3283

- GHS-signal word: Danger
- GHS-H sentences: H301 - H331 - H373 - H413
- GHS-P sentences: P260 - P261 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2804 90 00 00
- Applications: analytical chemistry, laboratory reagent, catalyst (for determination of: nitrogen), synthesis of organic products, photography, pigment, in the electronic industry, manufacturing of photoelectric cells, in the rubber industry.

copper (Cu) . . . . .max. 0,005 %  
 iron (Fe) . . . . .max. 0,05 %  
 lead (Pb) . . . . .max. 0,05 %  
 residue on ignition . . . . .max. 0,5 %  
 grain size (> 150 μm) . . . . .max. 5 %

Art. No.	Volume	Container
SE00250050	50 g	Ⓟ
SE00250100	100 g	Ⓟ
SE00250250	250 g	Ⓟ

## Specifications:

assay (gravimetric) . . . . .min. 99 %

# Seleni

## Selenium dioxide

### SE0039 Selenium dioxide, synthesis grade



- Synonyms: Selenium(IV) oxide, Selenious anhydride
- $\text{SeO}_2$
- M = 110,96 g/mol
- CAS [7446-08-4]
- EINECS-No.: 231-194-7
- Solub. in water: (14 °C): 384 g/l
- Vapour pressure: (70 °C) 16 hPa
- LD 50 (oral, rat): 68,1 mg/kg
- EC-Index-No.: 034-002-00-8
- ADR: 6.1 T5 II UN 3283
- IMDG: 6.1 II UN 3283
- IATA/ICAO: 6.1 II UN 3283
- GHS-signal word: Danger
- GHS-H sentences: H301 - H331 - H373 - H410
- GHS-P sentences: P260 - P261 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2811 29 90 90
- Applications: laboratory reagent, synthesis of organic products, oxidizing agent.

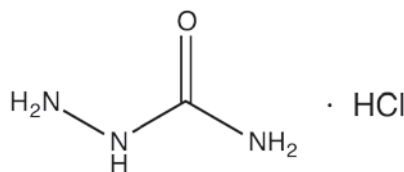
#### Specifications:

assay (iodometric) . . . . .min. 98 %

Art. No.	Volume	Container
SE00390250	250 g	P
SE00391000	1 kg	P

## Semicarbazide hydrochloride

### SE0070 Semicarbazide hydrochloride, synthesis grade



- Synonyms: Hydrazinecarboxamide monohydrochloride, N-Aminourea hydrochloride, Carbamylhydrazine hydrochloride
- $\text{CH}_2\text{N}_3\text{O} \cdot \text{HCl}$
- M = 111,53 g/mol
- CAS [563-41-7]
- EINECS-No.: 209-247-0
- Solub. in water: (20 °C): freely soluble
- Melting point: 174 - 178 °C (decomposes)
- LD 50 (oral, rat): 123 mg/kg
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H301 - H330 - H373 - H315 - H319

- GHS-P sentences: P301 + P310 - P305 + P351 + P338 - P310 - P320 - P405 - P501a
- Tariff number: 2928 00 90 90
- Applications: analytical chemistry, laboratory reagent (for the analysis of: aldehydes and ketones), synthesis of organic products.
- Appearance: White crystalline powder

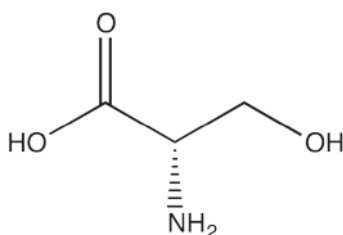
#### Specifications:

assay (argentometric) . . . . .min. 98 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,02 %

Art. No.	Volume	Container
SE00700100	100 g	P

## L-Serine

### SE0105 L-Serine, extra pure, Pharnpur®, Ph Eur, BP, USP



- Synonyms: 3-Hydroxy-L-alanine
- $\text{C}_3\text{H}_7\text{NO}_3$
- M = 105,09 g/mol
- CAS [56-45-1]
- EINECS-No.: 200-274-3
- Solub. in water: (20 °C): 364 g/l
- Melting point: 215 - 225 °C
- Tariff number: 2922 50 00 90
- Applications: in biochemistry, synthesis of organic products, in pharma industry.

specific rotation ( $[\alpha]_D^{20}$ ):  
 c = 10, HCl 2N) . . . . . + 14,0° - + 15,6°  
 chlorides (Cl) . . . . .max. 0,02 %  
 sulfates ( $\text{SO}_4$ ) . . . . .max. 0,03 %  
 ammonium ( $\text{NH}_4$ ) . . . . .max. 0,02 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %  
 related substances . . . . .passes test  
 ninhydrin-positive substances . . . . .max. 0,5 %  
 residue on ignition . . . . .max. 0,1 %  
 loss on drying (105 °C) . . . . .max. 0,2 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

#### Specifications:

assay (titration with  $\text{HClO}_4$ , on dried sample) . . . . . 98,5 - 101 %  
 identity (IR-spectrum) . . . . .passes test  
 appearance of solution . . . . .passes test

Art. No.	Volume	Container
SE01050100	100 g	P

## Silica gel (orange)

### GE0042 Silica gel with humidity indicator (orange), 1 - 3 mm

- Solub. in water: (20 °C): 1 g/l
- Melting point: > 1000 °C
- Tariff number: 2811 22 00 90
- Applications: desiccant.

#### Specifications:

water absorption capacity (24 hours at 80 % relative humidity) . . . . .min. 27 %  
 loss on drying (180 °C) . . . . .max. 2 %

Art. No.	Volume	Container
GE00420500	500 g	P
GE00421000	1 kg	P
GE0042005P	5 kg	P
GE0042025P	25 kg	P

### GE0043 Silica gel with humidity indicator (orange), 2,5 - 6 mm

- Solub. in water: (20 °C): insoluble
- Melting point: > 1000 °C
- Tariff number: 2811 22 00 90
- Applications: analytical chemistry, chromatography.

#### Specifications:

water absorption capacity (24 hours at 80 % relative humidity) . . . . .min. 27 %  
 loss on drying (180 °C) . . . . .max. 2 %

Art. No.	Volume	Container
GE00430500	500 g	P
GE00431000	1 kg	P
GE0043005P	5 kg	P

## Silica gel 60, for flash chromatography

## GE0048 Silica gel 60, 0,04 - 0,06 mm, for flash chromatography (230 - 400 mesh ASTM)

- SiO<sub>2</sub>
- M = 60,09 g/mol
- CAS [7631-86-9]
- EINECS-No.: 231-545-4
- Solub. in water: (20 °C): insoluble
- Tariff number: 2811 22 00 10
- Applications: analytical chemistry, chromatography.

**Specifications:**

mean pore diameter . . . . . 60 Å  
 pH (10 %, H<sub>2</sub>O) . . . . . approx. 7  
 spec. surface . . . . . approx. 450 m<sup>2</sup>/g  
 activity degree . . . . . II(Brockmann/ Shodder)  
 iron (Fe) . . . . . max. 0,03 %  
 chlorides (Cl) . . . . . max. 0,01 %

Art. No.	Volume	Container
GE00481000	1 kg	
GE00482500	2,5 kg	
GE0048005P	5 kg	
GE0048025P	25 kg	

## Silica gel 60, for column chromatography

## GE0049 Silica gel 60, 0,06 - 0,2 mm, for column chromatography (70 - 230 mesh ASTM)

- SiO<sub>2</sub>
- M = 60,09 g/mol
- CAS [7631-86-9]
- EINECS-No.: 231-545-4
- Solub. in water: (20 °C): insoluble
- Tariff number: 2811 22 00 10
- Applications: analytical chemistry, chromatography.

**Specifications:**

mean pore diameter . . . . . 60 Å  
 pH (10 %, H<sub>2</sub>O) . . . . . approx. 7  
 spec. surface . . . . . approx. 450 m<sup>2</sup>/g  
 activity degree . . . . . II(Brockmann/ Shodder)  
 iron (Fe) . . . . . max. 0,03 %  
 chlorides (Cl) . . . . . max. 0,01 %

Art. No.	Volume	Container
GE00491000	1 kg	
GE0049005P	5 kg	
GE0049025P	25 kg	

## GE0050 Silica gel 60, 0,2 - 0,5 mm, for column chromatography (35 - 70 mesh ASTM)

- SiO<sub>2</sub>
- M = 60,09 g/mol
- CAS [7631-86-9]
- EINECS-No.: 231-545-4
- Tariff number: 2811 22 00 10
- Applications: analytical chemistry, chromatography.

**Specifications:**

mean pore diameter . . . . . 60 Å  
 pH (10 %, H<sub>2</sub>O) . . . . . approx. 7  
 spec. surface . . . . . 500 m<sup>2</sup>/g  
 activity degree . . . . . II(Brockmann/ Shodder)  
 iron (Fe) . . . . . max. 0,03 %

chlorides (Cl) . . . . . max. 0,01 %

Art. No.	Volume	Container
GE00501000	1 kg	
GE0050005P	5 kg	

## Silica gel 60 for thin layer chromatography

- Synonyms: Preparative layer chromatography, PLC/  
PCC
- SiO<sub>2</sub>

- M = 60,09 g/mol
- CAS [7631-86-9]
- EINECS-No.: 231-545-4

- Solub. in water: (20 °C): insoluble
- Tariff number: 2811 22 00 10
- Applications: analytical chemistry, chromatography.

## GE0030 Silica gel 60, for thin layer chromatography

grain size . . . . . 5 - 14 µm  
 mean pore diameter . . . . . 60 Å  
 spec. surface . . . . . 500 - 600 m<sup>2</sup>/g

pH (10 %, H<sub>2</sub>O) . . . . . approx. 7  
 solubility in water . . . . . max. 0,2 %

Art. No.	Volume	Container
GE00301000	1 kg	

## GE0033 Silica gel 60, for thin layer chromatography, with gypsum and pigment addition for UV

grain size . . . . . 5 - 14 µm  
 mean pore diameter . . . . . 60 Å  
 spec. surface . . . . . 500-600 m<sup>2</sup>/g  
 pH (10 %, H<sub>2</sub>O) . . . . . approx. 7

solubility in water . . . . . max. 0,2 %  
 indicator . . . . . F254  
 gypsum content . . . . . approx. 11 %

Art. No.	Volume	Container
GE00331000	1 kg	
GE0033005P	5 kg	

## Siliceous earth

## TI0010 Siliceous earth, purified and calcined, extra pure, Pharmpur®, NF

- Synonyms: Infusorial earth, Diatomaceous earth,  
Diatomite
- SiO<sub>2</sub>
- M = 60,08 g/mol
- CAS [68855-54-9]
- EINECS-No.: 272-489-0
- Solub. in water: (20 °C): almost insoluble
- Melting point: 1713 °C
- Boiling point: 2230 °C
- GHS-signal word: Warning
- GHS-H sentences: H371

- GHS-P sentences: P260 - P264 - P270 - P309 +  
P311 - P405 - P501a
- Tariff number: 2512 00 00 00
- Applications: for laboratory uses, in pharma industry.

loss on drying (105 °C) . . . . . max. 0,5 %  
 residue on ignition (980 °C) . . . . . max. 2 %  
 limit of nonsiliceous  
 substances . . . . . 50 mg  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.

**Specifications:**

solubility in HCl . . . . . max. 2 %  
 solubility in water . . . . . max. 0,2 %  
 arsenic eliminated by washing . . . . . max. 0,001 %  
 lead eliminated by washing . . . . . max. 0,001 %  
 soluble in acid . . . . . max. 2 %

Art. No.	Volume	Container
TI00101000	1 kg	
TI0010005P	5 kg	

## Silicon dioxide

## SI0040 Silicon dioxide, highly dispersed

- SiO<sub>2</sub>
- M = 60,08 g/mol
- CAS [7631-86-9]
- EINECS-No.: 231-545-4
- Solub. in water: (20 °C): insoluble
- Melting point: 1726 °C
- LD 50 (oral, rat): > 10000 mg/kg
- Tariff number: 2811 22 00 90

- Applications: painting, in the coating industry, in the  
rubber industry, manufacture of adhesives, manufac-  
turing of inks, cosmetics, in food industry.

aluminium (as Al<sub>2</sub>O<sub>3</sub>) . . . . . max. 0,05 %  
 iron (as Fe<sub>2</sub>O<sub>3</sub>) . . . . . max. 0,003 %  
 titanium (as TiO<sub>2</sub>) . . . . . max. 0,03 %  
 loss on drying (195 °C) . . . . . max. 1,5 %

**Specifications:**

assay (on dried sample) . . . . . min. 99,8 %  
 specific surface area (BET) . . . . . 200 ± 25 m<sup>2</sup>/g  
 HCl content . . . . . max. 0,025 %  
 pH (4 %, H<sub>2</sub>O) . . . . . 3,7 - 4,7

Art. No.	Volume	Container
SI00400250	250 g	

# Silico

## Silicone liquid

### SI0025 Silicone liquid, for heating baths, pure

- CAS [63148-62-9]
- Density: 0,96 g/cm<sup>3</sup>
- Melting point: ~ -54 °C
- Flash pt. 299 °C
- Vapour pressure: (200 °C) ~ 1,47 hPa
- Refraction index: (n 25 °C/D) 1,402
- Tariff number: 3910 00 00 90
- Applications: for heating baths.

**Specifications:**  
 temperature range ..... -50 to 190 °C  
 turbidity ..... max. 4 N.T.U.  
 viscosity ..... 95 - 105 mm<sup>2</sup>/s  
 volatile matter ..... max. 0,5 %

Art. No.	Volume	Container
SI00250500	500 ml	Ⓒ
SI00251000	1 l	Ⓒ
SI0025005P	5 l	Ⓒ
SI0025025P	25 l	Ⓒ

### SI0020 Silicone liquid, antifoaming

- CAS [63148-62-9]
- Density: 1,01 g/cm<sup>3</sup>
- Tariff number: 3910 00 00 90
- Applications: in the pharmaceuticals industry, cosmetics.

**Specifications:**  
 Suitable for distillation of organic products.

Art. No.	Volume	Container
SI00200100	100 ml	Ⓒ
SI00200500	500 ml	Ⓒ

### SI0030 Silicone liquid, low viscosity

- CAS [63148-62-9]
- Density: (25 °C) ~ 0,950 g/cm<sup>3</sup>
- Solub. in water: (20 °C): almost non-miscible
- Melting point: ~ -60 °C
- Flash pt. 230 °C
- Ignition temp.: > 400 °C
- Vapour pressure: (200 °C) 0,0133 hPa
- Refraction index: (n 25 °C/D) 1,4

- LD 50 (oral, rat): > 2000 mg/kg
- Tariff number: 3910 00 00 90
- Applications: in lubricant compositions, in the rubber industry, in the coating industry.

**Specifications:**  
 colour (Hazen) ..... max. 30  
 turbidity ..... max. 4 N.T.U.

viscosity ..... 18 - 22 mm<sup>2</sup>/s

Art. No.	Volume	Container
SI00301000	1 l	Ⓒ
SI0030025P	25 l	Ⓒ

## Silicone paste A

### SI0033 Silicone paste A, extra pure, for lubrication at high temperature

- Solub. in water: (20 °C): insoluble
- Flash pt. > 400 °C
- GHS-H sentences: EUH210
- Tariff number: 3910 00 00 90

- Applications: in lubricant compositions, protective agent (in the electronic industry, moisture), corrosion inhibitor. for greasing at high temperatures.

Art. No.	Volume	Container
SI00330100	100 g	Ⓒ

**Specifications:**  
 identity ..... passes test

## Silicone paste B

### SI0034 Silicone paste B, extra pure, for lubrication at pressure and vacuum

- Solub. in water: (20 °C): insoluble
- Flash pt. > 400 °C
- LD 50 (oral, rat): > 5000 mg/kg
- GHS-H sentences: EUH210
- Tariff number: 3910 00 00 90

- Applications: in lubricant compositions, for greasing at pressure or vacuum.

Art. No.	Volume	Container
SI00340100	100 g	Ⓒ

**Specifications:**  
 identity ..... passes test

## Silver carbonate

### PL0010 Silver carbonate, extra pure

- Ag<sub>2</sub>CO<sub>3</sub>
- M = 275,75 g/mol
- CAS [534-16-7]
- EINECS-No.: 208-590-3
- Solub. in water: (20 °C): 0,032 g/l
- LD 50 (oral, rat): 3731 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H318
- GHS-P sentences: P280 - P305 + P351 + P338 - P310

- Tariff number: 2843 29 00 00
- Applications: analytical chemistry, laboratory reagent, microscopy, dye.

arsenic (As) ..... max. 0,0001 %  
 iron (Fe) ..... max. 0,002 %  
 lead (Pb) ..... max. 0,003 %  
 non precipitable with HCl ..... max. 0,5 %  
 loss on drying (105 °C) ..... max. 0,2 %

Art. No.	Volume	Container
PL00100025	25 g	Ⓒ

## Silver chloride

### PL0030 Silver chloride, extra pure

- AgCl
- M = 143,34 g/mol
- CAS [7783-90-6]
- EINECS-No.: 232-033-3
- Solub. in water: (25 °C): 0,00188 g/l
- Melting point: 455 °C
- Boiling point: 1554 °C
- LD 50 (oral, rat): > 5110 mg/kg
- Tariff number: 2843 29 00 00

- Applications: analytical chemistry, laboratory reagent, for reference electrodes.

lead (Pb) ..... max. 0,0005 %  
 nickel (Ni) ..... max. 0,003 %

**Specifications:**  
 assay ..... min. 99,5 %  
 insoluble in NH<sub>4</sub>OH ..... max. 0,05 %  
 sulfates (SO<sub>4</sub>) ..... max. 0,001 %  
 copper (Cu) ..... max. 0,0002 %  
 iron (Fe) ..... max. 0,0005 %

Art. No.	Volume	Container
PL00300025	25 g	Ⓒ
PL00300100	100 g	Ⓒ

## Silver nitrate

- AgNO<sub>3</sub>
- M = 169,87 g/mol
- CAS [7761-88-8]
- EINECS-No.: 231-853-9
- Solub. in water: (20 °C): soluble
- Melting point: 212 °C
- Boiling point: 444 °C (decomposes)
- LD 50 (oral, rat): 1173 mg/kg
- EC-Index-No.: 047-001-00-2
- ADR: 5.1 O2 II UN 1493
- IMDG: 5.1 II UN 1493
- IATA/ICAO: 5.1 II UN 1493
- GHS-signal word: Danger
- GHS-H sentences: H272 - H314 - H410
- GHS-P sentences: P221 - P303 + P361 + P553 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2843 21 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, photography, manufacture of dyes, antiseptic, manufacture of mirrors.
- Appearance: White crystals

## PL0049 Silver nitrate, extra pure, Pharpur®, Ph Eur, BP, USP

assay (argentometric) . . . . . 99 - 100,5 %  
 identity . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 acidity or alkalinity . . . . . passes test  
 aluminium, lead, copper and bismuth . . . . . passes test  
 foreign salts . . . . . max. 0,3 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
PL00490025	25 g	0
PL00490050	50 g	0
PL00490100	100 g	0
PL00490250	250 g	0
PL00491000	1 kg	0

## PL0050 Silver nitrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (argentometric) . . . . . min. 99,8 %  
 identity . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . passes test  
 acidity . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,0005 %  
 nitrites (NO<sub>2</sub>) . . . . . max. 0,05 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,002 %  
 cadmium (Cd) . . . . . max. 0,0001 %

copper (Cu) . . . . . max. 0,0002 %  
 iron (Fe) . . . . . max. 0,0002 %  
 lead (Pb) . . . . . max. 0,001 %  
 manganese (Mn) . . . . . max. 0,0005 %  
 nickel (Ni) . . . . . max. 0,0005 %  
 zinc (Zn) . . . . . max. 0,0001 %  
 non precipitable with HCl (as SO<sub>4</sub>) . . . . . max. 0,01 %

Art. No.	Volume	Container
PL00500025	25 g	0
PL00500050	50 g	0
PL00500100	100 g	0
PL00500250	250 g	0
PL00501000	1 kg	0

## Silver nitrate, volumetric solutions

## PL0057 Silver nitrate, solution 1 mol/l (1 N)

- AgNO<sub>3</sub>
- M = 169,87 g/mol
- CAS [7761-88-8]
- EINECS-No.: 231-853-9
- Density: 1,14 g/cm<sup>3</sup>
- LD 50 (oral, rat): 1173 mg/kg (pure substance)
- EC-Index-No.: 047-001-00-2
- ADR: 8 C9 II UN 1760
- IMDG: 8 II UN 1760
- IATA/ICAO: 8 II UN 1760
- GHS-signal word: Danger

- GHS-H sentences: H314 - H411
- GHS-P sentences: P260 - P303 + P361 + P553 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2843 21 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, precipitant for: Cl<sup>-</sup>, I<sup>-</sup>, CN<sup>-</sup>, SCN<sup>-</sup> . . .

1 ml = 0,1699 g AgNO<sub>3</sub>. This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium chloride volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001

Art. No.	Volume	Container
PL00570500	500 ml	0
PL00571000	1 l	0

## PL0055 Silver nitrate, solution 0,1 mol/l (0,1 N)

- AgNO<sub>3</sub>
- M = 169,87 g/mol
- CAS [7761-88-8]
- EINECS-No.: 231-853-9
- Density: 1,01 g/cm<sup>3</sup>
- LD 50 (oral, rat): 1173 mg/kg (pure substance)
- EC-Index-No.: 047-001-00-2
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H412
- GHS-P sentences: P280 - P273 - P305 + P351 + P338 - P321 - P362 - P501a
- Tariff number: 2843 21 00 00

- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,01699 g AgNO<sub>3</sub>. This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium chloride volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
PL00550500	500 ml	0
PL00551000	1 l	0
PL00552500	2,5 l	0
PL0055005P	5 l	0
PL0055010C	10 l	0

## PL0059 Silver nitrate, solution 0,05 mol/l (0,05 N)

- AgNO<sub>3</sub>
- M = 169,87 g/mol
- CAS [7761-88-8]
- EINECS-No.: 231-853-9
- Density: ~ 1,00 g/cm<sup>3</sup>
- LD 50 (oral, rat): 1173 mg/kg (pure substance)
- EC-Index-No.: 047-001-00-2
- GHS-H sentences: H412
- GHS-P sentences: P273 - P501a
- Tariff number: 2843 21 00 00

- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001

1 ml = 0,008494 g AgNO<sub>3</sub>. This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium chloride volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
PL00591000	1 l	0

# Silver

## PL0056 Silver nitrate, solution 0,02 mol/l (0,02 N)

- AgNO<sub>3</sub>
- M = 169,87 g/mol
- CAS [7761-88-8]
- EINECS-No.: 231-853-9
- Density: 1,00 g/cm<sup>3</sup>
- LD 50 (oral, rat): 1173 mg/kg (pure substance)
- EC-Index-No.: 047-001-00-2
- GHS-H sentences: H412
- GHS-P sentences: P273 - P501a
- Tariff number: 2843 21 00 00

- Applications: analytical chemistry, titrant in volumetric analysis.

### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,003398 g AgNO<sub>3</sub>. This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium chloride volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
PL00561000	1 l	0

## PL0058 Silver nitrate, solution 0,01 mol/l (0,01 N)

- AgNO<sub>3</sub>
- M = 169,87 g/mol
- CAS [7761-88-8]
- EINECS-No.: 231-853-9
- Density: 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 047-001-00-2
- Tariff number: 2843 21 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,001699 g AgNO<sub>3</sub>. This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium chloride volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
PL00581000	1 l	0

## PL0051 Silver nitrate, concentrated solution to prepare 1 l of solution 0,1 mol/l (0,1 N)



- AgNO<sub>3</sub>
- M = 169,87 g/mol
- CAS [7761-88-8]
- EINECS-No.: 231-853-9
- Density: 1,27 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 1173 mg/kg (pure substance)
- EC-Index-No.: 047-001-00-2
- ADR: 8 C9 II UN 1760
- IMDG: 8 II UN 1760

- IATA/ICAO: 8 II UN 1760
- GHS-signal word: Danger
- GHS-H sentences: H314 - H411
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2843 21 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, photography, manufacture of dyes.

### Specifications:

amount of substance: 16,987 g AgNO<sub>3</sub>  
concentrated solution . . . . . 1 mol/l ± 0,1 %

Art. No.	Volume	Container
PL005100PA	u.	0

## Silver oxide

### PL0060 Silver oxide, extra pure, Reag. Ph Eur



- Ag<sub>2</sub>O
- M = 231,74 g/mol
- CAS [20667-12-3]
- EINECS-No.: 243-957-1
- Solub. in water: (20 °C): 0,0016 g/l
- Melting point: > 200 °C (decomposes)
- LD 50 (oral, rat): 2820 mg/kg
- ADR: 5.1 OC2 II UN 3085
- IMDG: 5.1 II UN 3085
- IATA/ICAO: 5.1 II UN 3085
- GHS-signal word: Danger
- GHS-H sentences: H272 - H314 - EUH044

- GHS-P sentences: P221 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2843 29 00 00
- Applications: analytical chemistry, laboratory reagent, oxidizing agent, synthesis of organic products, catalyst, manufacture of glass.
- Appearance: Black powder

### Specifications:

assay (argentometric) . . . . . 99 - 101 %  
silver (Ag) . . . . . 92,2 - 94,0 %  
carbonates (CO<sub>3</sub>) . . . . . max. 0,2 %

nitrites (NO<sub>2</sub>) . . . . . max. 0,01 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
copper (Cu) . . . . . max. 0,0005 %  
iron (Fe) . . . . . max. 0,003 %  
lead (Pb) . . . . . max. 0,001 %  
sodium (Na) . . . . . max. 0,01 %  
loss on drying . . . . . max. 0,05 %

Art. No.	Volume	Container
PL00600010	10 g	0
PL00600025	25 g	0

## Silver sulfate

- Synonyms: Sulfuric acid silver salt
- Ag<sub>2</sub>SO<sub>4</sub>
- M = 311,79 g/mol
- CAS [10294-26-5]
- EINECS-No.: 233-653-7

- Solub. in water: (25 °C): 8 g/l
- Melting point: 655 °C
- LD 50 (oral, rat): ~ 5000 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H318

- GHS-P sentences: P280 - P305 + P351 + P338 - P310
- Tariff number: 2843 29 00 90
- Applications: analytical chemistry, laboratory reagent, catalyst (determining COD).

### PL0070 Silver sulfate, extra pure



assay (argentometric) . . . . . min. 99 %  
chlorides (Cl) . . . . . max. 0,001 %  
nitrites (NO<sub>2</sub>) . . . . . max. 0,001 %  
copper (Cu) . . . . . max. 0,005 %  
iron (Fe) . . . . . max. 0,001 %

lead (Pb) . . . . . max. 0,001 %  
non precipitable with HCl (as SO<sub>4</sub>) . . . . . max. 0,3 %

Art. No.	Volume	Container
PL00700025	25 g	0
PL00700100	100 g	0
PL00700250	250 g	0

### PL0071 Silver sulfate, reagent grade, ACS



assay (argentometric) . . . . . min. 99,5 %  
identity . . . . . passes test  
insoluble in water and silver  
chloride . . . . . max. 0,02 %  
chlorides (Cl) . . . . . max. 0,001 %  
nitrites (NO<sub>2</sub>) . . . . . max. 0,001 %  
copper (Cu) . . . . . max. 0,0005 %

iron (Fe) . . . . . max. 0,0005 %  
lead (Pb) . . . . . max. 0,001 %  
nickel (Ni) . . . . . max. 0,001 %  
zinc (Zn) . . . . . max. 0,0005 %  
non precipitable with HCl (as SO<sub>4</sub>) . . . . . max. 0,03 %

Art. No.	Volume	Container
PL00710025	25 g	0
PL00710100	100 g	0
PL00710250	250 g	0



## Silver sulfate, sulfuric solutions

## PL0072 Silver sulfate, solution 1% in sulfuric acid, for COD determination, according to ISO 6060

- AgSO<sub>4</sub>
- M = 311,79 g/mol
- CAS [10294-26-5]
- EINECS-No.: 233-653-7
- Density: 1,84 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: > 340 °C
- LD 50 (oral, rat): 2140 mg/kg (sulfuric acid)
- ADR: 8 C1 II UN 3264

- IMDG: 8 II UN 3264
- IATA/ICAO: 8 II UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: determining COD (catalyst).

## Specifications:

mixture: 1 g of silver sulfate in 100 ml of sulfuric acid 96%

Art. No.	Volume	Container
PL00721000	1 l	Ø
PL00722500	2,5 l	Ø

## PL0073 Silver sulfate, solution 0,66% in sulfuric acid

- AgSO<sub>4</sub>
- M = 311,79 g/mol
- CAS [10294-26-5]
- EINECS-No.: 233-653-7
- Density: 1,84 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 II UN 3264
- IMDG: 8 II UN 3264

- IATA/ICAO: 8 II UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: determining COD (catalyst).

## Specifications:

mixture: 0,66g of silver sulfate in 100 ml of sulfuric acid 96%

Art. No.	Volume	Container
PL00731000	1 l	Ø

## Soda lime

## CA0170 Soda lime, with indicator

- Synonyms: Mixture of calcium hydroxide and sodium hydroxide
- CAS [8006-28-8]
- Solub. in water: (20 °C): insoluble
- ADR: 8 C6 III UN 1907
- IMDG: 8 III UN 1907
- IATA/ICAO: 8 III UN 1907

- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry; for the absorption of: carbon dioxide.

## Specifications:

CO<sub>2</sub>-absorption capacity .....min. 28 %  
loss on drying (105 °C) ..... 13 - 18 %

Art. No.	Volume	Container
CA01701000	1 kg	Ø

## Sodium

## S00010 Sodium, metal, extra pure, in vaseline oil, Reag. Ph Eur

- Na
- M = 22,99 g/mol
- CAS [7440-23-5]
- EINECS-No.: 231-132-9
- Solub. in water: (20 °C): explosion reaction
- Melting point: 98 °C
- Boiling point: 889 °C
- Ignition temp.: > 115 °C
- Vapour pressure: (400 °C) 1,6 hPa
- EC-Index-No.: 011-001-00-0
- ADR: 4.3 W2 I UN 1428

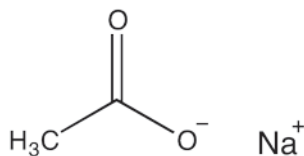
- IMDG: 4.3 I UN 1428
- IATA/ICAO: 4.3 I UN 1428
- GHS-signal word: Danger
- GHS-H sentences: H260 - EUH014 - H314
- GHS-P sentences: P231 + P232 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2805 11 00 00
- Applications: analytical chemistry, laboratory reagent, to make sodium salts, reducing agent (ketones), for the synthesis of: lead tetraethyl, manufacturing of photoelectric cells, manufacturing of sodium lamps.

## Specifications:

chlorides (Cl) .....max. 0,01 %  
sulfates (SO<sub>4</sub>) .....max. 0,01 %  
calcium (Ca) .....max. 0,1 %  
iron (Fe) .....max. 0,002 %  
potassium (K) .....max. 0,05 %

Art. No.	Volume	Container
S000100100	100 g	Ø
S000100500	500 g	Ø

## Sodium acetate anhydrous



- Synonyms: Acetic acid sodium salt anhydrous
- CH<sub>3</sub>COONa
- M = 82,03 g/mol
- CAS [127-09-3]
- EINECS-No.: 204-823-8
- Solub. in water: (20 °C): 365 g/l
- Melting point: 324 °C (decomposes)
- Boiling point: > 400 °C (decomposes)
- Flash pt. > 250 °C

- Ignition temp.: 607 °C
- LD 50 (oral, rat): 3530 mg/kg
- Tariff number: 2915 29 00 90
- Applications: in food industry, analytical chemistry, synthesis of organic products, photography.

## S00032 Sodium acetate anhydrous, extra pure

assay (titration with HClO<sub>4</sub>, on dried sample) .....99 - 101 %  
appearance of solution (10 %, H<sub>2</sub>O) .....passes test  
pH (5 %, H<sub>2</sub>O) .....7,5 - 9,2  
insoluble in water .....max. 0,05 %  
acidity (as CH<sub>3</sub>COOH) .....max. 0,01 %  
alkalinity (as NaOH) .....max. 0,01 %  
chlorides (Cl) .....max. 0,005 %  
sulfates (SO<sub>4</sub>) .....max. 0,005 %

aluminium (Al) .....max. 0,005 %  
arsenic (As) .....max. 0,0002 %  
calcium and magnesium (as Ca) .....passes test  
heavy metals (as Pb) .....max. 0,001 %  
iron (Fe) .....max. 0,001 %  
potassium (K) .....max. 0,05 %  
zinc (Zn) .....max. 0,0025 %  
substances reducing KMnO<sub>4</sub> .....passes test  
loss on drying (130 °C) .....max. 1 %

Art. No.	Volume	Container
S000320500	500 g	Ø
S000321000	1 kg	Ø
S00032005P	5 kg	Ø
S00032025P	25 kg	Ø

# Sodium

## S00035 Sodium acetate anhydrous, reagent grade, ACS, Reag. Ph Eur

assay (titration with HClO <sub>4</sub> ) . . . . . min. 99,0 %	aluminium (Al) . . . . . max. 0,001 %
identity . . . . . passes test	calcium (Ca) . . . . . max. 0,005 %
appearance of solution (10 %, H <sub>2</sub> O) . . . . . passes test	copper (Cu) . . . . . max. 0,0003 %
insoluble in water . . . . . max. 0,01 %	heavy metals (as Pb) . . . . . max. 0,001 %
pH (5 %, H <sub>2</sub> O) . . . . . 7,0 - 9,2	iron (Fe) . . . . . max. 0,001 %
chlorides (Cl) . . . . . max. 0,002 %	magnesium (Mg) . . . . . max. 0,002 %
phosphates (as PO <sub>4</sub> ) . . . . . max. 0,001 %	potassium (K) . . . . . max. 0,05 %
sulfates (SO <sub>4</sub> ) . . . . . max. 0,003 %	loss on drying (120 °C) . . . . . max. 1,0 %

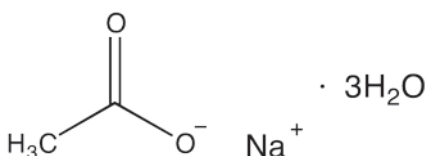
Art. No.	Volume	Container
S000350250	250 g	
S000350500	500 g	
S000351000	1 kg	
S00035005P	5 kg	

## S00036 Sodium acetate anhydrous, molecular biology grade

assay (titration with HClO <sub>4</sub> ) . . . . . min. 99 %	heavy metals (as Pb) . . . . . max. 0,001 %
absorbance of an aqueous solution	DNases, RNases, Proteases . . . . . non detected
0,1 M in a 1 cm cell at 260 nm . . . . . max. 0,01 AU	
absorbance of an aqueous solution	
0,1 M in a 1 cm cell at 280 nm . . . . . max. 0,01 AU	

Art. No.	Volume	Container
S000360500	500 g	
S000361000	1 kg	
S00036005P	5 kg	

## Sodium acetate trihydrate



- Synonyms: Acetic acid sodium salt trihydrate
- CH<sub>3</sub>COONa·3H<sub>2</sub>O
- M = 136,08 g/mol
- CAS [6131-90-4]
- EINECS-No.: 204-823-8
- Solub. in water: (20 °C): 613 g/l
- Melting point: 58 °C
- Boiling point: > 400 °C (anhydrous substance) (decomposes)

- Flash pt. > 250 °C (anhydrous substance)
- Ignition temp.: 607 °C
- LD 50 (oral, rat): 3530 mg/kg (anhydrous substance)
- Tariff number: 2915 29 00 90
- Applications: analytical chemistry, laboratory reagent, in the pharmaceuticals industry, in food industry (E 262), in buffer solutions (for biology).

## S00024 Sodium acetate trihydrate, extra pure, Ph Eur, BP, USP

assay (titration with HClO <sub>4</sub> , on dried sample) . . . . . 99 - 101 %	arsenic (As) . . . . . max. 0,0002 %
identification . . . . . passes test	calcium and magnesium (as Ca) . . . . . max. 0,005 %
appearance of solution (10 %, H <sub>2</sub> O) . . . . . clear and colourless	potassium (K) . . . . . passes test
pH (5 %, H <sub>2</sub> O) . . . . . 7,5 - 9,2	heavy metals (as Pb) . . . . . max. 0,001 %
insoluble in water . . . . . max. 0,05 %	iron (Fe) . . . . . max. 0,001 %
chlorides (Cl) . . . . . max. 0,035 %	reducing substances . . . . . passes test
sulfates (SO <sub>4</sub> ) . . . . . max. 0,002 %	loss on drying (130 °C) . . . . . 38,0 % - 41,0 %
aluminium (Al) . . . . . max. 0,00002 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S000240500	500 g	
S000241000	1 kg	
S00024005P	5 kg	
S00024025P	25 kg	

## S00026 Sodium acetate trihydrate, crystallized, Ph Eur, USP, GMP, suitable for use as excipient

assay (titration with HClO <sub>4</sub> , on dried sample) . . . . . 99 - 101 %	arsenic (As) . . . . . max. 0,0002 %
identification . . . . . passes test	calcium and magnesium (as Ca) . . . . . max. 0,005 %
appearance of solution . . . . . clear and colourless	heavy metals (as Pb) . . . . . max. 0,001 %
insoluble in water . . . . . max. 0,05 %	iron (Fe) . . . . . max. 0,001 %
pH (5 %, H <sub>2</sub> O) . . . . . 7,5 - 9,2	potassium (K) . . . . . passes test
chlorides (Cl) . . . . . max. 0,035 %	reducing substances . . . . . passes test
sulfates (SO <sub>4</sub> ) . . . . . max. 0,02 %	loss on drying (130 °C) . . . . . 38,0 % - 41,0 %
aluminium (Al) . . . . . max. 0,00002 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
S000261000	1 kg	
S00026025P	25 kg	

## S00025 Sodium acetate trihydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (titration with HClO <sub>4</sub> ) . . . . . 99,5 - 101 %	arsenic (As) . . . . . max. 0,0002 %
identity . . . . . passes test	cadmium (Cd) . . . . . max. 0,0005 %
appearance of solution (10 %, H <sub>2</sub> O) . . . . . passes test	calcium (Ca) . . . . . max. 0,001 %
insoluble in water . . . . . max. 0,005 %	copper (Cu) . . . . . max. 0,0003 %
pH (5 %, H <sub>2</sub> O) . . . . . 7,5 - 9,2	heavy metals (as Pb) . . . . . max. 0,0005 %
chlorides (Cl) . . . . . max. 0,0005 %	iron (Fe) . . . . . max. 0,0005 %
phosphates (as PO <sub>4</sub> ) . . . . . max. 0,0002 %	lead (Pb) . . . . . max. 0,0005 %
sulfates (SO <sub>4</sub> ) . . . . . max. 0,002 %	magnesium (Mg) . . . . . max. 0,0005 %
total nitrogen (as N) . . . . . max. 0,001 %	potassium (K) . . . . . max. 0,005 %
aluminium (Al) . . . . . max. 0,0005 %	zinc (Zn) . . . . . max. 0,0005 %

substances reducing KMnO<sub>4</sub> . . . . . passes test  
loss on drying (130 °C) . . . . . 39,0 - 40,5 %

Art. No.	Volume	Container
S000250500	500 g	
S000251000	1 kg	
S00025005P	5 kg	

## S00030 Sodium acetate trihydrate, HPLC grade

assay (titration with HClO <sub>4</sub> ) . . . . . min. 99,5 %	max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength:
identity (IR-spectrum) . . . . . passes test	250 nm . . . . . 0,05 AU
insoluble matter . . . . . passes test	260 nm . . . . . 0,01 AU

Art. No.	Volume	Container
S000300250	250 g	
S000301000	1 kg	

## Sodium azide

## S00091 Sodium azide, extra pure, Reag. Ph Eur



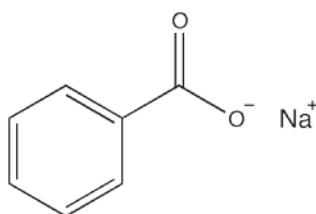
- Synonyms: Hydrazoic acid sodium salt
- $\text{NaN}_3$
- $M = 65,01 \text{ g/mol}$
- CAS [26628-22-8]
- EINECS-No.: 247-852-1
- Solub. in water: (17 °C): 420 g/l
- Melting point: 275 °C (decomposes)
- LD 50 (oral, rat): 45 mg/kg
- EC-Index-No.: 011-004-00-7
- ADR: 6.1 T5 II UN 1687
- IMDG: 6.1 II UN 1687
- IATA/ICAO: 6.1 II UN 1687
- GHS-signal word: Danger
- GHS-H sentences: H300 - EUH032 - H410
- GHS-P sentences: P273 - P264 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2850 00 50 00
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products, preservative agent, salt for azidations, herbicide.

## Specifications:

assay (titration with  $\text{HClO}_4$ ) .....min. 99 %  
 insoluble in water .....max. 0,05 %  
 alkalinity (as  $\text{NaOH}$ ) .....max. 0,1 %  
 chlorides (Cl) .....max. 0,05 %  
 nitrates ( $\text{NO}_3$ ) .....max. 0,05 %  
 sulfates ( $\text{SO}_4$ ) .....max. 0,05 %  
 heavy metals (as Pb) .....max. 0,001 %  
 iron (Fe) .....max. 0,05 %  
 loss on drying .....max. 0,1 %

Art. No.	Volume	Container
S000910100	100 g	P
S000910250	250 g	P
S00091005P	5 kg	P

## Sodium benzoate



- $\text{C}_7\text{H}_5\text{NaO}_2$
- $M = 144,11 \text{ g/mol}$
- CAS [532-32-1]
- EINECS-No.: 208-534-8
- Solub. in water: (20 °C): ~ 660 g/l
- Melting point: 410 - 430 °C
- Flash pt. > 100 °C
- Ignition temp.: > 500 °C
- LD 50 (oral, rat): 3140 mg/kg

- Tariff number: 2916 31 00 90
- Applications: antibiotic, perfumery, in food industry, in the pharmaceuticals industry.

## S00125 Sodium benzoate, synthesis grade

assay (titration with  $\text{HClO}_4$ ) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 water (K.F.) .....max. 1 %

Art. No.	Volume	Container
S001251000	1 kg	P

## S00126 Sodium benzoate, extra pure, Ph Eur, BP, NF

assay (titration with  $\text{HClO}_4$ , on dried sample) ..... 99 - 100,5 %  
 identity (IR-spectrum) .....passes test  
 appearance of solution .....passes test  
 acidity or alkalinity .....passes test  
 halogenated compounds .....max. 0,03 %

heavy metals (as Pb) .....max. 0,001 %  
 loss on drying (105 °C) .....max. 2 %  
 water content .....max. 1,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S001261000	1 kg	P
S00126005P	5 kg	P
S00126025P	25 kg	P

## Sodium borohydride

## S00105 Sodium borohydride, powder, synthesis grade



- Synonyms: Sodium tetrahydroborate
- $\text{NaBH}_4$
- $M = 37,83 \text{ g/mol}$
- CAS [16940-66-2]
- EINECS-No.: 241-004-4
- Solub. in water: (25 °C): 550 g/l (decomposes slowly)
- Melting point: ~ 400 °C (decomposes slowly)
- Flash pt. 69 °C
- Ignition temp.: ~ 220 °C
- LD 50 (oral, rat): 69 mg/kg

- ADR: 4.3 W2 I UN 1426
- IMDG: 4.3 I UN 1426
- IATA/ICAO: 4.3 I UN 1426
- GHS-signal word: Danger
- GHS-H sentences: H260 - H301 - H314
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2850 00 20 90
- Applications: reducing agent, synthesis of organic products.

## Specifications:

assay (iodometric) .....min. 98 %

Art. No.	Volume	Container
S001050100	100 g	P
S001050500	500 g	P
S001051000	1 kg	P

## Sodium bromide

- Synonyms: Bromo sodium
- $\text{NaBr}$
- $M = 102,90 \text{ g/mol}$
- CAS [7647-15-6]

- EINECS-No.: 231-599-9
- Solub. in water: (20 °C): soluble
- Melting point: 755 °C
- Boiling point: 1393 °C

- Vapour pressure: (806 °C) 1,3 hPa
- LD 50 (oral, rat): 3500 mg/kg
- Tariff number: 2827 51 00 00
- Applications: laboratory reagent, photography.

## S00170 Sodium bromide, extra pure, Ph Eur, BP, USP

assay (argentometric, on dried sample) .....98,5 - 100,5 %  
 identification .....passes test  
 appearance of solution .....clear and colourless  
 acidity or alkalinity .....passes test  
 bromates ( $\text{BrO}_3$ ) .....passes test  
 chlorides (Cl) .....max. 0,6 %

iodides (I) .....passes test  
 sulfates ( $\text{SO}_4$ ) .....max. 0,01 %  
 heavy metals (as Pb) .....max. 0,001 %  
 iron (Fe) .....max. 0,002 %  
 magnesium and alkaline-earth metals (as Ca) .....max. 0,02 %  
 loss on drying (105 °C) .....max. 3 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S001700500	500 g	P
S001701000	1 kg	P

# Sodium

## S00171 Sodium bromide, reagent grade, ACS, Reag. Ph Eur

assay (argentometric) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) . . . . .5,0 - 8,8  
 bromates (BrO<sub>3</sub>) . . . . .max. 0,001 %  
 chlorides (Cl) . . . . .max. 0,2 %  
 iodides (I) . . . . .max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,002 %  
 total nitrogen (as N) . . . . .max. 0,0005 %  
 aluminium (Al) . . . . .max. 0,000005 %

arsenic (As) . . . . .max. 0,0002 %  
 barium (Ba) . . . . .max. 0,002 %  
 calcium (Ca) . . . . .max. 0,002 %  
 copper (Cu) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0003 %  
 lead (Pb) . . . . .max. 0,0005 %  
 magnesium (Mg) . . . . .max. 0,001 %  
 nickel (Ni) . . . . .max. 0,0005 %

potassium (K) . . . . .max. 0,1 %

Art. No.	Volume	Container
S001710250	250 g	Ⓔ
S001710500	500 g	Ⓔ
S001711000	1 kg	Ⓔ

## Sodium carbonate anhydrous

- Synonyms: Anhydrous soda
- Na<sub>2</sub>CO<sub>3</sub>
- M = 105,99 g/mol
- CAS [497-19-8]
- EINECS-No.: 207-838-8
- Solub. in water: (20 °C): 220 g/l
- Melting point: 854 °C

- Boiling point: 1600 °C (decomposes)
- LD 50 (oral, rat): 4090 mg/kg
- EC-Index-No.: 011-005-00-2
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313

- Tariff number: 2836 20 00 00
- Applications: analytical chemistry, laboratory reagent, to make sodium salts, manufacture of glass, detergent, in the textile industry, photography, in the pharmaceuticals industry, in food industry (E 500).

## S00115 Sodium carbonate anhydrous, extra pure, Pharmpur®, Ph Eur, BP, NF

assay (acidimetric, on dried sample) . . . . .99,5 - 100,5 %  
 identification . . . . .passes test  
 appearance of solution . . . . .passes test  
 alkalihydroxides and  
 alkalihydrogencarbonates . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,0125 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,025 %

arsenic (As) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,005 %  
 iron (Fe) . . . . .max. 0,005 %  
 lead (Pb) . . . . .max. 0,005 %  
 water content . . . . .12 - 15 %  
 loss on drying (300 °C) . . . . .max. 1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S001150500	500 g	Ⓔ
S001151000	1 kg	Ⓔ
S00115005P	5 kg	Ⓔ
S00115025P	25 kg	Ⓔ

## S00116 Sodium carbonate anhydrous, reagent grade, ACS, ISO, Reag. Ph Eur

assay (acidimetric, on dried sample) . . . . .min. 99,8 %  
 insoluble in water . . . . .max. 0,01 %  
 chlorides (Cl) . . . . .max. 0,001 %  
 phosphates (as PO<sub>4</sub>) . . . . .max. 0,001 %  
 silicates (SiO<sub>2</sub>) . . . . .max. 0,005 %  
 total nitrogen (as N) . . . . .max. 0,001 %  
 aluminium (Al) . . . . .max. 0,001 %  
 arsenic (As) . . . . .max. 0,0001 %  
 calcium (Ca) . . . . .max. 0,005 %

heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0005 %  
 lead (Pb) . . . . .max. 0,0005 %  
 magnesium (Mg) . . . . .max. 0,0005 %  
 potassium (K) . . . . .max. 0,005 %  
 ammonium hydroxide precipitate . . . . .max. 0,01 %  
 sulphur compounds (as SO<sub>4</sub>) . . . . .max. 0,003 %  
 substances precipitable by Ca and Mg . . . . .max. 0,01 %  
 loss on drying (300 °C) . . . . .max. 1 %

Art. No.	Volume	Container
S001160500	500 g	Ⓔ
S001161000	1 kg	Ⓔ
S00116005P	5 kg	Ⓔ
S00116025P	25 kg	Ⓔ

## Sodium carbonate decahydrate

- Synonyms: Soda decahydrate
- Na<sub>2</sub>CO<sub>3</sub>·10H<sub>2</sub>O
- M = 286,14 g/mol
- CAS [6132-02-1]
- EINECS-No.: 207-838-8
- Solub. in water: (20 °C): ~ 210 g/l

- Melting point: 33 °C
- LD 50 (oral, rat): 4090 mg/kg (anhydrous substance)
- EC-Index-No.: 011-005-00-2
- GHS-signal word: Warning
- GHS-H sentences: H319

- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2836 20 00 00
- Applications: analytical chemistry, laboratory reagent, for pharmaceuticals synthesizing, in food industry (E 500), in the textile industry, whitener agent.

## S00117 Sodium carbonate decahydrate, extra pure, Pharmpur®, Ph Eur, BP

assay (acidimetric, as Na<sub>2</sub>CO<sub>3</sub>) . . . . .36,7 - 40,0 %  
 identification . . . . .passes test  
 appearance of solution . . . . .passes test  
 alkalihydroxides and  
 alkalihydrogencarbonates . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,005 %

sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %  
 arsenic (As) . . . . .max. 0,0002 %  
 heavy metals (as Pb) . . . . .max. 0,002 %  
 iron (Fe) . . . . .max. 0,002 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S001170500	500 g	Ⓔ
S001171000	1 kg	Ⓔ
S00117005P	5 kg	Ⓔ
S00117025P	25 kg	Ⓔ

## S00118 Sodium carbonate decahydrate, reagent grade, ISO, Reag. Ph Eur

assay (acidimetric) . . . . .99 - 102 %  
 appearance of solution . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,001 %  
 phosphates and silicates (as  
 SiO<sub>2</sub>) . . . . .max. 0,003 %  
 total nitrogen (as N) . . . . .max. 0,0005 %  
 total sulphur (as SO<sub>4</sub>) . . . . .max. 0,003 %  
 aluminium (Al) . . . . .max. 0,0005 %

arsenic (As) . . . . .max. 0,0002 %  
 calcium (Ca) . . . . .max. 0,002 %  
 copper (Cu) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0002 %  
 lead (Pb) . . . . .max. 0,0002 %  
 magnesium (Mg) . . . . .max. 0,0002 %  
 potassium (K) . . . . .max. 0,005 %

zinc (Zn) . . . . .max. 0,0005 %

Art. No.	Volume	Container
S001180500	500 g	Ⓔ
S001181000	1 kg	Ⓔ
S00118005P	5 kg	Ⓔ

## Sodium carbonate, saturated solution

### S00123 Sodium carbonate, saturated solution

- Na<sub>2</sub>CO<sub>3</sub>
- M = 105,99 g/mol
- CAS [497-19-8]
- EINECS-No.: 207-838-8
- EC-Index-No.: 011-005-00-2
- GHS-signal word: Warning

- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2836 20 00 00
- Applications: laboratory reagent, analytical chemistry, photography.

**Specifications:**  
 composition: 210 g Na<sub>2</sub>CO<sub>3</sub> / 1 liter of H<sub>2</sub>O

Art. No.	Volume	Container
S001231000	1 l	Ⓔ

## Sodium carbonate, volumetric solutions

## S00050 Sodium carbonate, solution 0,5 mol/l (1 N)

- Na<sub>2</sub>CO<sub>3</sub>
- M = 105,99 g/mol
- CAS [497-19-8]
- EINECS-No.: 207-838-8
- Density: 1,05 g/cm<sup>3</sup>
- EC-Index-No.: 011-005-00-2
- GHS-H sentences: EUH210
- Tariff number: 2836 20 00 00
- Applications: analytical chemistry, laboratory reagent.

## Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001  
1 ml = 0,05299 g Na<sub>2</sub>CO<sub>3</sub>. This volumetric solution was checked by means of potentiometric methods using an hydrochloric acid standard solution, that was also checked against Scharlau's tris(hydroxymethyl)-aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S000501000	1 l	
S00050005P	5 l	
S00050010C	10 l	

## S00051 Sodium carbonate, solution 0,05 mol/l (0,1 N)

- Na<sub>2</sub>CO<sub>3</sub>
- M = 105,99 g/mol
- CAS [497-19-8]
- EINECS-No.: 207-838-8
- Density: ~ 1,1 g/cm<sup>3</sup>
- EC-Index-No.: 011-005-00-2
- Tariff number: 2836 20 00 00
- Applications: analytical chemistry, laboratory reagent.

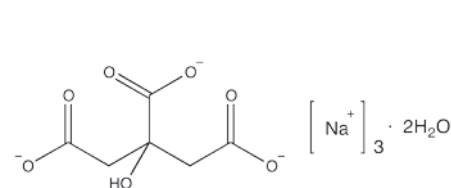
uncertainty ± 0,001  
1 ml = 0,005299 g Na<sub>2</sub>CO<sub>3</sub>. This volumetric solution was checked by means of potentiometric methods using a hydrochloric acid standard solution, that was also checked against Scharlau's tris(hydroxymethyl)-aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S000511000	1 l	

## Specifications:

factor . . . . . 0,999 - 1,001

## tri-Sodium citrate dihydrate



- C<sub>6</sub>H<sub>5</sub>Na<sub>3</sub>O<sub>7</sub>·2H<sub>2</sub>O
- M = 294,10 g/mol
- CAS [6132-04-3]
- EINECS-No.: 200-675-3
- Solub. in water: (25 °C): 425 g/l
- Melting point: 150 °C (anhydrous substance)
- Tariff number: 2918 15 00 10

- Applications: analytical chemistry, in buffer solutions, for the analysis of: aminoacids, in food industry (E-331), emulsifier, antioxidant, preservative agent.

## S00199 tri-Sodium citrate dihydrate, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (titration with HClO<sub>4</sub>, on dried sample) . . . . . 99,0 - 100,5 %  
identification . . . . . passes test  
appearance of solution . . . . . clear and colourless  
acidity or alkalinity . . . . . passes test  
chlorides (Cl) . . . . . max. 0,005 %  
oxalates (C<sub>2</sub>O<sub>4</sub>) . . . . . max. 0,03 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,015 %  
tartrates (C<sub>4</sub>O<sub>6</sub>) . . . . . passes test  
heavy metals (as Pb) . . . . . max. 0,001 %  
substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
water (K.F.) . . . . . 10 - 13 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S001990500	500 g	
S001991000	1 kg	
S00199005P	5 kg	
S00199025P	25 kg	

## S00201 tri-Sodium citrate dihydrate, granular, Pharmpur®, Ph Eur, USP, GMP, suitable for use as excipient

assay (titration with HClO<sub>4</sub>, on dried sample) . . . . . 99,5 - 101,0 %  
identification . . . . . passes test  
appearance of solution . . . . . clear and colourless  
acidity or alkalinity . . . . . passes test  
readily carbonizable substances . . . . . passes test  
chlorides (Cl) . . . . . max. 0,005 %  
oxalates (C<sub>2</sub>O<sub>4</sub>) . . . . . max. 0,03 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,015 %  
tartrates (C<sub>4</sub>O<sub>6</sub>) . . . . . passes test  
heavy metals (as Pb) . . . . . max. 0,001 %  
water content . . . . . 10 - 13 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
S002011000	1 kg	
S00201025P	25 kg	

## S00200 tri-Sodium citrate dihydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (titration with HClO<sub>4</sub>) . . . . . min. 99,5 %  
identity . . . . . passes test  
appearance of solution . . . . . passes test  
insoluble in water . . . . . max. 0,005 %  
pH (5 %, H<sub>2</sub>O) . . . . . 7,5 - 9,0  
acidity or alkalinity . . . . . passes test  
chlorides (Cl) . . . . . max. 0,001 %  
oxalates (C<sub>2</sub>O<sub>4</sub>) . . . . . max. 0,03 %  
phosphates (as PO<sub>4</sub>) . . . . . max. 0,002 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,004 %

total nitrogen (as N) . . . . . max. 0,001 %  
ammonium (NH<sub>4</sub>) . . . . . max. 0,003 %  
calcium (Ca) . . . . . max. 0,005 %  
copper (Cu) . . . . . max. 0,0005 %  
heavy metals (as Pb) . . . . . max. 0,0005 %  
iron (Fe) . . . . . max. 0,0005 %  
lead (Pb) . . . . . max. 0,0002 %  
zinc (Zn) . . . . . max. 0,0005 %  
substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
water (K.F.) . . . . . 11 - 13 %

Art. No.	Volume	Container
S002000250	250 g	
S002000500	500 g	
S002001000	1 kg	
S00200005P	5 kg	
S00200025P	25 kg	

## S00205 tri-Sodium citrate dihydrate, molecular biology grade

assay (titration with HClO<sub>4</sub>) . . . . . min. 99,5 %  
absorbance of an aqueous solution  
0,1 M in a 1 cm cell at 260 nm . . . . . max. 0,01 AU  
absorbance of an aqueous solution

0,1 M in a 1 cm cell at 280 nm . . . . . max. 0,01 AU  
heavy metals (as Pb) . . . . . max. 0,001 %  
DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
S002051000	1 kg	

# Sodium

## Sodium cyanide

### S00190 Sodium cyanide, extra pure



- NaCN
- M = 49,01 g/mol
- CAS [143-33-9]
- EINECS-No.: 205-599-4
- Solub. in water: (20 °C): 370 g/l
- Melting point: 563 °C
- Boiling point: 1496 °C
- Vapour pressure: (50 °C) 0,1 hPa
- LD 50 (oral, rat): 6,4 mg/kg
- EC-Index-No.: 006-007-00-5
- ADR: 6.1 T5 I UN 1689
- IMDG: 6.1 I UN 1689
- IATA/ICAO: 6.1 I UN 1689
- GHS-signal word: Danger
- GHS-H sentences: H300 - EUH032 - H310 - H330 - H410

- GHS-P sentences: P301 + P310 - P310 - P320 - P361 - P405 - P501a
- Tariff number: 2837 11 00 00
- Applications: for the extraction of gold and silver from minerals, laboratory reagent, fumigant, in galvanotechnology.

copper (Cu) .....max. 0,002 %  
 iron (Fe) .....max. 0,01 %  
 lead (Pb) .....max. 0,001 %  
 potassium (K) .....max. 0,2 %  
 zinc (Zn) .....max. 0,02 %

#### Specifications:

assay (argentometric) .....min. 98 %  
 insoluble in water .....max. 0,01 %  
 chlorides (Cl) .....max. 0,025 %  
 ferrocyanide (Fe(CN)<sub>6</sub>) .....max. 0,025 %  
 phosphates (as PO<sub>4</sub>) .....max. 0,01 %  
 sulfates (SO<sub>4</sub>) .....max. 0,025 %  
 sulfides (S) .....max. 0,003 %  
 sulfocyanides (SCN) .....max. 0,05 %

Art. No.	Volume	Container
S001900250	250 g	Ⓒ
S001901000	1 kg	Ⓒ
S00190005P	5 kg	Ⓕ
S00190025P	25 kg	Ⓕ

## Sodium chlorate

- NaClO<sub>3</sub>
- M = 106,44 g/mol
- CAS [7775-09-9]
- EINECS-No.: 231-887-4
- Solub. in water: (20 °C): soluble
- Melting point: 255 °C (decomposes)
- LD 50 (oral, rat): 1200 mg/kg

- EC-Index-No.: 017-005-00-9
- ADR: 5.1 O2 II UN 1495
- IMDG: 5.1 II UN 1495
- IATA/ICAO: 5.1 II UN 1495
- GHS-signal word: Danger
- GHS-H sentences: H271 - H302 - H411

- GHS-P sentences: P221 - P283 - P210 - P306 + P360 - P371 + P380 + P375 - P501a
- Tariff number: 2829 11 00 00
- Applications: laboratory reagent, oxidizing, manufacture of dyes, in explosive compositions, cosmetics, herbicide, in the pharmaceuticals industry (oxidizing agent).

### S00210 Sodium chlorate, pure



assay (argentometric) .....min. 98 %  
 chlorides (Cl) .....max. 0,1 %  
 sulfates (SO<sub>4</sub>) .....max. 0,01 %  
 heavy metals (as Pb) .....max. 0,005 %  
 iron (Fe) .....max. 0,005 %

Art. No.	Volume	Container
S002100500	500 g	Ⓒ
S002101000	1 kg	Ⓒ
S00210005P	5 kg	Ⓕ
S00210025P	25 kg	Ⓕ

### S00213 Sodium chlorate, reagent grade, ACS



assay (argentometric) .....min. 99 %  
 insoluble in water .....max. 0,005 %  
 bromates (BrO<sub>3</sub>) .....max. 0,015 %  
 chlorides (Cl) .....max. 0,005 %  
 sulfates (SO<sub>4</sub>) .....max. 0,001 %  
 total nitrogen (as N) .....max. 0,001 %

calcium (Ca) .....max. 0,002 %  
 iron (Fe) .....max. 0,0005 %  
 heavy metals (as Pb) .....max. 0,001 %  
 magnesium (Mg) .....max. 0,002 %  
 potassium (K) .....max. 0,01 %

Art. No.	Volume	Container
S002130500	500 g	Ⓒ
S002131000	1 kg	Ⓒ

## Sodium chloride

- Synonyms: Salt, Common salt, Rock salt, Sea salt
- NaCl
- M = 58,44 g/mol
- CAS [7647-14-5]
- EINECS-No.: 231-598-3

- Solub. in water: (20 °C): 358 g/l
- Melting point: 801 °C
- Boiling point: 1461 °C
- Vapour pressure: (865 °C) 1,3 hPa
- LD 50 (oral, rat): 3000 mg/kg

- Tariff number: 2501 00 31 00
- Applications: analytical chemistry, laboratory reagent, to make sodium salts, in food industry, for decreasing the melting point of water.

### S00224 Sodium chloride, synthesis grade

assay (argentometric) .....min. 99 %  
 insoluble in water .....max. 0,1 %  
 acidity (as HCl) .....max. 0,05 %  
 bromides (Br) .....max. 0,1 %  
 sulfates (SO<sub>4</sub>) .....max. 0,1 %

ammonium (NH<sub>4</sub>) .....max. 0,1 %  
 potassium (K) .....max. 0,2 %

Art. No.	Volume	Container
S002241000	1 kg	Ⓒ
S00224005P	5 kg	Ⓕ
S00224025P	25 kg	Ⓕ

### S00225 Sodium chloride, extra pure, Pharmapur®, Ph Eur, BP, USP

assay (argentometric, on dried sample) .....99,0 - 100,5 %  
 identification .....passes test  
 appearance of solution .....clear and colourless  
 acidity or alkalinity .....passes test  
 bromides (Br) .....max. 0,01 %  
 iodides (I) .....passes test  
 nitrites (absorbance of an aqueous solution 10% at 354 nm) .....max. 0,01 AU  
 ferrocyanide (Fe(CN)<sub>6</sub>) .....passes test

phosphates (as PO<sub>4</sub>) .....max. 0,0025 %  
 sulfates (SO<sub>4</sub>) .....max. 0,02 %  
 aluminium (Al) .....max. 0,00002 %  
 arsenic (As) .....max. 0,0001 %  
 barium (Ba) .....passes test  
 heavy metals (as Pb) .....max. 0,0005 %  
 iron (Fe) .....max. 0,0002 %  
 magnesium and alkaline-earth metals (as Ca) .....max. 0,01 %  
 loss on drying (105 °C, 2 h) .....max. 0,5 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S002250500	500 g	Ⓒ
S002251000	1 kg	Ⓒ
S00225005P	5 kg	Ⓕ
S00225025P	25 kg	Ⓕ

**S00236 Sodium chloride, crystallized, Pharmpur®, Ph Eur, USP, GMP, suitable for use as excipient**

assay (argentometric, on dried sample) . . . . . 99,0 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 acidity or alkalinity . . . . . passes test  
 bromides (Br) . . . . . max. 0,01 %  
 ferrocyanide (Fe(CN)<sub>6</sub>) . . . . . passes test  
 iodides (I) . . . . . passes test  
 nitrites (NO<sub>2</sub>) . . . . . passes test  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,0025 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,02 %  
 aluminium (Al) . . . . . max. 0,0002 %  
 arsenic (As) . . . . . max. 0,0001 %  
 barium (Ba) . . . . . passes test  
 iron (Fe) . . . . . max. 0,0002 %  
 magnesium and alkaline-earth metals  
 (as Ca) . . . . . max. 0,01 %  
 potassium (K) . . . . . max. 0,05 %  
 loss on drying (105 °C, 2 h) . . . . . max. 0,5 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
 Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
S002361000	1 kg	
S00236025P	25 kg	

**S00227 Sodium chloride, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (argentometric) . . . . . min. 99,5 %  
 identity . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 5,0 - 8,0  
 acidity or alkalinity . . . . . passes test  
 bromides (Br) . . . . . max. 0,005 %  
 chlorates and nitrates (as  
 NO<sub>3</sub>) . . . . . max. 0,003 %  
 ferricyanide . . . . . passes test  
 ferrocyanide (Fe(CN)<sub>6</sub>) . . . . . max. 0,0001 %

iodides (I) . . . . . max. 0,001 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,0005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,001 %  
 total nitrogen (as N) . . . . . max. 0,0005 %  
 arsenic (As) . . . . . max. 0,00004 %  
 barium (Ba) . . . . . max. 0,001 %  
 calcium (Ca) . . . . . max. 0,002 %  
 copper (Cu) . . . . . max. 0,0002 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0001 %  
 magnesium (Mg) . . . . . max. 0,001 %

nickel (Ni) . . . . . max. 0,0005 %  
 potassium (K) . . . . . max. 0,005 %  
 loss on drying (105 °C, 2 h) . . . . . max. 0,5 %

Art. No.	Volume	Container
S002270500	500 g	
S002271000	1 kg	
S00227005P	5 kg	
S00227025P	25 kg	

**S00234 Sodium chloride, secondary standard for volumetric titrations, Titrasure®**

assay (on dried sample) . . . . . 99,0 %  
 insoluble in water . . . . . max. 0,005 %  
 pH (5 %, H<sub>2</sub>O, 25 °C) . . . . . 5,0 - 9,0  
 bromides (Br) . . . . . max. 0,01 %  
 chlorates and nitrates (as  
 NO<sub>3</sub>) . . . . . max. 0,003 %

iodides (I) . . . . . max. 0,002 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,0005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,004 %  
 barium (Ba) . . . . . passes test  
 calcium (Ca) . . . . . max. 0,002 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %

iron (Fe) . . . . . max. 0,0002 %  
 magnesium (Mg) . . . . . max. 0,001 %  
 potassium (K) . . . . . max. 0,005 %

Art. No.	Volume	Container
S002340100	100 g	

**S00230 Sodium chloride, molecular biology grade**

assay (argentometric) . . . . . min. 99,5 %  
 absorbance of an aqueous solution  
 0,1 M in a 1 cm cell at 260 nm . . . . . max. 0,01 AU  
 absorbance of an aqueous solution  
 0,1 M in a 1 cm cell at 280 nm . . . . . max. 0,01 AU

heavy metals (as Pb) . . . . . max. 0,001 %  
 DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
S002300500	500 g	
S002301000	1 kg	
S00230005P	5 kg	

**S00226 Sodium chloride, for climatic chambers**

assay (argentometric, on dried  
 sample) . . . . . 99,0 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 pH (5 %, H<sub>2</sub>O) . . . . . 5,0 - 7,5  
 acidity or alkalinity . . . . . passes test  
 hexacyanoferrate [Fe(CN)<sub>6</sub>] . . . . . max. 0,0001 %  
 nitrites (absorbance of an aqueous  
 solution 10% at 354 nm) . . . . . max. 0,01 AU  
 ferrocyanide (Fe(CN)<sub>6</sub>) . . . . . passes test  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,0025 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,02 %  
 halides (bromides, fluorides, iodides) . . . . . max. 0,1 %  
 aluminium (Al) . . . . . max. 0,0002 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,001 %  
 arsenic (As) . . . . . max. 0,0001 %  
 barium (Ba) . . . . . passes test  
 calcium (Ca) . . . . . max. 0,002 %  
 copper (Cu) . . . . . max. 0,00003 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0002 %  
 magnesium (Mg) . . . . . max. 0,001 %

magnesium and alkaline-earth metals  
 (as Ca) . . . . . max. 0,01 %  
 potassium (K) . . . . . max. 0,05 %  
 nickel (Ni) . . . . . max. 0,001 %  
 loss on drying (105 °C, 2 h) . . . . . max. 0,5 %

Art. No.	Volume	Container
S002261000	1 kg	
S00226005P	5 kg	

**Sodium chloride, thick salt****S00228 Sodium chloride, thick salt, synthesis grade**

- Synonyms: Salt, Common salt, Rock salt, Sea salt
- NaCl
- M = 58,44 g/mol
- CAS [7647-14-5]
- EINECS-No.: 231-598-3
- Solub. in water: (20 °C): 358 g/l
- Melting point: 801 °C
- Boiling point: 1461 °C

- Tariff number: 2501 00 31 00
- Applications: analytical chemistry, laboratory reagent, to make sodium salts, in food industry, for decreasing the melting point of water.

**Specifications:**

assay (argentometric) . . . . . min. 98 %

Art. No.	Volume	Container
S002280500	500 g	
S002281000	1 kg	
S00228005P	5 kg	
S00228025P	25 kg	

**Sodium chloride, saturated solution****S00233 Sodium chloride, saturated solution**

- Synonyms: Salt, Common salt, Rock salt, Sea salt; saturated solution
- NaCl
- M = 58,44 g/mol
- CAS [7647-14-5]
- EINECS-No.: 231-598-3

- Tariff number: 3822 00 00 00
  - Applications: laboratory reagent.
- Specifications:**  
 composition: 300 g NaCl / 1 liter of H<sub>2</sub>O

Art. No.	Volume	Container
S002331000	1 l	

# Sodium

## Sodium chloride, volumetric solutions

### S00229 Sodium chloride, solution 0,1 mol/l (0,1 N)

- NaCl
- M = 58,44 g/mol
- CAS [7647-14-5]
- EINECS-No.: 231-598-3
- Density: 1,004 g/cm<sup>3</sup>
- Tariff number: 3822 00 00 00
- Applications: laboratory reagent.

uncertainty ± 0,001  
1 ml = 0,005844 g NaCl This volumetric solution was checked by means of potentiometric methods using a silver nitrate standard solution, that was also checked against Scharlau's potassium chloride volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S002291000	1 l	Ⓒ

#### Specifications:

factor . . . . . 0,999 - 1,001

### S00231 Sodium chloride, concentrated solution to prepare 1 l of solution 0,1 mol/l (0,1N)

- NaCl
- M = 58,44 g/mol
- CAS [7647-14-5]
- EINECS-No.: 231-598-3
- Density: 1,08 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible

- Tariff number: 3822 00 00 00
- Applications: laboratory reagent.

**Specifications:**  
amount of substance: 5,844 g NaCl  
concentrated solution . . . . . 1 mol/l ± 0,1 %

Art. No.	Volume	Container
S0023100PA	u.	Ⓒ

## Sodium chromate

### S00250 Sodium chromate, reagent grade



- Na<sub>2</sub>CrO<sub>4</sub>
- M = 161,97 g/mol
- CAS [7775-11-3]
- EINECS-No.: 231-889-5
- Solub. in water: (30 °C): 873 g/l
- Melting point: ~ 792 °C
- LD 50 (oral, rat): 136 mg/kg
- EC-Index-No.: 024-018-00-3
- ADR: 6.1 T5 II UN 3288
- IMDG: 6.1 II UN 3288
- IATA/ICAO: 6.1 II UN 3288
- GHS-signal word: Danger

- GHS-H sentences: H301 - H330 - H334 - H340 - H350 - H360FD - H372 - H314 - H410 - H312 - H317
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: analytical chemistry, laboratory reagent, in the textile industry, protection of iron against corrosion and rusting.

pH (5 %, H<sub>2</sub>O) . . . . . 8,6 - 9,8  
chlorides (Cl) . . . . . max. 0,005 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,05 %  
aluminium (Al) . . . . . max. 0,003 %  
calcium (Ca) . . . . . max. 0,005 %  
copper (Cu) . . . . . max. 0,001 %  
iron (Fe) . . . . . max. 0,002 %  
lead (Pb) . . . . . max. 0,005 %  
potassium (K) . . . . . max. 0,02 %

**Specifications:**  
assay (iodometric) . . . . . min. 99,5 %  
insoluble in water . . . . . max. 0,01 %

Art. No.	Volume	Container
S002500500	500 g	Ⓒ
S002501000	1 kg	Ⓒ

## Sodium chromate tetrahydrate

### S00255 Sodium chromate tetrahydrate, extra pure



- Na<sub>2</sub>CrO<sub>4</sub>·4H<sub>2</sub>O
- M = 234,03 g/mol
- CAS [10034-82-9]
- EINECS-No.: 231-889-5
- Solub. in water: (20 °C): 443 g/l
- Melting point: ~ 792 °C
- EC-Index-No.: 024-018-00-3
- ADR: 6.1 TC4 I UN 3290
- IMDG: 6.1 I UN 3290
- IATA/ICAO: 6.1 I UN 3290
- GHS-signal word: Danger

- GHS-H sentences: H301 - H330 - H334 - H340 - H350 - H360 - H372 - H314 - H410 - H317
- GHS-P sentences: P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: laboratory reagent, analytical chemistry.

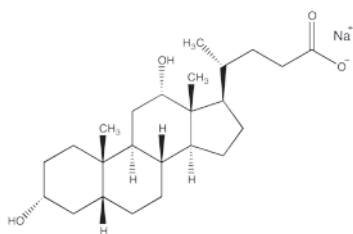
chlorides (Cl) . . . . . max. 0,01 %  
sulfates (SO<sub>4</sub>) . . . . . max. 0,02 %  
aluminium (Al) . . . . . max. 0,005 %  
copper (Cu) . . . . . max. 0,001 %  
calcium (Ca) . . . . . max. 0,005 %  
iron (Fe) . . . . . max. 0,002 %

**Specifications:**  
assay (iodometric) . . . . . min. 99 %  
insoluble in water . . . . . max. 0,01 %

Art. No.	Volume	Container
S002550500	500 g	Ⓒ
S002551000	1 kg	Ⓒ

## Sodium deoxycholate

### S00257 Sodium deoxycholate, for microbiology



- Synonyms: Desoxycholic acid, sodium salt, 3α,12α-Dihydroxy-5β-cholanic acid, sodium salt
- C<sub>24</sub>H<sub>39</sub>NaO<sub>4</sub>
- M = 414,55 g/mol
- CAS [302-95-4]
- EINECS-No.: 206-132-7
- Melting point: 357 - 365 °C
- LD 50 (oral, rat): 1370 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2918 19 30 00

**Specifications:**  
assay (HPLC) . . . . . min. 98 %  
sodium cholate . . . . . max. 2 %  
pH (2 %, H<sub>2</sub>O) . . . . . 7,5 - 9,5  
heavy metals (as Pb) . . . . . max. 0,002 %  
loss on drying (105 °C) . . . . . max. 5 %  
suitability for microbiology . . . . . passes test

Art. No.	Volume	Container
S002570100	100 g	Ⓒ
S002570500	500 g	Ⓒ



## Sodium dichromate dihydrate

## S00260 Sodium dichromate dihydrate, reagent grade, ACS



- Synonyms: Sodium bichromate, Sodium pyrochromate
- $\text{Na}_2\text{Cr}_2\text{O}_7 \cdot 2\text{H}_2\text{O}$
- $M = 298,00 \text{ g/mol}$
- CAS [7789-12-0]
- EINECS-No.: 234-190-3
- Solub. in water: (20 °C): 731,8 g/l
- Melting point: 356,7 °C (anhydrous substance)
- Boiling point: 400 °C (decomposes)
- LD 50 (oral, rat): 50 mg/kg
- EC-Index-No.: 024-004-01-4
- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288
- IATA/ICAO: 6.1 III UN 3288
- GHS-signal word: Danger

- GHS-H sentences: H272 - H301 - H330 - H334 - H340 - H350 - H360FD - H372 - H314 - H410 - H312 - H317
- GHS-P sentences: P221 - P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P320 - P405 - P501a
- Tariff number: 2841 30 00 00
- Applications: analytical chemistry, laboratory reagent, oxidizing agent (manufacture of dyes), starting material for synthesis of chromic acid and other chromates.
- Appearance: Orange solid

**Specifications:**

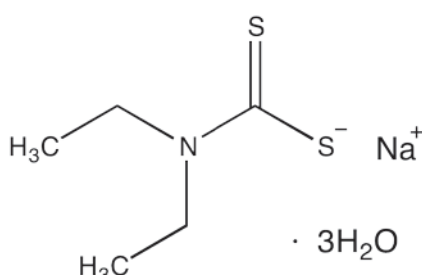
assay (iodometric) . . . . . 99,5 - 100,5 %  
 identity . . . . . passes test  
 insoluble in water . . . . . max. 0,005 %

ammonium hydroxide precipitate . . . . . max. 0,005 %  
 chlorides (Cl) . . . . . max. 0,002 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,01 %  
 aluminium (Al) . . . . . max. 0,002 %  
 calcium (Ca) . . . . . max. 0,002 %  
 copper (Cu) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,002 %  
 lead (Pb) . . . . . max. 0,002 %  
 magnesium (Mg) . . . . . max. 0,005 %  
 potassium (K) . . . . . max. 0,01 %

Art. No.	Volume	Container
S002600500	500 g	
S002601000	1 kg	
S00260005P	5 kg	

## Sodium diethyldithiocarbamate trihydrate

## S00270 Sodium diethyldithiocarbamate trihydrate, reagent grade, ACS



- Synonyms: Diethyldithiocarbamic acid sodium salt trihydrate
- $\text{C}_5\text{H}_{10}\text{NNaS}_2 \cdot 3\text{H}_2\text{O}$
- $M = 225,31 \text{ g/mol}$
- CAS [20624-25-3]
- EINECS-No.: 205-710-6
- Solub. in water: (20 °C): 600 g/l
- Melting point: ~ 93 °C
- LD 50 (oral, rat): 1500 mg/kg (anhydrous substance)
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2930 20 00 00

- Applications: analytical chemistry, laboratory reagent (noble metals), precipitant for: metal ions traces.

**Specifications:**

assay (titration with  $\text{HClO}_4$ ) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 solubility in water . . . . . passes test  
 iron (Fe) . . . . . max. 0,0001 %  
 sodium (as  $\text{Na}_2\text{SO}_4$ ) . . . . . 30,5 - 32,5 %  
 sensitivity as reagent for copper . . . . . passes test

Art. No.	Volume	Container
S002700100	100 g	
S002700250	250 g	

## Sodium dihydrogen phosphate anhydrous

## S00330 Sodium dihydrogen phosphate anhydrous, extra pure, Pharmpur®, BP, USP

- Synonyms: Sodium biphosphate, Sodium phosphate monobasic
- $\text{NaH}_2\text{PO}_4$
- $M = 120,0 \text{ g/mol}$
- CAS [7558-80-7]
- EINECS-No.: 231-449-2
- Solub. in water: (20 °C): 850 g/l
- Melting point: 200 °C
- LD 50 (oral, rat): 8290 mg/kg
- Tariff number: 2835 22 00 00
- Applications: analytical chemistry, laboratory reagent, in food industry (E 339), in pharma industry.

**Specifications:**

assay (acidimetric, on dried sample) . . . . . 98 - 103 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 insoluble in water . . . . . max. 0,2 %  
 pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 4,1 - 4,5  
 acidity . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,03 %  
 aluminium, calcium and related elements . . . . . passes test  
 arsenic (As) . . . . . max. 0,0008 %  
 heavy metals (as Pb) . . . . . max. 0,002 %

iron (Fe) . . . . . max. 0,001 %  
 reducing substances . . . . . passes test  
 loss on drying (130 °C) . . . . . max. 1 %  
 water (K.F.) . . . . . max. 2 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S003300500	500 g	
S003301000	1 kg	
S00330025P	25 kg	

## Sodium dihydrogen phosphate dihydrate

- Synonyms: Sodium biphosphate, Monosodium orthophosphate, Primary sodium phosphate, Sodium phosphate monobasic
- $\text{NaH}_2\text{PO}_4 \cdot 2\text{H}_2\text{O}$
- $M = 156,01 \text{ g/mol}$

- CAS [13472-35-0]
- EINECS-No.: 231-449-2
- Solub. in water: (20 °C): 850 g/l
- Melting point: 60 °C
- LD 50 (oral, rat): 8290 mg/kg (anhydrous substance)

- Tariff number: 2835 22 00 00
- Applications: analytical chemistry, laboratory reagent, for pharmaceuticals synthesizing, in food industry (E 339).

## S00334 Sodium dihydrogen phosphate dihydrate, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (acidimetric, on dried sample) . . . . . 98 - 103 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 insoluble matter . . . . . max. 0,2 %  
 pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 4,1 - 4,5  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,03 %  
 arsenic (As) . . . . . max. 0,0008 %  
 aluminium, calcium and related

elements . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,001 %  
 reducing substances . . . . . passes test  
 water content . . . . . 18 - 26,5 %  
 loss on drying (130 °C) . . . . . 21,5 - 24,0 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S003340500	500 g	
S003341000	1 kg	
S00334005P	5 kg	
S00334025P	25 kg	

# Sodium

## S00332 Sodium dihydrogen phosphate dihydrate, reagent grade, Reag. Ph Eur

assay (acidimetric) . . . . . min. 99 %  
 identity . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble in water (on dried sample) . . . . . max. 0,15 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 4,2 - 4,5  
 chlorides (Cl) . . . . . max. 0,005 %  
 fluorides (F) . . . . . max. 0,001 %  
 hydrogenphosphates (HPO<sub>4</sub>) . . . . . max. 0,5 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %  
 arsenic (As) . . . . . max. 0,0002 %  
 cadmium (Cd) . . . . . max. 0,0001 %

calcium (Ca) . . . . . max. 0,005 %  
 cobalt (Co) . . . . . max. 0,005 %  
 copper (Cu) . . . . . max. 0,005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,001 %  
 lead (Pb) . . . . . max. 0,0004 %  
 magnesium (Mg) . . . . . max. 0,005 %  
 mercury (Hg) . . . . . max. 0,0001 %  
 nickel (Ni) . . . . . max. 0,005 %  
 potassium (K) . . . . . max. 0,005 %  
 zinc (Zn) . . . . . max. 0,025 %

substances reducing KMnO<sub>4</sub> . . . . . passes test  
 loss on drying (130 °C) . . . . . 21,5 - 24,0 %

Art. No.	Volume	Container
S003320500	500 g	P
S003321000	1 kg	P
S00332005P	5 kg	P
S00332025P	25 kg	P

## Sodium dihydrogen phosphate monohydrate

- Synonyms: Sodium biphosphate, Monosodium orthophosphate, Primary sodium phosphate, Sodium phosphate monobasic
- NaH<sub>2</sub>PO<sub>4</sub>·H<sub>2</sub>O
- M = 137,99 g/mol

- CAS [10049-21-5]
- EINECS-No.: 231-449-2
- Solub. in water: (20 °C): 850 g/l
- Melting point: ~ 100 °C (decomposes)
- LD 50 (oral, rat): 8290 mg/kg (anhydrous substance)

- Tariff number: 2835 22 00 00
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products, for pharmaceuticals synthesizing, for softening water, in food industry (E 339).

## S00333 Sodium dihydrogen phosphate monohydrate, extra pure, Pharmed®, BP, USP

assay (acidimetric, on dried sample) . . . . . 98 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 insoluble in water . . . . . max. 0,2 %  
 acidity . . . . . passes test  
 pH (5 %, H<sub>2</sub>O) . . . . . 4,1 - 4,5  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,03 %  
 aluminium, calcium and related

elements . . . . . passes test  
 arsenic (As) . . . . . max. 0,0008 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,001 %  
 reducing substances . . . . . passes test  
 water content . . . . . 10 - 15 %  
 loss on drying (130 °C) . . . . . 11,5 - 14,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S003330500	500 g	P
S003331000	1 kg	P
S00333005P	5 kg	P

## S00331 Sodium dihydrogen phosphate monohydrate, reagent grade, ACS

assay (acidimetric) . . . . . 99,0 - 102,0 %  
 insoluble in water . . . . . max. 0,01 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 4,1 - 4,5  
 chlorides (Cl) . . . . . max. 0,0005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,003 %  
 total nitrogen (as N) . . . . . max. 0,001 %

calcium (Ca) . . . . . max. 0,005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0005 %  
 potassium (K) . . . . . max. 0,005 %

Art. No.	Volume	Container
S003310250	250 g	P
S003310500	500 g	P
S003311000	1 kg	P
S00331005P	5 kg	P

## S00328 Sodium dihydrogen phosphate monohydrate, molecular biology grade

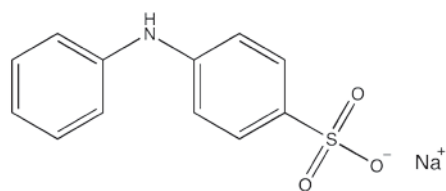
assay (acidimetric) . . . . . min. 99,5 %  
 absorbance of an aqueous solution  
 0,1 M in a 1 cm cell at 260 nm . . . . . max. 0,01 AU  
 absorbance of an aqueous solution  
 0,1 M in a 1 cm cell at 280 nm . . . . . max. 0,01 AU

chlorides (Cl) . . . . . max. 0,005 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,0005 %  
 DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
S003280250	250 g	P

## Sodium 4-diphenylaminosulfonic acid

### S00285 Sodium 4-diphenylaminosulfonic acid, redox indicator



- Synonyms: Diphenylamine-4-sulfonic acid sodium salt
- C<sub>12</sub>H<sub>10</sub>NNaO<sub>3</sub>S
- M = 271,27 g/mol
- CAS [6152-67-6]
- EINECS-No.: 228-165-6
- Solub. in water: (20 °C): ~ 820 g/l
- Tariff number: 2921 44 00 90
- Applications: analytical chemistry, indicator.

#### Specifications:

suitability as redox indicator . . . . . passes test  
 loss on drying (105 °C) . . . . . max. 5 %

Art. No.	Volume	Container
S002850025	25 g	P

## Sodium disulfite

- Synonyms: Sodium metabisulfite, Sodium pyrosulfite
- Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub>
- M = 190,10 g/mol
- CAS [7681-57-4]
- EINECS-No.: 231-673-0
- Solub. in water: (20 °C): ~ 650 g/l

- Melting point: ~ 150 °C (decomposes)
- LD 50 (oral, rat): 1540 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H318 - H302 - EUH031
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P310 - P301 + P312 - P501a

- Tariff number: 2832 10 00 00
- Applications: analytical chemistry, laboratory reagent, bleaching agent, reducing agent (manufacture of dyes), antioxidant (in the pharmaceuticals industry), in food industry (E 223), preservative agent.

## S00289 Sodium disulfite, extra pure, Pharmed®, Ph Eur, BP, NF

assay (iodometric) . . . . . 95 - 100,5 %  
 assay (iodometric, as SO<sub>2</sub>) . . . . . 65 - 67,4 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 pH (5 %, H<sub>2</sub>O) . . . . . 3,5 - 5,0  
 chlorides (Cl) . . . . . max. 0,05 %

thiosulfates (S<sub>2</sub>O<sub>3</sub>) . . . . . passes test  
 arsenic (As) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,002 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S002890500	500 g	P
S002891000	1 kg	P
S00289005P	5 kg	P
S00289025P	25 kg	P

**S00290 Sodium disulfite, reagent grade, ACS, Reag. Ph Eur**

assay (iodometric) . . . . .min. 98 %  
 identity . . . . .passes test  
 appearance of solution . . . . .passes test  
 insoluble in water . . . . .max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) . . . . .3,5 - 5,0  
 chlorides (Cl) . . . . .max. 0,005 %

thiosulfates (S<sub>2</sub>O<sub>3</sub>) . . . . .max. 0,05 %  
 arsenic (As) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,0005 %  
 lead (Pb) . . . . .max. 0,0005 %

Art. No.	Volume	Container
S002900500	500 g	P
S002901000	1 kg	P

**Sodium fluoride**

- Synonyms: Chemifluor, Ossalin, Ossin, Zyrmafluor
- NaF
- M = 41,99 g/mol
- CAS [7681-49-4]
- EINECS-No.: 231-667-8
- Solub. in water: (20 °C): 42 g/l
- Melting point: 993 °C
- Boiling point: 1704 °C

- Vapour pressure: (1077 °C) 1 hPa
- LD 50 (oral, rat): 52 mg/kg
- EC-Index-No.: 009-004-00-7
- ADR: 6.1 T5 III UN 1690
- IMDG: 6.1 III UN 1690
- IATA/ICAO: 6.1 III UN 1690
- GHS-signal word: Danger
- GHS-H sentences: H301 - EUH032 - H315 - H319

- GHS-P sentences: P280 - P301 + P310 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2826 19 10 00
- Applications: analytical chemistry, laboratory reagent, in the production of enamels, insecticide, in fluoridation of drinking water.

**S00355 Sodium fluoride, extra pure, Pharmpur®, Ph Eur, BP, USP**

assay (complexometric, on dried sample) . . . . .98 - 102 %  
 identification . . . . .passes test  
 appearance of solution . . . . .clear and colourless  
 acidity or alkalinity . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,02 %

fluorosilicates . . . . .passes test  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,02 %  
 heavy metals (as Pb) . . . . .max. 0,003 %  
 loss on drying (130 °C) . . . . .max. 1 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

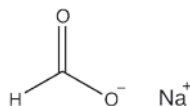
Art. No.	Volume	Container
S003551000	1 kg	P
S00355005P	5 kg	P

**S00323 Sodium fluoride, reagent grade, ACS, ISO**

assay (complexometric) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,01 %  
 acidity . . . . .max. 0,03 meq/g  
 alkalinity . . . . .max. 0,01 meq/g  
 chlorides (Cl) . . . . .max. 0,003 %  
 phosphates (as PO<sub>4</sub>) . . . . .max. 0,0005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %  
 sulfites (SO<sub>3</sub>) . . . . .max. 0,005 %

sodium fluorosilicate (Na<sub>2</sub>SiF<sub>6</sub>) . . . . .max. 0,1 %  
 copper (Cu) . . . . .max. 0,0005 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,002 %  
 lead (Pb) . . . . .max. 0,001 %  
 potassium (K) . . . . .max. 0,02 %  
 loss on drying (150 °C) . . . . .max. 0,2 %

Art. No.	Volume	Container
S003230500	500 g	P
S003231000	1 kg	P
S00323005P	5 kg	P
S00323025P	25 kg	P

**Sodium formate**

- Synonyms: Formic acid sodium salt
- NaOOC
- M = 68,01 g/mol
- CAS [141-53-7]
- EINECS-No.: 205-488-0
- Solub. in water: (20 °C): 820 g/l
- Melting point: 255 °C
- LD 50 (oral, rat): 11200 mg/kg
- GHS-signal word: Warning

- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2915 12 00 00
- Applications: analytical chemistry, laboratory reagent, solvents, chromatography, precipitant for: noble metals, for extraction of phosphates in soil samples, synthesis of organic products.

**S00324 Sodium formate, extra pure**

assay (iodometric) . . . . .min. 98 %  
 insoluble in water . . . . .max. 0,025 %  
 pH (5 %, H<sub>2</sub>O) . . . . .7,0 - 8,5  
 acidity (as HCOOH) . . . . .max. 0,1 %  
 chlorides (Cl) . . . . .max. 0,005 %  
 phosphates (as PO<sub>4</sub>) . . . . .max. 0,01 %

sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %  
 copper (Cu) . . . . .max. 0,002 %  
 iron (Fe) . . . . .max. 0,002 %  
 lead (Pb) . . . . .max. 0,002 %  
 nickel (Ni) . . . . .max. 0,002 %

Art. No.	Volume	Container
S003240500	500 g	P
S00324005P	5 kg	P

**S00326 Sodium formate, reagent grade, ACS, Reag. Ph Eur**

assay (iodometric) . . . . .min. 99 %  
 insoluble in water . . . . .max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) . . . . .7,0 - 8,5  
 acidity (as HCOOH) . . . . .max. 0,05 %  
 chlorides (Cl) . . . . .max. 0,001 %  
 phosphates (as PO<sub>4</sub>) . . . . .max. 0,001 %

sulfates (SO<sub>4</sub>) . . . . .max. 0,001 %  
 calcium (Ca) . . . . .max. 0,005 %  
 heavy metals (as Pb) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0005 %  
 lead (Pb) . . . . .max. 0,001 %  
 loss on drying (150 °C) . . . . .max. 0,5 %

Art. No.	Volume	Container
S00326005P	5 kg	P

**S00325 Sodium formate, HPLC grade**

assay (iodometric) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 insoluble matter . . . . .passes test  
 pH (5 %, H<sub>2</sub>O) . . . . .7,0 - 8,5  
 heavy metals (as Pb) . . . . .max. 0,0005 %

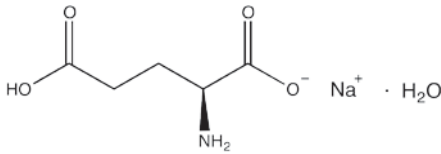
iron (Fe) . . . . .max. 0,0005 %  
 max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength:  
 absorbance:  
 260 nm. . . . .0,05 AU  
 270 nm. . . . .0,04 AU

Art. No.	Volume	Container
S003250250	250 g	P

# Sodium

## Sodium L-glutamate monohydrate

### S00400 Sodium L-glutamate monohydrate, extra pure, Pharmpur®, NF



- $C_5H_8NNaO_4 \cdot H_2O$
- $M = 187,13 \text{ g/mol}$
- CAS [6106-04-3]
- EINECS-No.: 205-538-1
- Solub. in water: (20 °C): ~ 600 g/l
- Melting point: 225 - 240 °C
- Flash pt. > 900 °C
- LD 50 (oral, rat): 15800 mg/kg
- Tariff number: 2922 42 00 10
- Applications: in food industry (E 621).

appearance of solution . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ ,  $c = 10$ , HCl  
 2 mol/l, on dried sample) . . . . . + 24,8 ° - + 25,3 °  
 chlorides (Cl) . . . . . max. 0,25 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 lead (Pb) . . . . . max. 0,001 %  
 loss on drying (100 °C) . . . . . max. 0,5 %  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.

**Specifications:**  
 assay (titration with HClO<sub>4</sub>) . . . . . 99 - 100,5 %  
 identification . . . . . passes test  
 pH (5 %, H<sub>2</sub>O) . . . . . 6,7 - 7,2

Art. No.	Volume	Container
S004000500	500 g	Ⓔ
S004001000	1 kg	Ⓔ
S00400025P	25 kg	Ⓕ

## Sodium hexametaphosphate

### S00415 Sodium hexametaphosphate, extra pure

- Synonyms: Sodium polyphosphate, Graham's salt
- Na-(NaPO<sub>3</sub>)<sub>n</sub>-ONa
- CAS [68915-31-1]
- EINECS-No.: 272-808-3
- Solub. in water: (20 °C): soluble
- Melting point: 628 °C
- LD 50 (oral, rat): 5000 mg/kg
- Tariff number: 2835 39 00 00

- Applications: dentifrices, polishing agent, detergent (abrasive).

iron (Fe) . . . . . max. 0,01 %  
 copper (Cu) . . . . . max. 0,0025 %  
 lead (Pb) . . . . . max. 0,0025 %  
 nickel (Ni) . . . . . max. 0,0025 %

**Specifications:**  
 assay (acidimetric, as P<sub>2</sub>O<sub>5</sub>) . . . . . 65 - 70 %  
 insoluble in water . . . . . max. 0,01 %  
 chlorides (Cl) . . . . . max. 0,03 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,1 %  
 arsenic (As) . . . . . max. 0,0002 %

Art. No.	Volume	Container
S004150500	500 g	Ⓔ
S004151000	1 kg	Ⓔ

## Sodium hexanitrocobaltate(III)

### S00240 Sodium hexanitrocobaltate(III), reagent grade, ACS

- Synonyms: Sodium cobaltinitrite, Cobalt(III) sodium nitrite
- Na<sub>3</sub>[Co(NO<sub>2</sub>)<sub>6</sub>]
- $M = 403,94 \text{ g/mol}$
- CAS [13600-98-1]
- EINECS-No.: 237-077-7
- Solub. in water: (20 °C): 720 g/l
- ADR: 5.1 O2 III UN 1479
- IMDG: 5.1 III UN 1479
- IATA/ICAO: 5.1 III UN 1479
- GHS-signal word: Danger

- GHS-H sentences: H272 - H350
- GHS-P sentences: P221 - P210 - P220 - P280 - P405 - P501a
- Tariff number: 2842 90 90 00
- Applications: analytical chemistry, laboratory reagent, for the detection of: potassium.
- Appearance: Yellowish to brown powder

chlorides (Cl) . . . . . max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %  
 iron (Fe) . . . . . max. 0,002 %  
 suitability for determination of K . . . . . passes test

**Specifications:**  
 identity . . . . . passes test  
 insoluble matter (dil. acetic acid) . . . . . max. 0,02 %

Art. No.	Volume	Container
S002400025	25 g	Ⓔ
S002400100	100 g	Ⓔ

## Sodium hydrogen carbonate

- Synonyms: Sodium bicarbonate
- NaHCO<sub>3</sub>
- $M = 84,01 \text{ g/mol}$
- CAS [144-55-8]
- EINECS-No.: 205-633-8

- Solub. in water: (20 °C): 95,5 g/l
- Melting point: 270 °C (decomposes)
- Vapour pressure: (30 °C) 8,3 hPa
- LD 50 (oral, rat): 4220 mg/kg
- Tariff number: 2836 30 00 00

- Applications: analytical chemistry, laboratory reagent, to make sodium salts, for laboratory glassware cleaning, source of CO<sub>2</sub>, in fire extinguishers, in food industry (E-500).

### S00128 Sodium hydrogen carbonate, pure

assay (acidimetric) . . . . . min. 99 %  
 pH (5 %, H<sub>2</sub>O) . . . . . max. 8,6  
 carbonates (CO<sub>3</sub>) . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,01 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %  
 total nitrogen (as N) . . . . . max. 0,003 %  
 aluminium (Al) . . . . . max. 0,00005 %

arsenic (As) . . . . . max. 0,0002 %  
 calcium (Ca) . . . . . max. 0,01 %  
 copper (Cu) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %  
 lead (Pb) . . . . . max. 0,0005 %  
 zinc (Zn) . . . . . max. 0,001 %  
 loss on drying (silica gel) . . . . . max. 0,2 %

Art. No.	Volume	Container
S00128005P	5 kg	Ⓕ
S00128025P	25 kg	Ⓕ

### S00129 Sodium hydrogen carbonate, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (acidimetric, on dried sample) . . . . . 99,0 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 insoluble matter . . . . . passes test  
 normal carbonate . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,015 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,015 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,002 %

aluminium (Al) . . . . . max. 0,0002 %  
 arsenic (As) . . . . . max. 0,0002 %  
 calcium (Ca) . . . . . max. 0,01 %  
 copper (Cu) . . . . . max. 0,0001 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,002 %  
 magnesium (Mg) . . . . . max. 0,004 %  
 organic impurities . . . . . max. 0,01 %  
 loss on drying (silica gel) . . . . . max. 0,25 %

Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.

Art. No.	Volume	Container
S001290500	500 g	Ⓔ
S001291000	1 kg	Ⓔ
S00129005P	5 kg	Ⓕ
S00129025P	25 kg	Ⓕ

**S00132 Sodium hydrogen carbonate, powder, Ph Eur, USP, GMP, suitable for use as excipient**

assay (acidimetric, on dried sample) . . . . . 99 - 101 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 carbonates (CO<sub>3</sub>) . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,015 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,015 %  
 aluminium (Al) . . . . . max. 0,0002 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,002 %  
 arsenic (As) . . . . . max. 0,0002 %

calcium (Ca) . . . . . max. 0,01 %  
 copper (Cu) . . . . . max. 0,0001 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,002 %  
 magnesium (Mg) . . . . . max. 0,004 %  
 limit of sulfur compounds . . . . . max. 0,015 %  
 loss on drying (over silica gel) . . . . . max. 0,25 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
S001321000	1 kg	
S00132025P	25 kg	

**S00131 Sodium hydrogen carbonate, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (acidimetric, on dried sample) . . . . . 99,7 - 100,3 %  
 identity . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . max. 0,015 %  
 pH (5 %, H<sub>2</sub>O) . . . . . max. 8,6  
 chlorides (Cl) . . . . . max. 0,002 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,001 %  
 phosphates and silicates (as SiO<sub>2</sub>) . . . . . max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,015 %  
 total nitrogen (as N) . . . . . max. 0,0005 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,0005 %

arsenic (As) . . . . . max. 0,0002 %  
 calcium (Ca) . . . . . max. 0,01 %  
 copper (Cu) . . . . . max. 0,0002 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0005 %  
 magnesium (Mg) . . . . . max. 0,005 %  
 potassium (K) . . . . . max. 0,005 %  
 zinc (Zn) . . . . . max. 0,0005 %  
 sulphur compounds (as SO<sub>4</sub>) . . . . . max. 0,003 %  
 substances reducing iodine . . . . . max. 0,0065 %

loss on drying (silica gel) . . . . . max. 0,2 %

Art. No.	Volume	Container
S001310500	500 g	
S001311000	1 kg	
S00131005P	5 kg	
S00131025P	25 kg	

**S00130 Sodium hydrogen carbonate, HPLC grade**

assay (acidimetric) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 insoluble matter . . . . . passes test  
 max. absorbance of an aqueous sol. 10 % in a 1,0 cm

cell at wavelength: absorbance:  
 240 nm. . . . . 0,1 AU  
 250 nm. . . . . 0,04 AU  
 260 nm. . . . . 0,02 AU  
 280 nm. . . . . 0,01 AU

Art. No.	Volume	Container
S001300250	250 g	

**Sodium hydrogen carbonate, saturated solution****S00133 Sodium hydrogen carbonate, saturated solution**

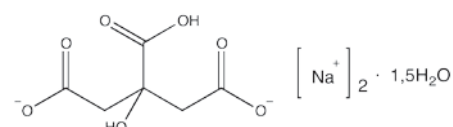
- NaHCO<sub>3</sub>
- M = 84,01 g/mol
- CAS [144-55-8]
- EINECS-No.: 205-633-8
- Density: 1,05 g/cm<sup>3</sup>
- LD 50 (oral, rat): 4220 mg/kg (anhydrous substance)

- Tariff number: 2836 30 00 00
- Applications: analytical chemistry, laboratory reagent.

**Specifications:**

composition: 80 g NaHCO<sub>3</sub> / 1 liter of H<sub>2</sub>O

Art. No.	Volume	Container
S001331000	1 l	

**di-Sodium hydrogen citrate 1,5-hydrate**

- C<sub>6</sub>H<sub>8</sub>Na<sub>2</sub>O<sub>7</sub> · 1,5H<sub>2</sub>O
- M = 263,11 g/mol
- CAS [6132-05-4]
- EINECS-No.: 205-623-3
- Melting point: 149 °C
- Tariff number: 2918 15 00 90
- Applications: for pharmaceuticals synthesizing (anticoagulant).

**S00350 di-Sodium hydrogen citrate 1,5-hydrate, extra pure, Ph Eur, USP, GMP, suitable for use as excipient**

assay (titration with HClO<sub>4</sub>) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 insoluble in water . . . . . max. 0,01 %  
 pH (3 %, H<sub>2</sub>O) . . . . . 4,9 - 5,2  
 chlorides (Cl) . . . . . max. 0,033 %  
 oxalates (C<sub>2</sub>O<sub>4</sub>) . . . . . max. 0,01 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,05 %  
 arsenic (As) . . . . . max. 0,0002 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 water (K.F.) . . . . . max. 13 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S003501000	1 kg	

**S00349 di-Sodium hydrogen citrate 1,5-hydrate, reagent grade, Reag. Ph Eur**

assay (titration with HClO<sub>4</sub>) . . . . . 98 - 104 %  
 identity (IR-spectrum) . . . . . passes test  
 pH (3 %, H<sub>2</sub>O) . . . . . 4,9 - 5,2  
 chlorides (Cl) . . . . . max. 0,033 %  
 oxalates (C<sub>2</sub>O<sub>4</sub>) . . . . . max. 0,01 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,12 %

arsenic (As) . . . . . max. 0,0001 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 lead (Pb) . . . . . max. 0,0005 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 water (K.F.) . . . . . max. 13 %

Art. No.	Volume	Container
S003490500	500 g	
S003491000	1 kg	
S00349005P	5 kg	

**di-Sodium hydrogen phosphate anhydrous**

- Synonyms: Disodium hydrogen phosphate, Sodium phosphate dibasic
- Na<sub>2</sub>HPO<sub>4</sub>
- M = 141,96 g/mol

- CAS [7558-79-4]
- EINECS-No.: 231-448-7
- Solub. in water: (20 °C): 77 g/l
- Melting point: ~ 250 °C (decomposes)

- LD 50 (oral, rat): 17000 mg/kg
- Tariff number: 2835 22 00 00
- Applications: analytical chemistry, in buffer solutions.

# Sodium

## S00335 di-Sodium hydrogen phosphate anhydrous, extra pure, Pharmapur®, Ph Eur, BP, USP

assay (acidimetric, on dried sample) . . . . . 98 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 insoluble in water . . . . . max. 0,4 %  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,05 %  
 sodium dihydrogenphosphate (NaH<sub>2</sub>PO<sub>4</sub>) . . . . . max. 2,5 %  
 arsenic (As) . . . . . max. 0,0016 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,002 %  
 reducing substances . . . . . passes test  
 loss on drying (130 °C) . . . . . max. 5,0 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S003350500	500 g	
S003351000	1 kg	
S00335005P	5 kg	
S00335025P	25 kg	

## S00352 di-Sodium hydrogen phosphate anhydrous, powder, Pharmapur®, USP, GMP, suitable for use as excipient

assay (acidimetric, on dried sample) . . . . . 98 - 100,5 %  
 identification . . . . . passes test  
 insoluble matter . . . . . max. 0,4 %  
 chlorides (Cl) . . . . . max. 0,06 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,2 %  
 arsenic (As) . . . . . max. 0,0016 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 loss on drying (130 °C) . . . . . max. 5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
 Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
S003521000	1 kg	
S00352025P	25 kg	

## S00337 di-Sodium hydrogen phosphate anhydrous, reagent grade, ACS, Reag. Ph Eur

assay (acidimetric) . . . . . min. 99 %  
 insoluble in water . . . . . max. 0,01 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 8,7 - 9,3  
 chlorides (Cl) . . . . . max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
 nitrogen compounds (as N) . . . . . max. 0,002 %  
 arsenic (As) . . . . . max. 0,00005 %  
 copper (Cu) . . . . . max. 0,0003 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %  
 lead (Pb) . . . . . max. 0,001 %  
 potassium (K) . . . . . max. 0,01 %  
 loss on drying (105 °C) . . . . . max. 0,2 %

Art. No.	Volume	Container
S003370500	500 g	
S003371000	1 kg	
S00337005P	5 kg	
S00337025P	25 kg	

## S00329 di-Sodium hydrogen phosphate anhydrous, molecular biology grade

assay (acidimetric) . . . . . min. 99,5 %  
 absorbance of an aqueous solution  
 0,1 M in a 1 cm cell at 260 nm . . . . . max. 0,05 AU  
 absorbance of an aqueous solution  
 0,1 M in a 1 cm cell at 280 nm . . . . . max. 0,05 AU  
 chlorides (Cl) . . . . . max. 0,005 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,005 %  
 DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
S003290250	250 g	
S003291000	1 kg	

## di-Sodium hydrogen phosphate dihydrate

- Synonyms: Sodium monohydrogen phosphate, Sodium phosphate dibasic
- Na<sub>2</sub>HPO<sub>4</sub>·2H<sub>2</sub>O
- M = 177,99 g/mol
- CAS [10028-24-7]
- EINECS-No.: 231-448-7
- Solub. in water: (20 °C): 93 g/l
- Melting point: 92,5 °C (release of crystalline water)
- LD 50 (oral, rat): 17000 mg/kg (anhydrous substance)
- Tariff number: 2835 22 00 00
- Applications: analytical chemistry, in buffer solutions (phosphates).

## S00338 di-Sodium hydrogen phosphate dihydrate, extra pure, Pharmapur®, Ph Eur, BP, USP

assay (acidimetric, on dried sample) . . . . . 98 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 insoluble matter . . . . . max. 0,4 %  
 arsenic (As) . . . . . max. 0,0016 %  
 chlorides (Cl) . . . . . max. 0,06 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,2 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,004 %  
 sodium dihydrogenphosphate (NaH<sub>2</sub>PO<sub>4</sub>) . . . . . max. 2,5 %  
 reducing substances . . . . . passes test  
 loss on drying (130 °C) . . . . . 18,5 - 21,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S003380500	500 g	
S003381000	1 kg	
S00338005P	5 kg	
S00338025P	25 kg	

## S00351 di-Sodium hydrogen phosphate dihydrate, crystallized, Pharmapur®, Ph Eur, USP, GMP, suitable for use as excipient

assay (acidimetric, on dried sample) . . . . . 98 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 insoluble matter . . . . . max. 0,4 %  
 chlorides (Cl) . . . . . max. 0,06 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,2 %  
 arsenic (As) . . . . . max. 0,0016 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,004 %  
 sodium dihydrogenphosphate (NaH<sub>2</sub>PO<sub>4</sub>) . . . . . max. 2,5 %  
 reducing substances . . . . . passes test  
 loss on drying (130 °C) . . . . . 19,5 - 21 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.  
 Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
S003511000	1 kg	
S00351025P	25 kg	

## S00339 di-Sodium hydrogen phosphate dihydrate, reagent grade, Reag. Ph Eur

assay (acidimetric) . . . . . min. 99,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . max. 0,3 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 9,0 - 9,2  
 chlorides (Cl) . . . . . max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,02 %  
 total nitrogen (as N) . . . . . max. 0,001 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,001 %  
 arsenic (As) . . . . . max. 0,0002 %  
 copper (Cu) . . . . . max. 0,0003 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %  
 potassium (K) . . . . . max. 0,005 %  
 sodium dihydrogenphosphate (NaH<sub>2</sub>PO<sub>4</sub>) . . . . . max. 1,7 %  
 reducing substances . . . . . passes test  
 loss on drying (130 °C) . . . . . 19,5 - 21,0 %

Art. No.	Volume	Container
S003390500	500 g	
S003391000	1 kg	
S00339005P	5 kg	

**S00345 di-Sodium hydrogen phosphate dihydrate, HPLC grade**

assay (acidimetric) . . . . .	min. 99,5 %	iron (Fe) . . . . .	max. 0,001 %
identity (IR-spectrum) . . . . .	passes test	lead (Pb) . . . . .	max. 0,001 %
insoluble matter . . . . .	passes test	potassium (K) . . . . .	max. 0,05 %
pH (5 %, H <sub>2</sub> O) . . . . .	9,0 - 9,2	max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength:	
chlorides (Cl) . . . . .	max. 0,001 %	230 nm. . . . .	0,1 AU
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,005 %	260 nm. . . . .	0,06 AU
total nitrogen (as N) . . . . .	max. 0,001 %	280 nm. . . . .	0,04 AU
copper (Cu) . . . . .	max. 0,0003 %	320 nm. . . . .	0,02 AU
heavy metals (as Pb) . . . . .	max. 0,001 %		

Art. No.	Volume	Container
S003450250	250 g	

**di-Sodium hydrogen phosphate dodecahydrate**

- Synonyms: Sodium monohydrogen phosphate, Sodium phosphate dibasic
- Na<sub>2</sub>HPO<sub>4</sub>·12H<sub>2</sub>O
- M = 358,14 g/mol
- CAS [10039-32-4]
- EINECS-No.: 231-448-7
- Solub. in water: (20 °C): ~ 218 g/l
- Melting point: 35 °C
- LD 50 (oral, rat): 17000 mg/kg (anhydrous substance)
- Tariff number: 2835 22 00 00
- Applications: analytical chemistry, in buffer solutions (phosphates), in porcelain industry, cosmetics, pharmaceutical and food industries, in pharma industry.

**S00336 di-Sodium hydrogen phosphate dodecahydrate, extra pure, Pharmpur®, Ph Eur, BP**

assay (acidimetric) . . . . .	98,5 - 102,5 %	heavy metals (as Pb) . . . . .	max. 0,0008 %
identification . . . . .	passes test	iron (Fe) . . . . .	max. 0,001 %
appearance of solution . . . . .	passes test	reducing substances . . . . .	passes test
insoluble in water . . . . .	max. 0,15 %	water (K.F.) . . . . .	57 - 61 %
chlorides (Cl) . . . . .	max. 0,001 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	
sodium dihydrogenphosphate (NaH <sub>2</sub> PO <sub>4</sub> ) . . . . .	max. 2,5 %		
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,01 %		
arsenic (As) . . . . .	max. 0,0001 %		

Art. No.	Volume	Container
S003360500	500 g	
S003361000	1 kg	
S00336005P	5 kg	
S00336025P	25 kg	

**S00343 di-Sodium hydrogen phosphate dodecahydrate, reagent grade, ISO**

assay (acidimetric) . . . . .	99 - 102 %	copper (Cu) . . . . .	max. 0,0002 %
identity . . . . .	passes test	heavy metals (as Pb) . . . . .	max. 0,0005 %
appearance of solution . . . . .	passes test	iron (Fe) . . . . .	max. 0,0005 %
pH (5 %, H <sub>2</sub> O) . . . . .	9,0 - 9,4	lead (Pb) . . . . .	max. 0,0005 %
chlorides (Cl) . . . . .	max. 0,0005 %	potassium (K) . . . . .	max. 0,005 %
sulfates (SO <sub>4</sub> ) . . . . .	max. 0,005 %	sodium dihydrogen phosphate . . . . .	passes test
total nitrogen (as N) . . . . .	max. 0,001 %	reducing substances . . . . .	passes test
arsenic (As) . . . . .	max. 0,00005 %	water (K.F.) . . . . .	57 - 61 %

Art. No.	Volume	Container
S003430500	500 g	
S003431000	1 kg	
S00343005P	5 kg	

**di-Sodium hydrogen phosphate heptahydrate****S00346 di-Sodium hydrogen phosphate heptahydrate, crystallized, Pharmpur®, USP, GMP, suitable for use as excipient**

- Synonyms: Sodium monohydrogen phosphate, Sodium phosphate dibasic
- Na<sub>2</sub>HPO<sub>4</sub>·7H<sub>2</sub>O
- M = 268,03 g/mol
- CAS [7782-85-6]
- EINECS-No.: 231-448-7
- Solub. in water: (20 °C): 154 g/l
- Melting point: 48 °C (release of crystalline water)
- LD 50 (oral, rat): 12930 mg/kg
- Tariff number: 2835 22 00 00
- Applications: pharmaceutical industry
- Specifications:
  - assay (acidimetric, on dried sample) . . . . . 98 - 100,5 %
  - identification . . . . . passes test
  - insoluble in water . . . . . max. 0,4 %
  - chlorides (Cl) . . . . . max. 0,06 %
  - sulfates (SO<sub>4</sub>) . . . . . max. 0,2 %
  - arsenic (As) . . . . . max. 0,0016 %
  - heavy metals (as Pb) . . . . . max. 0,002 %
- loss on drying (130 °C) . . . . . 43 - 50 %
- Residual solvents are analysed according to guideline CPMP/ICH/283/95.
- Suitable for use as excipient according to requirements of GMP.

Art. No.	Volume	Container
S003461000	1 kg	
S00346025P	25 kg	

**Sodium hydrogen selenite****S00160 Sodium hydrogen selenite, for microbiology**

- Synonyms: Sodium biselenite
- NaHSe<sub>3</sub>
- M = 150,95 g/mol
- CAS [7782-82-3]
- EINECS-No.: 231-966-3
- Solub. in water: (20 °C): 580 g/l
- LD 50 (oral, rat): 2,5 mg/kg
- EC-Index-No.: 034-002-00-8
- ADR: 6.1 T5 I UN 2630
- IMDG: 6.1 I UN 2630
- IATA/ICAO: 6.1 I UN 2630
- GHS-signal word: Danger
- GHS-H sentences: H301 - H331 - H373 - H410
- GHS-P sentences: P260 - P261 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2842 90 10
- Specifications:
  - total selenium . . . . . approx. 51,3 %
  - total metallic impurities . . . . . max. 0,02 %
  - loss on drying (105 °C) . . . . . max. 0,5 %
  - suitability for microbiology . . . . . passes test

Art. No.	Volume	Container
S001600100	100 g	

# Sodium

## Sodium hydrogen sulfate anhydrous

### S00150 Sodium hydrogen sulfate anhydrous, extra pure

- Synonyms: Sodium bisulfate
- NaHSO<sub>4</sub>
- M = 120,06 g/mol
- CAS [7681-38-1]
- EINECS-No.: 231-665-7
- Solub. in water: (25 °C): 286 g/l
- Melting point: 315 °C
- EC-Index-No.: 016-046-00-X
- ADR: 8 C2 III UN 3260
- IMDG: 8 III UN 3260
- IATA/ICAO: 8 III UN 3260
- GHS-signal word: Danger
- GHS-H sentences: H318

- GHS-P sentences: P280 - P305 + P351 + P338 - P310
- Tariff number: 2833 19 00 00
- Applications: analytical chemistry, in the textile industry, in building materials.

#### Specifications:

assay (acidimetric) . . . . .min. 97 %  
 insoluble in water . . . . .max. 0,01 %  
 chlorides (Cl) . . . . .max. 0,005 %  
 phosphates (as PO<sub>4</sub>) . . . . .max. 0,003 %  
 nitrogen compounds (as N) . . . . .max. 0,002 %  
 aluminium (Al) . . . . .max. 0,005 %

arsenic (As) . . . . .max. 0,0005 %  
 calcium (Ca) . . . . .max. 0,01 %  
 copper (Cu) . . . . .max. 0,01 %  
 iron (Fe) . . . . .max. 0,005 %  
 lead (Pb) . . . . .max. 0,01 %  
 magnesium (Mg) . . . . .max. 0,01 %  
 nickel (Ni) . . . . .max. 0,01 %

Art. No.	Volume	Container
S001500500	500 g	Ⓟ
S001501000	1 kg	Ⓟ
S00150005P	5 kg	Ⓟ

## Sodium hydrogen sulfite, solution 40%

### S00417 Sodium hydrogen sulfite, solution 40%, extra pure

- Synonyms: Sodium bisulfite, Bisulfite, Sodium bisulfite solution
- NaHSO<sub>3</sub>
- M = 104,06 g/mol
- CAS [7631-90-5]
- EINECS-No.: 231-548-0
- Density: 1,25 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 540 g/l
- Melting point: -44 °C
- Boiling point: 146 °C
- Vapour pressure: (20 °C) 40 hPa

- LD 50 (oral, rat): 1540 mg/kg (pure substance)
- EC-Index-No.: 016-064-00-8
- ADR: 8 C1 III UN 2693
- IMDG: 8 III UN 2693
- IATA/ICAO: 8 III UN 2693
- GHS-H sentences: EUH031 - EUH210
- Tariff number: 2832 10 00 00
- Applications: laboratory reagent, synthesis of organic products, in food industry (E 222), preservative agent, bleaching agent.

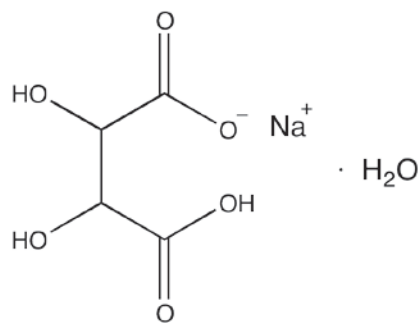
#### Specifications:

assay (iodometric) . . . . .approx. 40 %

Art. No.	Volume	Container
S004171000	1 l	Ⓟ
S00417025P	25 l	Ⓟ

## Sodium hydrogen tartrate monohydrate

### S00419 Sodium hydrogen tartrate monohydrate, reagent grade



- Synonyms: Sodium bitartrate monohydrate
- C<sub>4</sub>H<sub>5</sub>NaO<sub>6</sub>·H<sub>2</sub>O
- M = 190,09 g/mol
- CAS [526-94-3]
- EINECS-No.: 208-400-9
- Solub. in water: (20 °C): 89 g/l
- Melting point: 253 °C
- Tariff number: 2918 13 00 90
- Applications: analytical chemistry, for the detection of potassium; nutrient media for bacterial culture

#### Specifications:

assay (acidimetric) . . . . .99,5 - 100,5 %  
 insoluble in water . . . . .max. 0,005 %  
 pH (5 %, H<sub>2</sub>O, 20 °C) . . . . .3,0 - 3,6  
 chlorides (Cl) . . . . .max. 0,001 %

phosphates (as PO<sub>4</sub>) . . . . .max. 0,002 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
 ammonium (NH<sub>4</sub>) . . . . .max. 0,005 %  
 arsenic (As) . . . . .max. 0,00004 %  
 calcium (Ca) . . . . .max. 0,01 %  
 copper (Cu) . . . . .max. 0,001 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %  
 lead (Pb) . . . . .max. 0,001 %  
 nickel (Ni) . . . . .max. 0,001 %  
 loss on drying (120 °C) . . . . .9,0 - 10,0 %

Art. No.	Volume	Container
S004190500	500 g	Ⓟ
S004191000	1 kg	Ⓟ

## Sodium hydroxide

- Synonyms: Caustic soda
- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Solub. in water: (20 °C): soluble
- Melting point: 323 °C

- Boiling point: 1390 °C
- EC-Index-No.: 011-002-00-6
- ADR: 8 C6 II UN 1823
- IMDG: 8 II UN 1823
- IATA/ICAO: 8 II UN 1823
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 11 00 00
- Applications: solutions: to neutralize acids, to make sodium salts, to precipitate metals (as hydroxides) from water solutions of their salts.

### S00418 Sodium hydroxide, granulated, synthesis grade

assay (acidimetric) . . . . .min. 98 %  
 sodium carbonate (Na<sub>2</sub>CO<sub>3</sub>) . . . . .max. 0,5 %  
 sodium oxide (Na<sub>2</sub>O) . . . . .min. 75,5 %  
 iron (Fe) . . . . .max. 0,0015 %  
 nickel (Ni) . . . . .max. 0,0003 %

Art. No.	Volume	Container
S004181000	1 kg	Ⓟ
S00418005P	5 kg	Ⓟ
S00418025P	25 kg	Ⓟ

### S00420 Sodium hydroxide, pellets, extra pure, Pharmpur®, Ph Eur, BP, NF

assay (acidimetric) . . . . .95 - 100,5 %  
 identification . . . . .passes test  
 appearance of solution . . . . .clear and colourless  
 carbonates (as Na<sub>2</sub>CO<sub>3</sub>) . . . . .max. 3 %  
 chlorides (Cl) . . . . .max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %

heavy metals (as Pb) . . . . .max. 0,003 %  
 potassium (K) . . . . .passes test  
 iron (Fe) . . . . .max. 0,001 %  
 insoluble matter . . . . .passes test  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S004200500	500 g	Ⓟ
S004201000	1 kg	Ⓟ
S00420005P	5 kg	Ⓟ
S00420025P	25 kg	Ⓟ



**S00475 Sodium hydroxide, pellets, Pharmpur®, Ph Eur, GMP, suitable for use as excipient**

assay (acidimetric) . . . . . 97 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 carbonates (as Na<sub>2</sub>CO<sub>3</sub>) . . . . . max. 2 %  
 chlorides (Cl) . . . . . max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %

heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,001 %  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.  
 Suitable for use as excipient according to require-  
 ments of GMP.

Art. No.	Volume	Container
S004751000	1 kg	
S00475005P	5 kg	
S00475025P	25 kg	

**S00425 Sodium hydroxide, pellets, reagent grade, ACS, ISO, Reag. Ph Eur**

assay (acidimetric) . . . . . min. 98,5 %  
 identity . . . . . passes test  
 appearance of solution . . . . . passes test  
 carbonates (as Na<sub>2</sub>CO<sub>3</sub>) . . . . . max. 1,0 %  
 chlorides (Cl) . . . . . max. 0,001 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,0005 %  
 silicates (SiO<sub>2</sub>) . . . . . max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0005 %  
 ammonium hydroxide precipitate . . . . . max. 0,02 %  
 total nitrogen (as N) . . . . . max. 0,0005 %

aluminium (Al) . . . . . max. 0,0005 %  
 calcium (Ca) . . . . . max. 0,001 %  
 copper (Cu) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0002 %  
 magnesium (Mg) . . . . . max. 0,002 %  
 mercury (Hg) . . . . . max. 0,00001 %  
 nickel (Ni) . . . . . max. 0,0005 %  
 potassium (K) . . . . . max. 0,02 %

zinc (Zn) . . . . . max. 0,001 %

Art. No.	Volume	Container
S004250500	500 g	
S004251000	1 kg	
S00425005P	5 kg	
S00425025P	25 kg	

**Sodium hydroxide, solution 50%****S00424 Sodium hydroxide, solution 50% w/v, extra pure**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: ~ 1,4 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 12 °C
- Boiling point: 143 °C
- Vapour pressure: (20 °C) 2 hPa
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, solvents, for pharmaceuticals synthesizing, for the synthesis of inorganic salts.

**Specifications:**

assay (acidimetric) . . . . . approx. 50 %  
 carbonates (as Na<sub>2</sub>CO<sub>3</sub>) . . . . . max. 1 %  
 chlorides (Cl) . . . . . max. 0,002 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,002 %  
 silicates (SiO<sub>2</sub>) . . . . . max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,003 %  
 total nitrogen (as N) . . . . . max. 0,002 %

aluminium (Al) . . . . . max. 0,001 %  
 arsenic (As) . . . . . max. 0,00004 %  
 calcium (Ca) . . . . . max. 0,005 %  
 copper (Cu) . . . . . max. 0,001 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %  
 lead (Pb) . . . . . max. 0,001 %  
 magnesium (Mg) . . . . . max. 0,005 %  
 nickel (Ni) . . . . . max. 0,001 %

Art. No.	Volume	Container
S004241000	1 l	
S00424005P	5 l	
S00424025P	25 l	

**Sodium hydroxide, solution 40%****S00422 Sodium hydroxide, solution 40% w/v, extra pure**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,3293 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, solvents, for pharmaceuticals synthesizing, for the synthesis of inorganic salts.

**Specifications:**

assay (acidimetric) . . . . . min. 40 %  
 carbonates (as Na<sub>2</sub>CO<sub>3</sub>) . . . . . max. 1 %  
 chlorides (Cl) . . . . . max. 0,002 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,002 %  
 silicates (SiO<sub>2</sub>) . . . . . max. 0,005 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,003 %  
 total nitrogen (as N) . . . . . max. 0,005 %  
 aluminium (Al) . . . . . max. 0,001 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %

Art. No.	Volume	Container
S004221000	1 l	
S00422005P	5 l	
S00422010C	10 l	
S00422025P	25 l	

**Sodium hydroxide, solution 35%****S00423 Sodium hydroxide, solution 35% w/v, extra pure**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: ~ 1,3 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 9 °C
- Boiling point: 119 °C
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger

- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, solvents, for pharmaceuticals synthesizing, for the synthesis of inorganic salts.

**Specifications:**

assay (acidimetric) . . . . . approx. 35 %  
 carbonates (as Na<sub>2</sub>CO<sub>3</sub>) . . . . . max. 1 %  
 chlorides (Cl) . . . . . max. 0,002 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,002 %

silicates (SiO<sub>2</sub>) . . . . . max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,003 %  
 total nitrogen (as N) . . . . . max. 0,005 %  
 aluminium (Al) . . . . . max. 0,001 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,001 %

Art. No.	Volume	Container
S00423005P	5 l	
S00423025P	25 l	

# Sodium

## Sodium hydroxide, solution 32%

### S00426 Sodium hydroxide, solution 32% w/v, for the determination of nitrogen

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,26 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 9 °C
- Boiling point: 119 °C
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger

- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, for determination of: nitrogen.

sulfates (SO<sub>4</sub>) . . . . .max. 0,0005 %  
total nitrogen (as N) . . . . .max. 0,0001 %  
aluminium (Al) . . . . .max. 0,0005 %  
heavy metals (as Pb) . . . . .max. 0,0005 %  
iron (Fe) . . . . .max. 0,0005 %

#### Specifications:

assay (acidimetric) . . . . .min. 32 %  
carbonates (as Na<sub>2</sub>CO<sub>3</sub>) . . . . .max. 0,5 %  
chlorides (Cl) . . . . .max. 0,0005 %  
phosphates (as PO<sub>4</sub>) . . . . .max. 0,0005 %  
silicates (SiO<sub>2</sub>) . . . . .max. 0,001 %

Art. No.	Volume	Container
S004261000	1 l	Ⓖ
S00426005P	5 l	Ⓖ
S00426025P	25 l	Ⓖ

## Sodium hydroxide, solution 30%

### S00421 Sodium hydroxide, solution 30% w/v, extra pure

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,27 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent.

total nitrogen (as N) . . . . .max. 0,005 %  
aluminium (Al) . . . . .max. 0,001 %  
heavy metals (as Pb) . . . . .max. 0,001 %  
iron (Fe) . . . . .max. 0,001 %

#### Specifications:

assay (acidimetric) . . . . .min. 30 %  
carbonates (as Na<sub>2</sub>CO<sub>3</sub>) . . . . .max. 1 %  
chlorides (Cl) . . . . .max. 0,002 %  
phosphates (as PO<sub>4</sub>) . . . . .max. 0,002 %  
silicates (SiO<sub>2</sub>) . . . . .max. 0,005 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,003 %

Art. No.	Volume	Container
S004211000	1 l	Ⓖ
S00421005P	5 l	Ⓖ
S00421025P	25 l	Ⓖ

## Sodium hydroxide, solution 25%

### S00433 Sodium hydroxide, solution 25% w/v, extra pure

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: ~ 1,23 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent.

total nitrogen (as N) . . . . .max. 0,005 %  
aluminium (Al) . . . . .max. 0,001 %  
heavy metals (as Pb) . . . . .max. 0,001 %  
iron (Fe) . . . . .max. 0,001 %

#### Specifications:

assay (acidimetric) . . . . .min. 25 %  
carbonates (as Na<sub>2</sub>CO<sub>3</sub>) . . . . .max. 1 %  
chlorides (Cl) . . . . .max. 0,002 %  
phosphates (as PO<sub>4</sub>) . . . . .max. 0,002 %  
silicates (SiO<sub>2</sub>) . . . . .max. 0,005 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,003 %

Art. No.	Volume	Container
S004331000	1 l	Ⓖ
S00433005P	5 l	Ⓖ
S00433025P	25 l	Ⓖ

## Sodium hydroxide, solution 20%

### S00412 Sodium hydroxide, solution 20% w/v, extra pure

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: ~ 1,21 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -26 °C
- Boiling point: 100 °C
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824

- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent.

silicates (SiO<sub>2</sub>) . . . . .max. 0,005 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,003 %  
total nitrogen (as N) . . . . .max. 0,005 %  
aluminium (Al) . . . . .max. 0,001 %  
heavy metals (as Pb) . . . . .max. 0,001 %  
iron (Fe) . . . . .max. 0,001 %

#### Specifications:

assay (acidimetric) . . . . .min. 20 %  
carbonates (as Na<sub>2</sub>CO<sub>3</sub>) . . . . .max. 1 %  
chlorides (Cl) . . . . .max. 0,002 %  
phosphates (as PO<sub>4</sub>) . . . . .max. 0,002 %

Art. No.	Volume	Container
S004120500	500 ml	Ⓖ

## Sodium hydroxide, volumetric solutions

### S00451 Sodium hydroxide, solution 6 mol/l (6 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: ~ 1,23 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

1 ml = 0,24 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

#### Specifications:

factor . . . . .0,999 - 1,001  
uncertainty ± 0,001

Art. No.	Volume	Container
S004511000	1 l	Ⓖ

**S00455 Sodium hydroxide, solution 5 mol/l (5 N)**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: ~ 1,18 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor ..... 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,2000 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004551000	1 l	
S00455005P	5 l	

**S00440 Sodium hydroxide, solution 2 mol/l (2 N)**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,09 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor ..... 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,080 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004401000	1 l	
S00440005P	5 l	

**S00430 Sodium hydroxide, solution 1,66 mol/l (1,66 N)**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: ~ 1,07 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: for the determination of total acidity in vinegar.

**Specifications:**

factor ..... 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,0664 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004301000	1 l	
S00430005P	5 l	

**S00441 Sodium hydroxide, solution 1 mol/l (1 N)**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,05 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**

factor ..... 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,0400 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004411000	1 l	
S00441005P	5 l	
S00441010C	10 l	

**S00442 Sodium hydroxide, solution 0,5 mol/l (0,5 N)**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,02 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**

factor ..... 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,02000 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004421000	1 l	
S00442005P	5 l	
S00442010C	10 l	

# Sodium

## S00452 Sodium hydroxide, solution 0,4 mol/l (0,4 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,02 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 III UN 1824
- IMDG: 8 III UN 1824
- IATA/ICAO: 8 III UN 1824
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

1 ml = 0,01600 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

Art. No.	Volume	Container
S004521000	1 l	

## S00449 Sodium hydroxide, solution 0,3546 mol/l (0,3546 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 III UN 1824
- IMDG: 8 III UN 1824
- IATA/ICAO: 8 III UN 1824
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, for acid solutions standardization, for the analysis of: oils.

1 ml = 0,01418 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

Art. No.	Volume	Container
S004491000	1 l	

## S00474 Sodium hydroxide, solution 0,313 mol/l (0,313 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 III UN 1824
- IMDG: 8 III UN 1824
- IATA/ICAO: 8 III UN 1824
- GHS-signal word: Warning

- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2815 12 00 00

1 ml = 0,01252 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

Art. No.	Volume	Container
S00474005P	5 l	

## S00444 Sodium hydroxide, solution 0,25 mol/l (0,25 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 III UN 1824
- IMDG: 8 III UN 1824
- IATA/ICAO: 8 III UN 1824
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

1 ml = 0,0100 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

Art. No.	Volume	Container
S004441000	1 l	
S00444010C	10 l	



## S00464 Sodium hydroxide, solution 1/4,9 mol/l (1/4,9 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 III UN 1824
- IMDG: 8 III UN 1824
- IATA/ICAO: 8 III UN 1824
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2815 12 00 00

1 ml = 0,008163 g NaOH This volumetric solution was checked using Scharlau's potassium hydrogen by means of potentiometric methods phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

Art. No.	Volume	Container
S004640500	500 ml	
S004641000	1 l	

## S00445 Sodium hydroxide, solution 0,2 mol/l (0,2 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 III UN 1824
- IMDG: 8 III UN 1824
- IATA/ICAO: 8 III UN 1824
- GHS-signal word: Warning

- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, for acid solutions standardization.

1 ml = 0,008002 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

**Specifications:**  
factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

Art. No.	Volume	Container
S004451000	1 l	

**S00429 Sodium hydroxide, solution 1/9 mol/l (1/9 N)**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,004 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,00444 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004291000	1 l	
S00429005P	5 l	
S00429010C	10 l	

**S00443 Sodium hydroxide, solution 0,1 mol/l (0,1 N)**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,00400 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004431000	1 l	
S00443005P	5 l	
S00443010C	10 l	

**S00453 Sodium hydroxide, solution 0,05 mol/l (0,05 N)**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,003 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,0020 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004531000	1 l	
S00453010C	10 l	

**S00447 Sodium hydroxide, solution 0,025 mol/l (0,025 N)**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, for acid solutions standardization.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,0010 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004471000	1 l	
S00447010C	10 l	

**S00465 Sodium hydroxide, solution 1/49 mol/l (1/49 N)**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 011-002-00-6
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,0008163 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004650500	500 ml	
S004651000	1 l	

**S00448 Sodium hydroxide, solution 0,02 mol/l (0,02 N)**

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, for acid solutions standardization, for the determination of total acidity in vinegar.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,00080 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004480500	500 ml	
S004481000	1 l	

# Sodium

## S00439 Sodium hydroxide, solution 0,01 mol/l (0,01 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 011-002-00-6
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis, for acid solutions standardization.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,000400 g NaOH This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium hydrogen phthalate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S004390500	500 ml	
S004391000	1 l	
S00439005P	5 l	
S00439010C	10 l	

## S00428 Sodium hydroxide, concentrated solution to prepare 1 l of solution 1 mol/l (1 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,38 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824

- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: solutions: to neutralize acids, to make sodium salts, to precipitate metals (as hydroxides) from water solutions of their salts.

**Specifications:**  
 amount of substance: 40,000 g NaOH  
 concentrated solution. . . . . 5 mol/l ± 0,1 %

Art. No.	Volume	Container
S0042800PA	u.	

## S00434 Sodium hydroxide, concentrated solution to prepare 1 l of solution 0,5 mol/l (0,5 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,185 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824

- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: solutions: to neutralize acids, to make sodium salts, to precipitate metals (as hydroxides) from water solutions of their salts.

**Specifications:**  
 amount of substance: 20,00 g NaOH  
 concentrated solution. . . . . 5 mol/l ± 0,1 %

Art. No.	Volume	Container
S0043400PA	u.	

## S00427 Sodium hydroxide, concentrated solution to prepare 1 l of solution 0,1 mol/l (0,1 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,09 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 011-002-00-6
- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824

- IATA/ICAO: 8 II UN 1824
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 12 00 00
- Applications: solutions: to neutralize acids, to make sodium salts, to precipitate metals (as hydroxides) from water solutions of their salts.

**Specifications:**  
 amount of substance: 4,000 g NaOH  
 concentrated solution. . . . . 1 mol/l ± 0,1 %

Art. No.	Volume	Container
S0042700PA	u.	

## S00438 Sodium hydroxide, concentrated solution to prepare 1 l of solution 0,01 mol/l (0,01 N)

- NaOH
- M = 40,00 g/mol
- CAS [1310-73-2]
- EINECS-No.: 215-185-5
- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 011-002-00-6

- ADR: 8 C5 III UN 1824
- IMDG: 8 III UN 1824
- IATA/ICAO: 8 III UN 1824
- Tariff number: 2815 12 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**  
 amount of substance: 0,400 g NaOH  
 concentrated solution. . . . . 0,1 mol/l ± 0,1 %

Art. No.	Volume	Container
S0043800PA	u.	

## Sodium hypochlorite, solution 15%

### S00436 Sodium hypochlorite, solution 15% w/v, extra pure

- Synonyms: Clorox
- NaClO
- M = 74,44 g/mol
- CAS [7681-52-9]
- EINECS-No.: 231-668-3
- Density: (20 °C) ~ 1,22 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ -16 °C
- Boiling point: ~ 97 °C
- Vapour pressure: (20 °C) ~ 25 hPa

- LD 50 (oral, rat): 8200 mg/kg (pure substance)
- EC-Index-No.: 017-011-00-1
- ADR: 8 C9 III UN 1791
- IMDG: 8 III UN 1791
- IATA/ICAO: 8 III UN 1791
- GHS-signal word: Danger
- GHS-H sentences: H314 - EUH031
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2828 90 00 00

- Applications: bleaching agent, disinfectant.

**Specifications:**  
 assay (iodometric) . . . . . approx. 15 %

Art. No.	Volume	Container
S004361000	1 l	
S00436005P	5 l	
S00436025P	25 l	

## Sodium hypochlorite, solution 10%

## S00432 Sodium hypochlorite, solution 10% w/v, extra pure

- Synonyms: Clorox
- NaClO
- M = 74,44 g/mol
- CAS [7681-52-9]
- EINECS-No.: 231-668-3
- Density: 1,12 - 1,18 g/cm<sup>3</sup>
- EC-Index-No.: 017-011-00-1
- ADR: 8 C9 III UN 1791

- IMDG: 8 III UN 1791
- IATA/ICAO: 8 III UN 1791
- GHS-signal word: Danger
- GHS-H sentences: H314 - EUH031
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2828 90 00 00
- Applications: bleaching agent, disinfectant.

## Specifications:

assay (iodometric) . . . . . approx. 10 %

Art. No.	Volume	Container
S004321000	1 l	0
S00432005P	5 l	Ⓟ
S00432025P	25 l	Ⓟ

## Sodium hypochlorite, solution 5%

## S00431 Sodium hypochlorite, solution 5% w/v, extra pure

- Synonyms: Clorox
- NaClO
- M = 74,44 g/mol
- CAS [7681-52-9]
- EINECS-No.: 231-668-3
- Density: 1,10 g/cm<sup>3</sup>
- EC-Index-No.: 017-011-00-1
- GHS-signal word: Danger

- GHS-H sentences: H318 - H315
- GHS-P sentences: P280 - P305 + P351 + P338 - P310 - P321 - P362 - P332 + P313
- Tariff number: 2828 90 00 00
- Applications: bleaching agent, disinfectant, in the production of chlorides.

## Specifications:

assay (iodometric) . . . . . approx. 5 %

Art. No.	Volume	Container
S004311000	1 l	Ⓟ
S00431005P	5 l	Ⓟ
S00431025P	25 l	Ⓟ

## Sodium iodate

## S00825 Sodium iodate, reagent grade

- NaIO<sub>3</sub>
- M = 197,89 g/mol
- CAS [7681-55-2]
- EINECS-No.: 231-672-5
- Solub. in water: (20 °C): 81 g/l
- ADR: 5.1 O2 II UN 1479
- IMDG: 5.1 II UN 1479
- IATA/ICAO: 5.1 II UN 1479
- GHS-signal word: Danger
- GHS-H sentences: H271
- GHS-P sentences: P221 - P283 - P210 - P306 + P360 - P371 + P380 + P375 - P501a

- Tariff number: 2829 90 80 00
- Applications: analytical chemistry, laboratory reagent, antiseptic.
- Appearance: White-fine crystalline powder

## Specifications:

assay (iodometric) . . . . . min. 99,5 %  
 insoluble in water . . . . . max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 5 - 8  
 chlorides, chlorates, bromides and bromates (as Cl) . . . . . max. 0,02 %  
 iodides (I) . . . . . max. 0,002 %

sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
 total nitrogen (as N) . . . . . max. 0,002 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,001 %  
 potassium (K) . . . . . max. 0,02 %  
 loss on drying (130 °C) . . . . . max. 0,1 %

Art. No.	Volume	Container
S008250100	100 g	Ⓟ

## Sodium iodide

- NaI
- M = 149,89 g/mol
- CAS [7681-82-5]
- EINECS-No.: 231-679-3
- Solub. in water: (20 °C): soluble

- Melting point: 662 °C
- Boiling point: 1304 °C
- Vapour pressure: (767 °C) 1,3 hPa
- LD 50 (oral, rat): 4340 mg/kg
- Tariff number: 2827 60 00 00

- Applications: analytical chemistry, laboratory reagent, photography, synthesis of organic products, in optics, in the pharmaceuticals industry.

## S00835 Sodium iodide, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (argentometric, on dried sample) . . . . . 99,0 - 101,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 alkalinity . . . . . passes test  
 iodates (IO<sub>3</sub>) . . . . . passes test  
 nitrates, nitrites and ammonia . . . . . passes test

sulfates (SO<sub>4</sub>) . . . . . max. 0,015 %  
 thiosulfates and barium . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,002 %  
 potassium (K) . . . . . passes test  
 loss on drying (105 °C) . . . . . max. 3 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S008350250	250 g	Ⓟ
S008351000	1 kg	Ⓟ

## S00837 Sodium iodide, reagent grade, ACS, Reag. Ph Eur

assay (argentometric) . . . . . min. 99,5 %  
 insoluble in water . . . . . max. 0,01 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 6,0 - 9,0  
 chlorides and bromides (as Cl) . . . . . max. 0,01 %  
 iodates (IO<sub>3</sub>) . . . . . max. 0,0002 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,002 %  
 total nitrogen (as N) . . . . . max. 0,002 %  
 barium (Ba) . . . . . max. 0,002 %

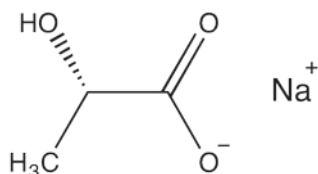
calcium (Ca) . . . . . max. 0,001 %  
 copper (Cu) . . . . . max. 0,0001 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0001 %  
 magnesium (Mg) . . . . . max. 0,001 %  
 nickel (Ni) . . . . . max. 0,00001 %  
 potassium (K) . . . . . max. 0,01 %  
 loss on drying (105 °C) . . . . . max. 0,5 %

Art. No.	Volume	Container
S008370100	100 g	Ⓟ
S008370250	250 g	Ⓟ
S008370500	500 g	Ⓟ
S008371000	1 kg	Ⓟ

# Sodium

## Sodium lactate, solution 50%

### S00460 Sodium lactate, solution 50% w/w, extra pure, Pharmapur®, Ph Eur, BP, USP



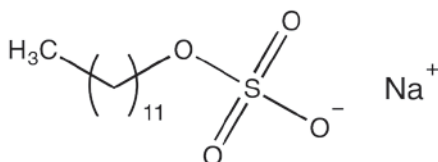
- Synonyms: L-2-Hydroxypropanoic acid sodium salt, Lactic acid sodium salt
- $C_3H_5NaO_3$
- $M = 112,06 \text{ g/mol}$
- CAS [867-56-1]
- EINECS-No.: 200-772-0
- Density:  $1,263 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Boiling point: 109 °C
- LD 50 (oral, rat):  $> 5000 \text{ mg/kg}$
- Tariff number: 2918 11 00 00
- Applications: synthesis of organic products, for pharmaceuticals synthesizing, in food industry (E 325), humectant, in pharma industry.

pH (20 %,  $H_2O$ ) ..... 5,0 - 9,0  
 chlorides (Cl) ..... max. 0,005 %  
 oxalates and phosphates ..... passes test  
 sulfates ( $SO_4$ ) ..... max. 0,01 %  
 aluminium (Al) ..... max. 0,00001 %  
 barium (Ba) ..... passes test  
 heavy metals (as Pb) ..... max. 0,001 %  
 iron (Fe) ..... max. 0,001 %  
 sucrose and reducing sugars ..... passes test  
 methanol (G.C.) ..... max. 0,005 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

**Specifications:**  
 assay (titration with  $HClO_4$ ) ..... min. 50 %  
 identification ..... passes test  
 appearance of solution ..... passes test

Art. No.	Volume	Container
S004601000	1 l	Ⓒ
S00460005P	5 l	Ⓒ
S00460025P	25 l	Ⓒ

## Sodium lauryl sulfate



- Synonyms: Dodecyl sulfate sodium salt, SDS
- $C_{12}H_{25}NaO_4S$
- $M = 288,38 \text{ g/mol}$
- CAS [151-21-3]
- EINECS-No.: 205-788-1
- Solub. in water: (20 °C):  $> 130 \text{ g/l}$
- Melting point: 205 °C
- Boiling point: 216 °C
- Flash pt. 170 - 180 °C
- Ignition temp.: 310,5 °C
- Vapour pressure: 0,18 Pa (20 °C)
- LD 50 (oral, rat): 1288 mg/kg
- ADR: 4.1 F1 III UN 1325

- IMDG: 4.1 III UN 1325
- IATA/ICAO: 4.1 III UN 1325
- GHS-signal word: Danger
- GHS-H sentences: H228 - H302 - H315 - H318 - H332 - H335 - H412 -
- GHS-P sentences: P210 - P261 - P280 - P302 + P352 - P304 + P340 - P305 + P351 + P338 - P312 - P405 - P501a
- Tariff number: 2920 90 10 90
- Applications: in biochemistry, for determination of: tensioactive substances.
- Appearance: White

### S00450 Sodium lauryl sulfate, 95%, extra pure

chlorides (Cl) ..... 0,1 - 1 %  
 sulfates ( $SO_4$ ) ..... 0,1 - 3 %  
 heavy metals (as Pb) ..... max. 0,001 %  
 loss on drying (110 °C) ..... max. 2 %

Art. No.	Volume	Container
S004500500	500 g	Ⓒ
S004501000	1 kg	Ⓒ
S00450005P	5 kg	Ⓒ

### SD0010 Sodium lauryl sulfate, molecular biology grade

assay (complexometric) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 solubility in ethanol ..... passes test  
 absorbance of an aqueous solution (3 %) in a 1 cm cell at 264 nm ..... max. 0,1 AU  
 absorbance of an aqueous solution (3 %) in a 1 cm cell at 280 nm ..... max. 0,1 AU

chlorides (Cl) ..... max. 0,01 %  
 phosphates (as  $PO_4$ ) ..... max. 0,0001 %  
 copper (Cu) ..... max. 0,0005 %  
 heavy metals (as Pb) ..... max. 0,0005 %  
 loss on drying (100 °C) ..... max. 1 %  
 DNases, RNases ..... non detected

Art. No.	Volume	Container
SD00100050	50 g	Ⓒ
SD00100500	500 g	Ⓒ
SD00101000	1 kg	Ⓒ

### S00456 Sodium lauryl sulfate, for ion-pair chromatography

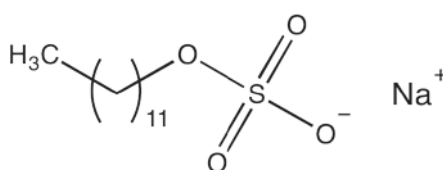
identity (IR-spectrum) ..... passes test  
 insoluble matter ..... passes test  
 pH (10 %,  $H_2O$ ) ..... 6,0 - 7,5  
 loss on drying (120 °C) ..... max. 2 %

max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength: absorbance:  
 210 nm. .... 0,1 AU  
 220 nm. .... 0,06 AU  
 230 nm. .... 0,04 AU  
 260 nm. .... 0,02 AU

Art. No.	Volume	Container
S004560025	25 g	Ⓒ
S004560100	100 g	Ⓒ

## Sodium lauryl sulfate, volumetric solutions

### S00458 Sodium lauryl sulfate, solution 0,004 mol/l



- $C_{12}H_{25}NaO_4S$
- $M = 288,38 \text{ g/mol}$
- CAS [151-21-3]
- EINECS-No.: 205-788-1
- Density:  $1,00 \text{ g/cm}^3$
- LD 50 (oral, rat): 1288 mg/kg (pure substance)
- Tariff number: 2920 90 10 90
- Applications: analytical chemistry, for determination of tensioactive substances.

**Specifications:**  
 factor ..... 0,999 - 1,001  
 1 ml = 0,001153 g  $C_{12}H_{25}NaO_4S$   
 This volumetric solution was freshly prepared from sodium lauryl sulfate, reagent grade

Art. No.	Volume	Container
S004581000	1 l	Ⓒ



## Sodium metaarsenite, volumetric solutions

## S00100 Sodium metaarsenite, solution 0,05 mol/l (0,1 N)

- NaAsO<sub>2</sub>
- M = 129,91 g/mol
- CAS [7784-46-5]
- EINECS-No.: 232-070-5
- Density: 1,01 g/cm<sup>3</sup>
- LD 50 (oral, rat): 41 mg/kg (pure substance)
- EC-Index-No.: 033-002-00-5
- ADR: 6.1 T4 III UN 1686
- IMDG: 6.1 III UN 1686
- IATA/ICAO: 6.1 III UN 1686
- GHS-signal word: Danger
- GHS-H sentences: H350 - H412

- GHS-P sentences: P281 - P273 - P201 - P308 + P313 - P405 - P501a
- Tariff number: 2842 90 90 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,004946 g As<sub>2</sub>O<sub>3</sub> 1 ml = 0,006495 g NaAsO<sub>2</sub>  
This volumetric solution was checked by means of potentiometric methods using an iodine standard solution, that was also checked against Scharlau's potassium dichromate volumetric standard. Scharlau's volumetric standard solutions are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S001001000	1 l	Ⓟ

## Sodium metaperiodate

- Synonyms: Sodium periodate
- NaIO<sub>3</sub>
- M = 213,89 g/mol
- CAS [7790-28-5]
- EINECS-No.: 232-197-6
- Solub. in water: (20 °C): 91 g/l
- Melting point: 300 °C (decomposes)

- ADR: 5.1 O2 I UN 1479
- IMDG: 5.1 I UN 1479
- IATA/ICAO: 5.1 I UN 1479
- GHS-signal word: Danger
- GHS-H sentences: H271
- GHS-P sentences: P221 - P283 - P210 - P306 + P360 - P371 + P380 + P375 - P501a

- Tariff number: 2829 90 80 00
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products, for laboratory glassware cleaning.
- Appearance: White to almost white crystals

## S00564 Sodium metaperiodate, extra pure

assay (iodometric) . . . . .min. 99 %  
bromates, bromides, chlorates and  
chlorides (as Cl) . . . . .max. 0,01 %

sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
manganese (Mn). . . . .max. 0,0001 %

Art. No.	Volume	Container
S005641000	1 kg	Ⓟ

## S00565 Sodium metaperiodate, reagent grade, ACS, Reag. Ph Eur

assay (iodometric, on dried  
sample) . . . . .99,8 - 100,3 %  
identity . . . . .passes test  
pH (5 %, H<sub>2</sub>O) . . . . .4,0 - 4,5

other halogens (as Cl) . . . . .max. 0,01 %  
sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
manganese (Mn). . . . .max. 0,0001 %

Art. No.	Volume	Container
S005650100	100 g	Ⓟ
S005650250	250 g	Ⓟ

## Sodium metavanadate

## S00820 Sodium metavanadate, synthesis grade

- Synonyms: Sodium monovanadate, Sodium vanadate(V)
- NaVO<sub>3</sub>
- M = 121,93 g/mol
- CAS [13718-26-8]
- EINECS-No.: 237-272-7
- Solub. in water: (25 °C): ~ 210 g/l
- Melting point: 630 °C
- LD 50 (oral, rat): 98 mg/kg
- ADR: 6.1 T5 III UN 3285

- IMDG: 6.1 III UN 3285
- IATA/ICAO: 6.1 III UN 3285
- GHS-signal word: Danger
- GHS-H sentences: H301 - H315 - H319 - H335
- GHS-P sentences: P261 - P301 + P310 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2841 90 30 00
- Applications: analytical chemistry, laboratory reagent, for the detection of: perborates, synthesis of organic products, photography, manufacturing of inks.

- Appearance: Light yellow solid

**Specifications:**

assay . . . . .min. 96 %

Art. No.	Volume	Container
S008200100	100 g	Ⓟ
S008200250	250 g	Ⓟ

## Sodium molybdate dihydrate

- Na<sub>2</sub>MoO<sub>4</sub>·2H<sub>2</sub>O
- M = 241,95 g/mol
- CAS [10102-40-6]
- EINECS-No.: 231-551-7
- Solub. in water: (20 °C): 840 g/l

- LD 50 (oral, rat): 4233 mg/kg
- Tariff number: 2841 70 00 90
- Applications: analytical chemistry, laboratory reagent, for determination of phosphates; reagent for the following substances detection: alkaloids; for the

synthesis of pigment; corrosion inhibitor, nutrient media for bacterial culture.

## S00489 Sodium molybdate dihydrate, extra pure, Pharmpur®, Ph Eur, BP

assay (on dried sample) . . . . .98 - 100,5 %  
identification . . . . .passes test  
appearance of solution . . . . .clear and colourless  
chlorides (Cl) . . . . .max. 0,005 %  
phosphates (as PO<sub>4</sub>) . . . . .max. 0,02 %

ammonium (NH<sub>4</sub>) . . . . .max. 0,001 %  
heavy metals (as Pb). . . . .max. 0,001 %  
loss on drying (140 °C, 3h). . . . .14 - 16 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S004890100	100 g	Ⓟ
S004890250	250 g	Ⓟ
S004891000	1 kg	Ⓟ

## S00490 Sodium molybdate dihydrate, reagent grade, ACS, Reag. Ph Eur

assay (complexometric) . . . . .99,5 - 103,0 %  
insoluble in water . . . . .max. 0,005 %  
pH (5 %, H<sub>2</sub>O) . . . . .7,0 - 10,5  
chlorides (Cl) . . . . .max. 0,005 %  
nitrates (NO<sub>3</sub>) . . . . .max. 0,005 %  
phosphates (as PO<sub>4</sub>) . . . . .max. 0,0005 %

sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
ammonium (NH<sub>4</sub>) . . . . .max. 0,001 %  
heavy metals (as Pb). . . . .max. 0,0005 %  
iron (Fe) . . . . .max. 0,001 %  
lead (Pb). . . . .max. 0,001 %

Art. No.	Volume	Container
S004900100	100 g	Ⓟ
S004900250	250 g	Ⓟ
S004901000	1 kg	Ⓟ

# Sodium

## Sodium nitrate

- Synonyms: Nitric acid sodium salt
- NaNO<sub>3</sub>
- M = 84,99 g/mol
- CAS [7631-99-4]
- EINECS-No.: 231-554-3
- Solub. in water: (20 °C): soluble
- Melting point: 308 °C

- LD 50 (oral, rat): 1267 mg/kg
- ADR: 5.1 O2 III UN 1498
- IMDG: 5.1 III UN 1498
- IATA/ICAO: 5.1 III UN 1498
- GHS-signal word: Danger
- GHS-H sentences: H272 - H319

- GHS-P sentences: P221 - P210 - P220 - P280 - P305 + P351 + P338 - P501a
- Tariff number: 3102 50 00 90
- Applications: analytical chemistry, laboratory reagent, oxidizing agent, in food industry (E 251), preservative agent.

### S00500 Sodium nitrate, extra pure

assay (acidimetric) . . . . .min. 99 %	calcium (Ca) . . . . .max. 0,005 %
insoluble in water . . . . .max. 0,025 %	copper (Cu) . . . . .max. 0,001 %
pH (5 %, H <sub>2</sub> O) . . . . .5,5 - 8,3	heavy metals (as Pb) . . . . .max. 0,002 %
chlorides (Cl) . . . . .max. 0,025 %	iron (Fe) . . . . .max. 0,001 %
phosphates (as PO <sub>4</sub> ) . . . . .max. 0,001 %	lead (Pb) . . . . .max. 0,001 %
sulfates (SO <sub>4</sub> ) . . . . .max. 0,01 %	magnesium (Mg) . . . . .max. 0,005 %
ammonium (NH <sub>4</sub> ) . . . . .max. 0,005 %	nickel (Ni) . . . . .max. 0,001 %
arsenic (As) . . . . .max. 0,0002 %	loss on drying (105 °C) . . . . .max. 2 %

Art. No.	Volume	Container
S005000500	500 g	Ⓟ
S005001000	1 kg	Ⓟ
S00500005P	5 kg	Ⓟ
S00500025P	25 kg	Ⓟ

### S00501 Sodium nitrate, reagent grade, ACS, ISO

assay (acidimetric) . . . . .min. 99,5 %	ammonium (NH <sub>4</sub> ) . . . . .max. 0,002 %
insoluble in water . . . . .max. 0,005 %	calcium (Ca) . . . . .max. 0,002 %
pH (5 %, H <sub>2</sub> O) . . . . .5,5 - 8,3	copper (Cu) . . . . .max. 0,0005 %
chlorides (Cl) . . . . .max. 0,0005 %	heavy metals (as Pb) . . . . .max. 0,0005 %
iodates (IO <sub>3</sub> ) . . . . .max. 0,0005 %	iron (Fe) . . . . .max. 0,0003 %
nitrites (NO <sub>2</sub> ) . . . . .max. 0,001 %	lead (Pb) . . . . .max. 0,0005 %
phosphates (as PO <sub>4</sub> ) . . . . .max. 0,0005 %	magnesium (Mg) . . . . .max. 0,002 %
sulfates (SO <sub>4</sub> ) . . . . .max. 0,003 %	potassium (K) . . . . .max. 0,01 %

Art. No.	Volume	Container
S005010500	500 g	Ⓟ
S005011000	1 kg	Ⓟ
S00501005P	5 kg	Ⓟ

## Sodium nitrate, volumetric solutions

### S00505 Sodium nitrate, solution 1 mol/l

- NaNO<sub>3</sub>
- M = 84,99 g/mol
- CAS [7631-99-4]
- EINECS-No.: 231-554-3
- Density: 1,0 g/cm<sup>3</sup>
- LD 50 (oral, rat): 1267 mg/kg (pure substance)
- GHS-signal word: Danger

- GHS-H sentences: H272
- GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a
- Tariff number: 3102 50 90 00
- Applications: analytical chemistry, laboratory reagent, oxidizing agent.

**Specifications:**  
1 ml = 0,08499 g NaNO<sub>3</sub>

Art. No.	Volume	Container
S005051000	1 l	Ⓟ

## Sodium nitrite

- NaNO<sub>2</sub>
- M = 69,00 g/mol
- CAS [7632-00-0]
- EINECS-No.: 231-555-9
- Solub. in water: (20 °C): soluble
- Melting point: 280 °C (decomposes)
- Ignition temp.: 489 °C

- LD 50 (oral, rat): 85 mg/kg
- EC-Index-No.: 007-010-00-4
- ADR: 5.1 OT2 III UN 1500
- IMDG: 5.1 III UN 1500
- IATA/ICAO: 5.1 III UN 1500
- GHS-signal word: Danger
- GHS-H sentences: H301 - H272 - H400

- GHS-P sentences: P221 - P210 - P301 + P310 - P321 - P405 - P501a
- Tariff number: 2834 10 00 00
- Applications: analytical chemistry, laboratory reagent, oxidizing agent, synthesis of organic products, manufacture of dyes (in the textile industry), photography, in food industry.

### S00510 Sodium nitrite, synthesis grade

assay (iodometric) . . . . .min. 98 %

Art. No.	Volume	Container
S005100500	500 g	Ⓟ
S005101000	1 kg	Ⓟ
S00510005P	5 kg	Ⓟ

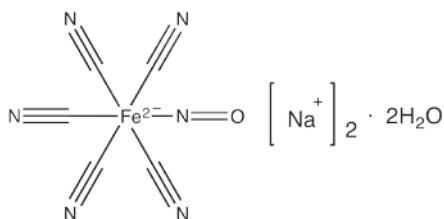
### S00512 Sodium nitrite, reagent grade, ACS

assay (permanganometric) . . . . .min. 99 %	heavy metals (as Pb) . . . . .max. 0,001 %
insoluble in water . . . . .max. 0,01 %	iron (Fe) . . . . .max. 0,001 %
chlorides (Cl) . . . . .max. 0,005 %	potassium (K) . . . . .max. 0,001 %
sulfates (SO <sub>4</sub> ) . . . . .max. 0,005 %	
calcium (Ca) . . . . .max. 0,002 %	

Art. No.	Volume	Container
S005120500	500 g	Ⓟ
S005121000	1 kg	Ⓟ
S00512005P	5 kg	Ⓟ

## Sodium nitroprusside dihydrate

## S00520 Sodium nitroprusside dihydrate, reagent grade, ACS



- Synonyms: Disodiumpentacyanonitrosylferrate(II) dihydrate, Disodiumnitrosylpentacyanoferrate(II) dihydrate, Sodium nitroferrocyanide, Nitroprusside sodium
- $\text{Na}_2[\text{Fe}(\text{CN})_5\text{NO}] \cdot 2\text{H}_2\text{O}$
- $M = 297,95 \text{ g/mol}$
- CAS [13755-38-9]
- EINECS-No.: 238-373-9
- Solub. in water: (20 °C): 400 g/l
- LD 50 (oral, rat): 99 mg/kg
- ADR: 6.1 T5 II UN 1588
- IMDG: 6.1 II UN 1588
- IATA/ICAO: 6.1 II UN 1588
- GHS-signal word: Danger
- GHS-H sentences: H301
- GHS-P sentences: P264 - P270 - P301 + P310 - P321 - P405 - P501a

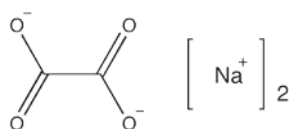
- Tariff number: 2837 20 00 00
- Applications: reagent for organic compounds detection.

**Specifications:**

assay (argentometric) . . . . . 99 - 102 %  
 identity . . . . . passes test  
 insoluble in water . . . . . max. 0,01 %  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,01 %

Art. No.	Volume	Container
S005200100	100 g	
S005200250	250 g	
S005200500	500 g	

## di-Sodium oxalate



- Synonyms: Oxalic acid sodium salt, Soerensen's buffer substances
- $\text{Na}_2\text{C}_2\text{O}_4$
- $M = 134,01 \text{ g/mol}$
- CAS [62-76-0]
- EINECS-No.: 200-550-3
- Solub. in water: (20 °C): 37 g/l
- Melting point: 250 - 270 °C (decomposes)
- LD 50 (oral, rat): 7500 mg/kg (oxalic acid)

- EC-Index-No.: 607-007-00-3
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312
- GHS-P sentences: P280 - P322 - P301 + P312 - P312 - P363 - P501a
- Tariff number: 2917 11 00 99
- Applications: analytical chemistry, reference material.
- Appearance: White solid

## S00529 di-Sodium oxalate, extra pure



assay (permanganometric) . . . . . min. 99 %  
 insoluble in water . . . . . max. 0,025 %  
 chlorides (Cl) . . . . . max. 0,01 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,01 %  
 ammonium ( $\text{NH}_4$ ) . . . . . max. 0,005 %  
 copper (Cu) . . . . . max. 0,003 %

iron (Fe) . . . . . max. 0,003 %  
 lead (Pb) . . . . . max. 0,003 %  
 nickel (Ni) . . . . . max. 0,003 %

Art. No.	Volume	Container
S005290500	500 g	
S005291000	1 kg	
S00529005P	5 kg	
S00529025P	25 kg	

## S00530 di-Sodium oxalate, reagent grade, ACS, Reag. Ph Eur



assay (permanganometric) . . . . . min. 99,8 %  
 insoluble matter . . . . . max. 0,005 %  
 acidity . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,002 %  
 phosphates (as  $\text{PO}_4$ ) . . . . . max. 0,005 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,002 %  
 total nitrogen (as N) . . . . . max. 0,001 %

ammonium ( $\text{NH}_4$ ) . . . . . max. 0,002 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,001 %  
 potassium (K) . . . . . max. 0,005 %  
 substances darkened by  $\text{H}_2\text{SO}_4$  . . . . . passes test  
 loss on drying (105 °C) . . . . . max. 0,01 %

Art. No.	Volume	Container
S005300500	500 g	
S005301000	1 kg	
S00530005P	5 kg	

## S00531 di-Sodium oxalate, secondary standard for volumetric titrations, Titrasure®



assay (on dried sample) . . . . . min. 99,7 %  
 insoluble in water . . . . . max. 0,005 %  
 neutrality . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,002 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,002 %

ammonium ( $\text{NH}_4$ ) . . . . . max. 0,002 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,001 %  
 potassium (K) . . . . . max. 0,005 %  
 substances darkened by  $\text{H}_2\text{SO}_4$  . . . . . passes test

loss on drying . . . . . max. 0,01 %

Art. No.	Volume	Container
S005310080	80 g	

## Sodium perchlorate monohydrate

## S00535 Sodium perchlorate monohydrate, extra pure, Reag. Ph Eur



- $\text{NaClO}_4 \cdot \text{H}_2\text{O}$
- $M = 140,46 \text{ g/mol}$
- CAS [7791-07-3]
- EINECS-No.: 231-511-9
- Solub. in water: (20 °C): soluble
- Melting point: 130 °C
- LD 50 (oral, rat): 2100 mg/kg (anhydrous substance)
- EC-Index-No.: 017-010-00-6
- ADR: 5.1 O2 II UN 1502
- IMDG: 5.1 II UN 1502
- IATA/ICAO: 5.1 II UN 1502

- GHS-signal word: Danger
- GHS-H sentences: H271 - H302
- GHS-P sentences: P221 - P283 - P210 - P306 + P360 - P371 + P380 + P375 - P501a
- Tariff number: 2829 90 10 00
- Applications: analytical chemistry, laboratory reagent, oxidizing agent, precipitant for potassium.

total nitrogen (as N) . . . . . max. 0,001 %  
 chlorides and chlorates (as Cl) . . . . . max. 0,005 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,005 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 calcium (Ca) . . . . . max. 0,005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 potassium (K) . . . . . max. 0,01 %

**Specifications:**

assay (argentometric) . . . . . min. 99 %  
 pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 4,5 - 7

Art. No.	Volume	Container
S005350500	500 g	

# Sodium

## Sodium peroxide

### S00555 Sodium peroxide, extra pure



- Na<sub>2</sub>O<sub>2</sub>
- M = 77,98 g/mol
- CAS [1313-60-6]
- EINECS-No.: 215-209-4
- Solub. in water: (20 °C): 100 g/l (decomposes)
- Melting point: 460 °C
- Boiling point: 657 °C (decomposes)
- EC-Index-No.: 011-003-00-1
- ADR: 5.1 O2 I UN 1504
- IMDG: 5.1 I UN 1504
- IATA/ICAO: 5.1 I UN 1504
- GHS-signal word: Danger

- GHS-H sentences: H271 - H314
- GHS-P sentences: P221 - P283 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2815 30 00 00
- Applications: oxidizing agent, synthesis of organic products, manufacture of dyes (in the textile industry).

sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
 total nitrogen (as N) . . . . .max. 0,005 %  
 aluminium (Al) . . . . .max. 0,005 %  
 heavy metals (as Pb) . . . . .max. 0,005 %  
 iron (Fe) . . . . .max. 0,005 %

#### Specifications:

assay (permanganometric) . . . . .min. 95 %  
 chlorides (Cl) . . . . .max. 0,005 %  
 phosphates (as PO<sub>4</sub>) . . . . .max. 0,002 %

Art. No.	Volume	Container
S005550100	100 g	P
S005550250	250 g	P
S005551000	1 kg	P

## Sodium peroxodisulfate

### S00540 Sodium peroxodisulfate, extra pure



- Synonyms: Sodium persulfate, Peroxydisulfuric acid disodium salt
- Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>
- M = 238,09 g/mol
- CAS [7775-27-1]
- EINECS-No.: 231-892-1
- Solub. in water: (20 °C): 545 g/l
- LD 50 (oral, rat): 920 mg/kg
- ADR: 5.1 O2 III UN 1505
- IMDG: 5.1 III UN 1505
- IATA/ICAO: 5.1 III UN 1505
- GHS-signal word: Danger
- GHS-H sentences: H272 - H334 - H302 - H335 - H315 - H319 - H317

- GHS-P sentences: P221 - P210 - P285 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2833 40 00 10
- Applications: analytical chemistry, laboratory reagent, oxidizing agent, in the electronic industry, for determination of TOC.
- Appearance: White to almost white crystals

copper (Cu) . . . . .max. 0,002 %  
 iron (Fe) . . . . .max. 0,002 %  
 lead (Pb) . . . . .max. 0,002 %  
 magnesium (Mg) . . . . .max. 0,01 %  
 nickel (Ni) . . . . .max. 0,002 %

#### Specifications:

assay (iodometric) . . . . .min. 98 %  
 insoluble in water . . . . .max. 0,05 %  
 Cl compounds (as Cl) . . . . .max. 0,05 %  
 nitrogen compounds (as N) . . . . .max. 0,1 %  
 calcium (Ca) . . . . .max. 0,01 %

Art. No.	Volume	Container
S005400100	100 g	P
S005401000	1 kg	P
S00540005P	5 kg	P

## Sodium peroxodisulfate solution 14% w/v + ortho-Phosphoric acid 0,73% w/v in water

### S01151 Sodium peroxodisulfate solution 14% w/v + ortho-Phosphoric acid 0,73% w/v in water



- ADR: 5.1 O1 III UN 3139
- IMDG: 5.1 III UN 3139
- IATA/ICAO: 5.1 III UN 3139
- GHS-signal word: Danger
- GHS-H sentences: H272 - H334 - H315 - H319 - H317
- GHS-P sentences: P221 - P210 - P285 - P305 + P351 + P338 - P321 - P501a

- Tariff number: 3822 00 00 00
- Applications: for determination of TOC.

#### Specifications:

composition of 1 liter:  
 sodium peroxodisulfate . . . . .140 g  
 ortho-phosphoric acid 85 % . . . . .5 ml  
 water . . . . .932 ml

Art. No.	Volume	Container
S01151005P	5 l	P
S01151025P	25 l	P

## tri-Sodium phosphate anhydrous

### S00342 tri-Sodium phosphate anhydrous, extra pure



- Synonyms: tri-Sodium orthophosphate, TSP, Sodium phosphate tribasic
- Na<sub>3</sub>PO<sub>4</sub>
- M = 163,94 g/mol
- CAS [7601-54-9]
- EINECS-No.: 231-509-8
- Solub. in water: (20 °C): 88 g/l
- Melting point: 75 °C (decomposes)
- ADR: 8 C6 III UN 3262
- IMDG: 8 III UN 3262
- IATA/ICAO: 8 III UN 3262
- GHS-signal word: Danger

- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2835 23 00 00
- Applications: in food industry, photography, in the paper industry.

total nitrogen (as N) . . . . .max. 0,001 %  
 arsenic (As) . . . . .max. 0,0001 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %

#### Specifications:

assay (acidimetric) . . . . .min. 97 %  
 insoluble in water . . . . .max. 0,05 %  
 free alkali (as NaOH) . . . . .max. 2 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %

Art. No.	Volume	Container
S003420250	250 g	P
S003420500	500	P
S003421000	1 kg	P

## tri-Sodium phosphate dodecahydrate

### S00340 tri-Sodium phosphate dodecahydrate, reagent grade, ACS



- Synonyms: Trisodium phosphate, Sodium phosphate tribasic
- Na<sub>3</sub>PO<sub>4</sub>·12H<sub>2</sub>O
- M = 380,12 g/mol
- CAS [10101-89-0]
- EINECS-No.: 231-509-8
- Solub. in water: (20 °C): 285 g/l
- Melting point: 75 °C
- ADR: 8 C6 III UN 3262
- IMDG: 8 III UN 3262
- IATA/ICAO: 8 III UN 3262
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2835 23 00 00
- Applications: analytical chemistry, laboratory reagent, detergent, disinfectant.

sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %  
 total nitrogen (as N) . . . . .max. 0,001 %  
 heavy metals (as Pb) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,001 %

#### Specifications:

assay (acidimetric) . . . . .98 - 102 %  
 insoluble in water . . . . .max. 0,01 %  
 free alkali (as NaOH) . . . . .max. 2,5 %  
 chlorides (Cl) . . . . .max. 0,0005 %  
 fluorides (F) . . . . .max. 0,0005 %

Art. No.	Volume	Container
S003400500	500 g	P
S003401000	1 kg	P
S00340005P	5 kg	P
S00340025P	25 kg	P

## tri-Sodium phosphate monohydrate

## S00341 tri-Sodium phosphate monohydrate, extra pure

- Synonyms: Trisodium phosphate, Sodium phosphate tribasic
- $\text{Na}_3\text{PO}_4 \cdot \text{H}_2\text{O}$
- $M = 181,96 \text{ g/mol}$
- EINECS-No.: 231-509-8
- Solub. in water: (20 °C): soluble
- LD 50 (oral, rat): 7400 mg/kg
- ADR: 8 C6 III UN 3262
- IMDG: 8 III UN 3262
- IATA/ICAO: 8 III UN 3262
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2835 23 00 00
- Applications: analytical chemistry, in food industry.

**Specifications:**

assay (acidimetric) .....min. 98 %  
 insoluble in water .....max. 0,05 %  
 chlorides (Cl) .....max. 0,02 %  
 sulfates ( $\text{SO}_4$ ) .....max. 0,05 %  
 nitrogen compounds (as N) .....max. 0,005 %  
 copper (Cu) .....max. 0,003 %

arsenic (As) .....max. 0,0005 %  
 iron (Fe) .....max. 0,003 %  
 lead (Pb) .....max. 0,003 %  
 nickel (Ni) .....max. 0,003 %

Art. No.	Volume	Container
S003410500	500 g	
S003411000	1 kg	
S00341005P	5 kg	
S00341025P	25 kg	

## Sodium phosphinate monohydrate

## S00435 Sodium phosphinate monohydrate, extra pure, Reag. Ph Eur

- Synonyms: Sodium hypophosphite monohydrate
- $\text{NaH}_2\text{PO}_2 \cdot \text{H}_2\text{O}$
- $M = 105,99 \text{ g/mol}$
- CAS [10039-56-2]
- EINECS-No.: 231-669-9
- Solub. in water: (20 °C): soluble
- Melting point: > 90 °C (decomposes)
- Tariff number: 2835 10 00 10
- Applications: analytical chemistry, laboratory reagent, in buffer solutions.

**Specifications:**

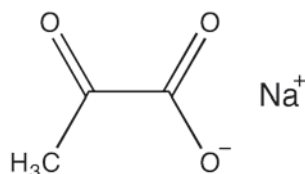
assay (bromometric) .....min. 99 %  
 appearance of solution .....passes test  
 acidity .....passes test  
 chlorides (Cl) .....max. 0,02 %  
 phosphates, phosphites .....passes test  
 sulfates ( $\text{SO}_4$ ) .....max. 0,02 %  
 arsenic (As) .....max. 0,0002 %  
 calcium (Ca) .....max. 0,02 %  
 heavy metals (as Pb) .....max. 0,0005 %

iron (Fe) .....max. 0,0005 %

Art. No.	Volume	Container
S004350250	250 g	
S004351000	1 kg	

## Sodium pyruvate

## S00590 Sodium pyruvate, for microbiology



- Synonyms: Piruvic acid, sodium salt
- $\text{C}_3\text{H}_3\text{NaO}_3$
- $M = 110,05 \text{ g/mol}$
- CAS [113-24-6]
- EINECS-No.: 204-24-4
- Melting point: 220 - 230 °C
- LD 50 (oral, rat): 5600 mg/Kg
- Tariff number: 2918 30 00 00

**Specifications:**

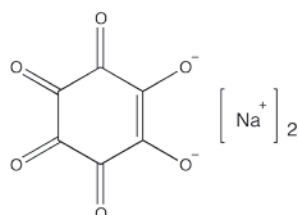
assay (titration with  $\text{HClO}_4$ ) .....min. 99 %

chlorides (Cl) .....max. 0,002 %  
 sulfates ( $\text{SO}_4$ ) .....max. 0,002 %  
 arsenic (As) .....max. 0,0001 %  
 heavy metals (as Pb) .....max. 0,001 %  
 loss on drying (105 °C) .....max. 0,5 %  
 suitability for microbiology .....passes test

Art. No.	Volume	Container
S005900100	100 g	
S005900500	500 g	

## Sodium rhodizonate

## S00615 Sodium rhodizonate, indicator for metal titration, reagent grade



- Synonyms: 1,2-Dihydroxy-3,4,5,6-tetraoxo-1-cyclohexene disodium salt
- $\text{C}_6\text{Na}_2\text{O}_6$
- $M = 214,04 \text{ g/mol}$
- CAS [523-21-7]
- EINECS-No.: 208-340-3
- Solub. in water: (20 °C): sparingly soluble
- Tariff number: 2914 40 90 00
- Applications: analytical chemistry, indicator, for the detection of: barium, lead, tin, strontium, sulfates.

**Specifications:**

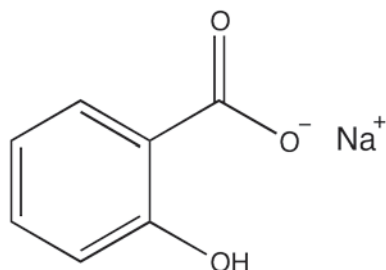
assay (titration with  $\text{HClO}_4$ ) .....min. 98,5 %  
 identity (IR-spectrum) .....passes test  
 suitability for detection of Ba .....passes test  
 suitability as indicator for sulfate titration .....passes test

Art. No.	Volume	Container
S006150001	1 g	

# Sodium

## Sodium salicylate

### S00633 Sodium salicylate, reagent grade



- Synonyms: Salicylic acid sodium salt
- $C_7H_5NaO_3$
- M = 160,11 g/mol
- CAS [54-21-7]
- EINECS-No.: 200-198-0
- Solub. in water: (20 °C): soluble
- Melting point: 200 °C
- Ignition temp.: > 250 °C
- LD 50 (oral, rat): 930 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302 - H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P301 + P312 - P337 + P313 - P501a
- Tariff number: 2918 21 00 00
- Applications: analytical chemistry, for the detection of: glucose (urine).

#### Specifications:

assay (titration with  $HClO_4$  on dried sample) . . . . .min. 99 %  
identity (IR-spectrum) . . . . .passes test

appearance of solution (10 %,  $H_2O$ ) . . . . .passes test  
insoluble in water . . . . .max. 0,02 %  
chlorides (Cl) . . . . .max. 0,002 %  
sulfates ( $SO_4$ ) . . . . .max. 0,01 %  
cadmium (Cd) . . . . .max. 0,0005 %  
calcium (Ca) . . . . .max. 0,005 %  
cobalt (Co) . . . . .max. 0,0005 %  
copper (Cu) . . . . .max. 0,0005 %  
heavy metals (as Pb) . . . . .max. 0,001 %  
iron (Fe) . . . . .max. 0,001 %  
lead (Pb) . . . . .max. 0,0005 %  
magnesium (Mg) . . . . .max. 0,001 %  
nickel (Ni) . . . . .max. 0,0005 %  
zinc (Zn) . . . . .max. 0,0005 %  
loss on drying (105 °C) . . . . .max. 0,2 %

Art. No.	Volume	Container
S006330250	250 g	Ⓐ
S006331000	1 kg	Ⓐ
S00633005P	5 kg	Ⓐ

## Sodium silicate, neutral solution

### S00640 Sodium silicate, neutral solution, pure

- $Na_2SiO_3$
- M = 122,07 g/mol
- CAS [1344-09-8]
- EINECS-No.: 215-687-4
- Density: 1,37 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): > 2000 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H318 - H302 - H335 - H315

- GHS-P sentences: P261 - P305 + P351 + P338 - P310 - P321 - P405 - P501a
- Tariff number: 2839 19 00 00
- Applications: analytical chemistry, manufacturing of: detergent, in the textile industry, in the paper industry, manufacture of adhesives.

#### Specifications:

density (20°/4°) . . . . .1,350 - 1,380  
pH (5 %,  $H_2O$ ) . . . . .< 11,5

copper (Cu) . . . . .max. 0,005 %  
lead (Pb) . . . . .max. 0,005 %  
nickel (Ni) . . . . .max. 0,005 %

Art. No.	Volume	Container
S006401000	1 l	Ⓐ
S006402500	2,5 l	Ⓐ
S00640005P	5 l	Ⓐ

## Sodium sulfate anhydrous

- Synonyms: Sulfuric acid sodium salt
- $Na_2SO_4$
- M = 142,04 g/mol
- CAS [7757-82-6]

- EINECS-No.: 231-820-9
- Solub. in water: (20 °C): 160 g/l
- Melting point: 888 °C
- Boiling point: > 890 °C (decomposes)

- Tariff number: 2833 11 00 00
- Applications: analytical chemistry, organic solvents drying.

### S00665 Sodium sulfate anhydrous, powder, extra pure, Pharmpur®, Ph Eur

assay (on dried sample) . . . . .98,5 - 101 %  
identification . . . . .passes test  
appearance of solution . . . . .clear and colourless  
acidity or alkalinity . . . . .passes test  
chlorides (Cl) . . . . .max. 0,045 %  
calcium (Ca) . . . . .max. 0,045 %  
heavy metals (as Pb) . . . . .max. 0,0045 %  
iron (Fe) . . . . .max. 0,009 %

magnesium (Mg) . . . . .max. 0,02 %  
loss on drying (130 °C) . . . . .max. 0,5 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S006650500	500 g	Ⓐ
S006651000	1 kg	Ⓐ
S006652500	2,5 kg	Ⓐ
S00665005P	5 kg	Ⓐ
S00665025P	25 kg	Ⓐ

### S00664 Sodium sulfate anhydrous, powder, reagent grade, ACS, ISO, Reag. Ph Eur

assay . . . . .min. 99 %  
identity . . . . .passes test  
insoluble in water . . . . .max. 0,01 %  
pH (5 %,  $H_2O$ ) . . . . .5,0 - 9,2  
free acid (as  $H_2SO_4$ ) . . . . .max. 0,05 %  
free alkali (as NaOH) . . . . .max. 0,03 %  
total nitrogen (as N) . . . . .max. 0,0005 %  
chlorides (Cl) . . . . .max. 0,001 %

phosphates (as  $PO_4$ ) . . . . .max. 0,001 %  
arsenic (As) . . . . .max. 0,0001 %  
calcium (Ca) . . . . .max. 0,005 %  
heavy metals (as Pb) . . . . .max. 0,0005 %  
iron (Fe) . . . . .max. 0,0005 %  
magnesium (Mg) . . . . .max. 0,001 %  
potassium (K) . . . . .max. 0,002 %  
zinc (Zn) . . . . .max. 0,01 %

loss on drying (130 °C) . . . . .max. 0,5 %  
loss on ignition (600 °C) . . . . .max. 0,5 %

Art. No.	Volume	Container
S006640500	500 g	Ⓐ
S006641000	1 kg	Ⓐ
S00664005P	5 kg	Ⓐ

### S00667 Sodium sulfate anhydrous, granulated, reagent grade, ACS, ISO

assay . . . . .min. 99 %  
identity . . . . .passes test  
appearance of solution (10 %,  $H_2O$ ) . . . . .passes test  
insoluble in water . . . . .max. 0,01 %  
pH (5 %,  $H_2O$ ) . . . . .5,2 - 8,0  
acidity or alkalinity . . . . .passes test  
chlorides (Cl) . . . . .max. 0,001 %  
phosphates (as  $PO_4$ ) . . . . .max. 0,001 %  
total nitrogen (as N) . . . . .max. 0,0005 %

arsenic (As) . . . . .max. 0,0001 %  
calcium (Ca) . . . . .max. 0,005 %  
heavy metals (as Pb) . . . . .max. 0,0005 %  
iron (Fe) . . . . .max. 0,0005 %  
magnesium (Mg) . . . . .max. 0,001 %  
potassium (K) . . . . .max. 0,002 %  
zinc (Zn) . . . . .max. 0,002 %  
loss on ignition (600 °C) . . . . .max. 0,5 %

Art. No.	Volume	Container
S006670500	500 g	Ⓐ
S006671000	1 kg	Ⓐ
S006672500	2,5 kg	Ⓐ
S00667005P	5 kg	Ⓐ
S00667025P	25 kg	Ⓐ

**S00670 Sodium sulfate anhydrous, for GC residue analysis**

assay . . . . . min. 99,5 %  
 loss on drying (105 °C) . . . . . max. 0,2 %  
 Suitable for pesticide residue analysis.

Art. No.	Volume	Container
S006701000	1 kg	P
S006702500	2,5 kg	P
S00670005P	5 kg	P

**Sodium sulfate decahydrate****S00671 Sodium sulfate decahydrate, extra pure, Pharmapur®, Ph Eur, BP, USP**

- Synonyms: Glauber's salt
- $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$
- M = 322,19 g/mol
- CAS [7727-73-3]
- EINECS-No.: 231-820-9
- Solub. in water: (20 °C): ~ 900 g/l
- Melting point: 32,4 °C
- Boiling point: > 890 °C (anhydrous substance, decomposes)
- Tariff number: 2833 11 00 00
- Applications: analytical chemistry, laboratory reagent, in food industry (E 514), manufacture of dyes, in pharma industry.

**Specifications:**

assay (on dried sample) . . . . . 98,5 - 101 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 acidity or alkalinity . . . . . passes test  
 chlorides (Cl) . . . . . max. 0,02 %  
 calcium (Ca) . . . . . max. 0,002 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,004 %  
 magnesium (Mg) . . . . . max. 0,01 %  
 loss on drying (130 °C) . . . . . 51 - 57 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S006710500	500 g	P
S006711000	1 kg	P
S00671005P	5 kg	P
S00671025P	25 kg	P

**Sodium sulfide hydrate****S00673 Sodium sulfide hydrate, synthesis grade**

- $\text{Na}_2\text{S} \cdot x\text{H}_2\text{O}$  (x = 2 - 3)
- M = 78,04 g/mol
- CAS [1313-84-4]
- EINECS-No.: 215-211-5
- Melting point: 920 °C (anhydrous substance)
- LD 50 (oral, rat): 208 mg/kg (anhydrous substance)
- ADR: 6.1 TC4 II UN 3290
- IMDG: 6.1 II UN 3290
- IATA/ICAO: 6.1 II UN 3290

- GHS-signal word: Danger
- GHS-H sentences: H311 - H314 - H400 - H302 - EUH031
- GHS-P sentences: P303 + P361 + P353 - P305 + P351 + P338 - P310 - P361 - P405 - P501a
- Tariff number: 2830 10 00 90

**Specifications:**

assay (iodometric,  $\text{Na}_2\text{S}$ ) . . . . . 60 - 62 %

carbonates ( $\text{CO}_3$ ) . . . . . max. 1,2 %  
 sulfites ( $\text{SO}_3$ ) . . . . . max. 0,5 %  
 thiosulfates ( $\text{S}_2\text{O}_3$ ) . . . . . max. 2 %

Art. No.	Volume	Container
S006730500	500 g	P
S006731000	1 kg	P

**Sodium sulfite**

- $\text{Na}_2\text{SO}_3$
- M = 126,04 g/mol
- CAS [7757-83-7]
- EINECS-No.: 231-821-4
- Solub. in water: (20 °C): 220 g/l
- Melting point: > 500 °C (decomposes)

- LD 50 (oral, rat): 2610 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H334 - H317 - H413 - EUH031
- GHS-P sentences: P285 - P261 - P280 - P321 - P342 + P311 - P501a
- Tariff number: 2832 10 00 00

- Applications: analytical chemistry, laboratory reagent, solvents (in the cellulose industry), antibacterian, absorbent for nitrogen oxides (gases).

**S00672 Sodium sulfite, extra pure, Pharmapur®, Ph Eur, BP**

assay (iodometric) . . . . . 95 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 insoluble in water . . . . . passes test  
 thiosulfates ( $\text{S}_2\text{O}_3$ ) . . . . . max. 0,1 %  
 heavy metals (as Pb) . . . . . max. 0,001 %

iron (Fe) . . . . . max. 0,001 %  
 selenium (Se) . . . . . max. 0,001 %  
 zinc (Zn) . . . . . max. 0,0025 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S006720500	500 g	P
S006721000	1 kg	P
S00672005P	5 kg	P
S00672025P	25 kg	P

**S00669 Sodium sulfite, reagent grade, ACS, Reag. Ph Eur**

assay (iodometric) . . . . . min. 98 %  
 identity . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . max. 0,005 %  
 acidity . . . . . passes test  
 alkalinity . . . . . max. 0,03 meq/g  
 chlorides (Cl) . . . . . max. 0,02 %

thiosulfates ( $\text{S}_2\text{O}_3$ ) . . . . . max. 0,1 %  
 arsenic (As) . . . . . max. 0,0001 %  
 copper (Cu) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,001 %  
 lead (Pb) . . . . . max. 0,0005 %  
 selenium (Se) . . . . . max. 0,001 %

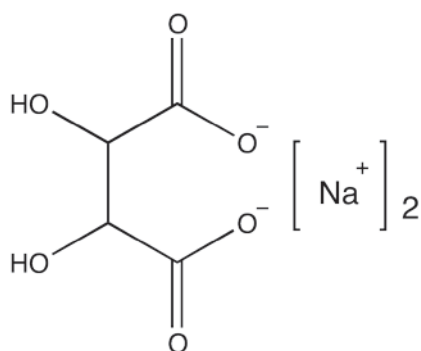
zinc (Zn) . . . . . max. 0,001 %

Art. No.	Volume	Container
S006690500	500 g	P
S006691000	1 kg	P
S00669005P	5 kg	P

# Sodium

## di-Sodium tartrate, anhydrous

### S00701 di-Sodium tartrate, anhydrous, reagent grade



- Synonyms: Tartaric acid disodium salt
- $C_4H_4Na_2O_6$
- $M = 194,06 \text{ g/mol}$
- CAS [868-18-8]
- EINECS-No.: 212-773-3
- Solub. in water: (20 °C): soluble
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2918 13 00 90
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products, for pharmaceuticals synthesizing, cosmetics.

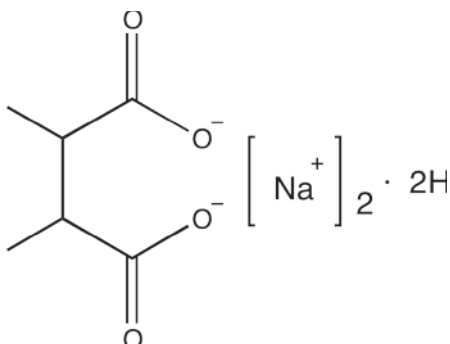
**Specifications:**  
 assay (titration with  $HClO_4$ ) .....min. 99 %  
 insoluble in water .....max. 0,005 %  
 pH (5 %,  $H_2O$ ) .....7,0 - 9,0  
 chlorides (Cl) .....max. 0,005 %

phosphates (as  $PO_4$ ) .....max. 0,005 %  
 sulfates ( $SO_4$ ) .....max. 0,005 %  
 ammonium ( $NH_4$ ) .....max. 0,003 %  
 arsenic (As) .....max. 0,00005 %  
 calcium (Ca) .....max. 0,005 %  
 copper (Cu) .....max. 0,0005 %  
 iron (Fe) .....max. 0,001 %  
 lead (Pb) .....max. 0,0005 %  
 nickel (Ni) .....max. 0,0005 %  
 potassium (K) .....max. 0,002 %  
 loss on drying (150 °C) .....max. 0,5 %

Art. No.	Volume	Container
S007010250	250 g	Ⓖ
S007010500	500 g	Ⓖ
S007011000	1 kg	Ⓖ
S00701005P	5 kg	Ⓖ

## di-Sodium tartrate dihydrate

### S00700 di-Sodium tartrate dihydrate, reagent grade, ACS



- Synonyms: Tartaric acid sodium salt dihydrate
- $C_4H_4Na_2O_6 \cdot 2H_2O$
- $M = 230,08 \text{ g/mol}$
- CAS [6106-24-7]
- EINECS-No.: 212-773-3
- Solub. in water: (20 °C): 290 g/l
- Melting point: 154 °C
- LD 50 (oral, rat): 1290 mg/kg
- Tariff number: 2918 13 00 90
- Applications: analytical chemistry, laboratory reagent.

**Specifications:**  
 assay (titration with  $HClO_4$ ) .....99,5 - 101,0 %  
 insoluble in water .....max. 0,005 %  
 pH (5 %,  $H_2O$ ) .....7,0 - 8,0  
 chlorides (Cl) .....max. 0,0005 %

phosphates (as  $PO_4$ ) .....max. 0,0005 %  
 sulfates ( $SO_4$ ) .....max. 0,002 %  
 total nitrogen (as N) .....max. 0,002 %  
 ammonium ( $NH_4$ ) .....max. 0,003 %  
 calcium (Ca) .....max. 0,005 %  
 heavy metals (as Pb) .....max. 0,0005 %  
 iron (Fe) .....max. 0,0005 %  
 loss on drying (150 °C, min 4h) .....15,61 - 15,71 %

Art. No.	Volume	Container
S007000250	250 g	Ⓖ
S007000500	500 g	Ⓖ
S007001000	1 kg	Ⓖ
S00700005P	5 kg	Ⓖ

## di-Sodium tetraborate anhydrous

### S00704 di-Sodium tetraborate anhydrous, extra pure

- Synonyms: Sodium baborate, Sodium borate, Borax
- $Na_2B_4O_7$
- $M = 201,22 \text{ g/mol}$
- CAS [1330-43-4]
- EINECS-No.: 215-540-4
- Solub. in water: (20 °C): 25,6 g/l
- Melting point: 742 °C
- Boiling point: 1575 °C (decomposes)
- Vapour pressure: (1200 °C) 7,3 hPa
- LD 50 (oral, rat): 2660 mg/kg (decahydrate substance)
- GHS-signal word: Danger
- GHS-H sentences: H360FD

- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2840 11 00 00
- Applications: in radiology applications, synthesis of organic products, cosmetics, for pharmaceuticals synthesizing.

**Specifications:**  
 assay (acidimetric) .....min. 98 %  
 insoluble in water .....max. 0,05 %  
 chlorides (Cl) .....max. 0,05 %  
 phosphates (as  $PO_4$ ) .....max. 0,005 %  
 sulfates ( $SO_4$ ) .....max. 0,05 %

calcium (Ca) .....max. 0,02 %  
 copper (Cu) .....max. 0,005 %  
 heavy metals (as Pb) .....max. 0,005 %  
 iron (Fe) .....max. 0,005 %  
 lead (Pb) .....max. 0,005 %  
 magnesium (Mg) .....max. 0,02 %  
 nickel (Ni) .....max. 0,005 %  
 potassium (K) .....max. 0,05 %

Art. No.	Volume	Container
S007041000	1 kg	Ⓖ
S00704005P	5 kg	Ⓖ

## di-Sodium tetraborate decahydrate

- Synonyms: Borax, Sodium baborate decahydrate, Sodium borate decahydrate
- $Na_2B_4O_7 \cdot 10H_2O$
- $M = 381,37 \text{ g/mol}$
- CAS [1303-96-4]
- EINECS-No.: 215-540-4

- Solub. in water: (20 °C): 51,4 g/l
- Melting point: 75 °C
- Boiling point: 1575 °C (anhydrous)
- Vapour pressure: (20 °C) 0,213 hPa
- LD 50 (oral, rat): 2660 mg/kg
- GHS-signal word: Danger

- GHS-H sentences: H360FD
- GHS-P sentences: P281 - P201 - P202 - P308 + P313 - P405 - P501a
- Tariff number: 2840 19 90 00
- Applications: reference material, for calibrating pH-meters, for pharmaceuticals synthesizing.

### S00705 di-Sodium tetraborate decahydrate, extra pure, Pharpur®, Ph Eur, BP, NF

assay (acidimetric) .....99 - 103 %  
 identification .....passes test  
 appearance of solution .....clear and colourless  
 pH (4 %,  $H_2O$ ) .....9,0 - 9,6  
 carbonate, bicarbonate .....passes test  
 sulfates ( $SO_4$ ) .....max. 0,005 %

ammonium ( $NH_4$ ) .....max. 0,001 %  
 arsenic (As) .....max. 0,0005 %  
 calcium (Ca) .....max. 0,01 %  
 heavy metals (as Pb) .....max. 0,0025 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S007050500	500 g	Ⓖ
S007051000	1 kg	Ⓖ



**S00708 di-Sodium tetraborate decahydrate, crystallized, Pharmpur®, Ph Eur, GMP, suitable for use as excipient**

assay (acidimetric) . . . . . 99 - 103 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 pH (4 %, H<sub>2</sub>O) . . . . . 9,0 - 9,6  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,001 %  
 arsenic (As) . . . . . max. 0,0005 %

calcium (Ca) . . . . . max. 0,01 %  
 heavy metals (as Pb) . . . . . max. 0,0025 %  
 residual solvents (ICH) . . . . . excluded by  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.  
 Suitable for use as excipient according to require-  
 ments of GMP.

Art. No.	Volume	Container
S007081000	1 kg	
S00708025P	25 kg	

**S00707 di-Sodium tetraborate decahydrate, reagent grade, ACS, ISO**

assay (acidimetric) . . . . . 99,5 - 105,0 %  
 identity . . . . . passes test  
 appearance of solution . . . . . clear  
 insoluble in water . . . . . max. 0,005 %  
 pH (0,01 M, H<sub>2</sub>O) . . . . . 9,15 - 9,20  
 chlorides (Cl) . . . . . max. 0,001 %  
 phosphates (as PO<sub>4</sub>) . . . . . max. 0,001 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,005 %

ammonium (NH<sub>4</sub>) . . . . . max. 0,001 %  
 arsenic (As) . . . . . max. 0,0005 %  
 calcium (Ca) . . . . . max. 0,005 %  
 copper (Cu) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0005 %

Art. No.	Volume	Container
S007070250	250 g	
S007070500	500 g	
S007071000	1 kg	
S00707005P	5 kg	

**Sodium tetrachloroaurate(III) dihydrate****OR0060 Sodium tetrachloroaurate(III) dihydrate, extra pure**

- Synonyms: Gold sodium chloride
- NaAuCl<sub>4</sub>·2H<sub>2</sub>O
- M = 397,80 g/mol
- CAS [13874-02-7]
- EINECS-No.: 240-948-4
- Solub. in water: (20 °C): 300 g/l
- GHS-signal word: Warning

- GHS-H sentences: H317
- GHS-P sentences: P261 - P280 - P321 - P363 - P333 + P313 - P501a
- Tariff number: 2843 30 00 00
- Applications: photography, in galvanotechnia.

**Specifications:**

Au content . . . . . 49,5 %

Art. No.	Volume	Container
OR0060001	1 g	
OR0060020	20 g	

**Sodium thiocyanate****S00675 Sodium thiocyanate, reagent grade, ACS**

- Synonyms: Sodium sulfocyanide, Sodium rhodanide
- NaSCN
- M = 81,07 g/mol
- CAS [540-72-7]
- EINECS-No.: 208-754-4
- Solub. in water: (20 °C): soluble
- Melting point: 310 °C
- LD 50 (oral, rat): 764 mg/kg
- EC-Index-No.: 615-004-00-3
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332 - H412 - EUH032

- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a
- Tariff number: 2842 90 80 80
- Applications: analytical chemistry, synthesis of organic products (thiocyanates).

sulfides (S) . . . . . max. 0,001 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,002 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0002 %  
 lead (Pb) . . . . . max. 0,0005 %

**Specifications:**

assay (argentometric) . . . . . min. 98 %  
 insoluble in water . . . . . max. 0,005 %  
 carbonates (as Na<sub>2</sub>CO<sub>3</sub>) . . . . . max. 0,2 %  
 chlorides (Cl) . . . . . max. 0,01 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,01 %

Art. No.	Volume	Container
S006750500	500 g	
S006751000	1 kg	
S00675005P	5 kg	

**Sodium thiosulfate anhydrous****S00720 Sodium thiosulfate anhydrous, extra pure**

- Synonyms: Antichlor
- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>
- M = 158,10 g/mol
- CAS [7772-98-7]
- EINECS-No.: 231-867-5
- Solub. in water: (20 °C): 500 g/l
- Melting point: 48 °C
- Boiling point: 100 °C
- LD 50 (oral, rat): > 8000 mg/kg (pentahydrate)
- Tariff number: 2832 30 00 00
- Applications: analytical chemistry, titrant in volumetric analysis (iodometric analyses), photography, labora-

tory reagent, for determination of: cobalt, hydrocyanic acid, quinine.

**Specifications:**

assay (iodometric, on dried sample) . . . . . min. 98 %  
 insoluble in water . . . . . max. 0,01 %  
 pH (5 %, H<sub>2</sub>O) . . . . . 6,0 - 8,5  
 chlorides (Cl) . . . . . max. 0,15 %  
 sulfates and sulfites (as SO<sub>4</sub>) . . . . . max. 0,5 %  
 sulfides (S) . . . . . max. 0,0005 %  
 calcium (Ca) . . . . . max. 0,004 %  
 cadmium (Cd) . . . . . max. 0,001 %  
 cobalt (Co) . . . . . max. 0,001 %

copper (Cu) . . . . . max. 0,001 %  
 heavy metals (as Pb) . . . . . max. 0,005 %  
 iron (Fe) . . . . . max. 0,005 %  
 lead (Pb) . . . . . max. 0,001 %  
 nickel (Ni) . . . . . max. 0,001 %  
 potassium (K) . . . . . max. 0,01 %  
 zinc (Zn) . . . . . max. 0,001 %  
 loss on drying (105 °C) . . . . . max. 0,5 %

Art. No.	Volume	Container
S007201000	1 kg	

**Sodium thiosulfate pentahydrate**

- Synonyms: Antichlor
- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O
- M = 248,18 g/mol
- CAS [10102-17-7]
- EINECS-No.: 231-867-5

- Solub. in water: (20 °C): 680 g/l
- Melting point: 48,5 °C
- LD 50 (oral, rat): > 8000 mg/kg
- Tariff number: 2832 30 00 00

- Applications: analytical chemistry, titrant in volumetric analysis (iodometric analyses), photography, laboratory reagent, for determination of: cobalt, hydrocyanic acid, quinine.

**S00725 Sodium thiosulfate pentahydrate, extra pure, Pharmpur®, Ph Eur, BP, USP**

assay (iodometric) . . . . . 99 - 100,5 %  
 identification . . . . . passes test  
 appearance of solution . . . . . passes test  
 pH (10 %, H<sub>2</sub>O) . . . . . 6,0 - 8,4  
 sulfates and sulfites (as SO<sub>4</sub>) . . . . . max. 0,2 %  
 sulfides (S) . . . . . passes test

calcium (Ca) . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 water content . . . . . 32 - 37 %  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.

Art. No.	Volume	Container
S007250500	500 g	
S007251000	1 kg	
S00725005P	5 kg	
S00725025P	25 kg	

# Sodium

## S00727 Sodium thiosulfate pentahydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (iodometric) . . . . .	99,5 - 101 %	total nitrogen (as N) . . . . .	max. 0,002 %
identity . . . . .	.passes test	calcium (Ca) . . . . .	max. 0,002 %
appearance of solution . . . . .	.passes test	copper (Cu) . . . . .	max. 0,0005 %
insoluble in water . . . . .	max. 0,005 %	heavy metals (as Pb) . . . . .	max. 0,001 %
pH (5 %, H <sub>2</sub> O) . . . . .	6,0 - 7,5	iron (Fe) . . . . .	max. 0,0005 %
chlorides (Cl) . . . . .	max. 0,008 %	lead (Pb) . . . . .	max. 0,0005 %
sulfates and sulfites (as SO <sub>4</sub> ) . . . . .	max. 0,1 %	magnesium (Mg) . . . . .	max. 0,001 %
sulfides (S) . . . . .	.passes test	potassium (K) . . . . .	max. 0,001 %

Art. No.	Volume	Container
S007270500	500 g	
S007271000	1 kg	
S00727005P	5 kg	
S00727025P	25 kg	

## Sodium thiosulfate, volumetric solutions

### S00730 Sodium thiosulfate, solution 1 mol/l (1 N)

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O
- M = 248,18 g/mol
- CAS [10102-17-7]
- EINECS-No.: 231-867-5
- Density: 1,12 g/cm<sup>3</sup>
- Tariff number: 2832 30 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, reducing agent.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,2482 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S007301000	1 l	
S00730005P	5 l	
S00730010C	10 l	

### S00729 Sodium thiosulfate, solution 0,5 mol/l (0,5 N)

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O
- M = 248,18 g/mol
- CAS [10102-17-7]
- EINECS-No.: 231-867-5
- Density: 1,06 g/cm<sup>3</sup>
- Tariff number: 2832 30 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, reducing agent.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,1241 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S007291000	1 l	

### S00732 Sodium thiosulfate, solution 0,282 mol/l (0,282 N)

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O
- M = 248,18 g/mol
- CAS [10102-17-7]
- EINECS-No.: 231-867-5
- Density: 1,03 g/cm<sup>3</sup>
- Tariff number: 2832 30 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, reducing agent.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,06999 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S007321000	1 l	
S00732005P	5 l	
S00732010C	10 l	

### S00731 Sodium thiosulfate, solution 0,1 mol/l (0,1 N)

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O
- M = 248,18 g/mol
- CAS [10102-17-7]
- EINECS-No.: 231-867-5
- Density: ~ 1,004 g/cm<sup>3</sup>
- Tariff number: 2832 30 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, reducing agent.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,0248 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S007310100	100 ml	
S007311000	1 l	
S00731005P	5 l	
S00731010C	10 l	

### S00737 Sodium thiosulfate, solution 0,05 mol/l (0,05 N)

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O
- M = 248,18 g/mol
- CAS [10102-17-7]
- EINECS-No.: 231-867-5
- Density: 1,001 g/cm<sup>3</sup>
- Tariff number: 2832 30 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, reducing agent.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,01241 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O This volumetric solution was checked by means of potentiometric methods using Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S007371000	1 l	
S00737005P	5 l	

**S00733 Sodium thiosulfate, solution 0,01 mol/l (0,01 N)**

- $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$
- $M = 248,18 \text{ g/mol}$
- CAS [10102-17-7]
- EINECS-No.: 231-867-5
- Density:  $0,997 \text{ g/cm}^3$
- Tariff number: 2832 30 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, reducing agent.

uncertainty  $\pm 0,001$   
 1 ml = 0,002482 g  $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$  This volumetric solution was checked by means of potentiometric methods using an iodine standard solution, that was also checked against Scharlau's sodium thiosulfate volumetric standard solution. Scharlau's volumetric standard solutions are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S007331000	1 l	Ⓟ

**Specifications:**

factor ..... 0,999 - 1,001

**S00734 Sodium thiosulfate, solution 0,002 mol/l (0,002 N)**

- $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$
- $M = 248,18 \text{ g/mol}$
- CAS [10102-17-7]
- EINECS-No.: 231-867-5
- Density:  $1,00 \text{ g/cm}^3$
- Tariff number: 2832 30 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, reducing agent.

uncertainty  $\pm 0,002$   
 1 ml = 0,0004964 g  $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$  This volumetric solution was checked by means of potentiometric methods using an iodine standard solution, that was also checked against Scharlau's sodium thiosulfate volumetric standard solution. Scharlau's volumetric standard solutions are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
S007341000	1 l	Ⓟ

**Specifications:**

factor ..... 0,995 - 1,005

**S00728 Sodium thiosulfate, concentrated solution to prepare 1 l of solution 0,1 mol/l (0,1 N)**

- $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$
- $M = 248,18 \text{ g/mol}$
- CAS [10102-17-7]
- EINECS-No.: 231-867-5
- Density:  $\sim 1,22 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible

- Tariff number: 2832 30 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, reducing agent.

concentrated solution ..... 1 mol/l  $\pm 0,1 \%$

**Specifications:**

amount of substance: 24,818 g  $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$

Art. No.	Volume	Container
S0072800PA	u.	Ⓟ

**S00738 Sodium thiosulfate, concentrated solution to prepare 1 l of solution 0,01 mol/l (0,01N)**

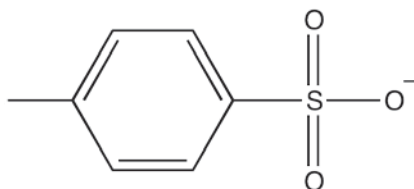
- Synonyms: Antichlor
- $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$
- $M = 248,18 \text{ g/mol}$
- CAS [10102-17-7]
- EINECS-No.: 231-867-5
- Density:  $\sim 1,02 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible

- Tariff number: 2832 30 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, reducing agent.

Art. No.	Volume	Container
S0073800PA	u.	Ⓟ

**Specifications:**

amount of substance: 2,4818 g  $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$   
 concentrated solution ..... 0,1 mol/l  $\pm 0,1 \%$

**Sodium p-toluensulfonate****S00755 Sodium p-toluensulfonate, synthesis grade**

- Synonyms: 4-Toluenesulfonic acid sodium salt, p-Toluenesulfonic acid sodium salt
- $\text{C}_7\text{H}_7\text{NaO}_3\text{S}$
- $M = 194,19 \text{ g/mol}$
- CAS [657-84-1]
- EINECS-No.: 211-522-5
- Solub. in water: (20 °C): soluble
- Tariff number: 2904 10 00 90

- Applications: synthesis of organic products, laboratory reagent, photography.

**Specifications:**

assay (acidimetric) ..... min. 98 %

Art. No.	Volume	Container
S007550250	250 g	Ⓟ

**Sodium triphosphate anhydrous****S00780 Sodium triphosphate anhydrous, synthesis grade**

- Synonyms: Sodium triphosphate
- $\text{Na}_3\text{P}_3\text{O}_{10}$
- $M = 367,86 \text{ g/mol}$
- CAS [7758-29-4]
- EINECS-No.: 231-838-7
- Solub. in water: (20 °C): 150 g/l
- Melting point: 622 °C
- Vapour pressure: (20 °C) < 0,1 hPa

- LD 50 (oral, rat): 3900 mg/kg
- Tariff number: 2835 31 00 00
- Applications: synthesis of organic products, in food industry, emulsifier, preservative agent, for determination of: BOD.

pH (1 %,  $\text{H}_2\text{O}$ ) ..... 9 - 10  
 iron (Fe) ..... max. 0,005 %

**Specifications:**

assay (acidimetric, as  $\text{P}_2\text{O}_5$ ) ..... 57 - 59 %

Art. No.	Volume	Container
S007801000	1 kg	Ⓟ

# Sodium

## Sodium tungstate dihydrate

### S00795 Sodium tungstate dihydrate, reagent grade, ACS

- Synonyms: Sodium wolframate dihydrate
- $\text{Na}_2\text{WO}_4 \cdot 2\text{H}_2\text{O}$
- $M = 329,86 \text{ g/mol}$
- CAS [10213-10-2]
- EINECS-No.: 236-743-4
- Solub. in water: (20 °C): ~ 730 g/l
- Melting point: 100 °C (release of crystalline water)
- LD 50 (oral, rat): 1190 mg/kg (anhydrous substance)
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a

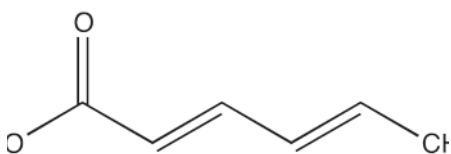
- Tariff number: 2841 80 00 00
  - Applications: analytical chemistry (precipitant for: alkaloids, blood sugar, uric acid), for biology.
- Specifications:**
- assay (gravimetric) . . . . . 99 - 101 %
  - identity . . . . . passes test
  - insoluble in water . . . . . max. 0,01 %
  - alkalinity . . . . . max. 0,02 meq/g
  - chlorides (Cl) . . . . . max. 0,003 %
  - sulfates ( $\text{SO}_4$ ) . . . . . max. 0,01 %
  - total nitrogen (as N) . . . . . max. 0,001 %

- ammonium ( $\text{NH}_4$ ) . . . . . max. 0,001 %
- arsenic (As) . . . . . max. 0,0001 %
- heavy metals (as Pb) . . . . . max. 0,001 %
- iron (Fe) . . . . . max. 0,0005 %
- lead (Pb) . . . . . max. 0,001 %
- molybdenum (Mo) . . . . . max. 0,001 %

Art. No.	Volume	Container
S007950100	100 g	Ⓒ
S007950250	250 g	Ⓒ

## Sorbic acid

### AC2032 Sorbic acid, synthesis grade



- Synonyms: 2,4-Hexadienoic acid
- $\text{C}_6\text{H}_8\text{O}_2$
- $M = 112,13 \text{ g/mol}$
- CAS [110-44-1]
- EINECS-No.: 203-768-7
- Solub. in water: (20 °C): 1,6 g/l
- Melting point: 132 - 135 °C
- Boiling point: ~ 228 °C (decomposes)
- Flash pt. ~ 127 °C
- Vapour pressure: (20 °C) ~ 0,01 hPa
- LD 50 (oral, rat): 7360 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P304 + P340 - P405 - P501a

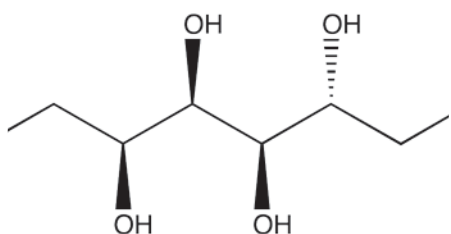
- Tariff number: 2916 19 30 00
- Applications: laboratory reagent, synthesis of organic products, in food industry (E 200), preservative agent.

- Specifications:**
- assay (acidimetric) . . . . . min. 99,5 %
  - residue on ignition . . . . . max. 0,01 %

Art. No.	Volume	Container
AC20321000	1 kg	Ⓒ
AC2032005P	5 kg	Ⓕ

## D(-)-Sorbitol

### S00850 D(-)-Sorbitol, extra pure, Pharmapur®, Ph Eur, BP, NF



- Synonyms: D-Glucitol, Karion
- $\text{C}_6\text{H}_{14}\text{O}_6$
- $M = 182,17 \text{ g/mol}$
- CAS [50-70-4]
- EINECS-No.: 200-061-5
- Solub. in water: (20 °C): soluble
- Melting point: 94 - 96 °C
- Flash pt. > 100 °C
- Ignition temp.: > 150 °C
- LD 50 (oral, rat): 15900 mg/kg
- Tariff number: 2905 44 91 00
- Applications: analytical chemistry, in food industry, for pharmaceuticals synthesizing, synthesis of organic products, in pharma industry.

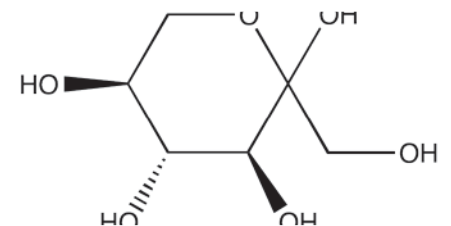
- pH (10 %,  $\text{H}_2\text{O}$ ) . . . . . 3,5 - 7,0
- chlorides (Cl) . . . . . max. 0,005 %
- sulfates ( $\text{SO}_4$ ) . . . . . max. 0,01 %
- lead (Pb) . . . . . max. 0,00005 %
- nickel (Ni) . . . . . max. 0,0001 %
- reducing sugars (as glucose) . . . . . max. 0,2 %
- related substances (mannitol) . . . . . max. 2 %
- sum related substances . . . . . max. 3 %
- residue on ignition . . . . . max. 0,1 %
- water (K.F.) . . . . . max. 1,5 %
- Residual solvents are analysed according to guideline CPMP/ICH/283/95.

- Specifications:**
- assay (iodometric, on dried sample) . . . . . 97 - 100,5 %
  - identification . . . . . passes test
  - appearance of solution . . . . . clear and colourless
  - conductivity (20°C; 20 %, in  $\text{H}_2\text{O}$ ) . . . . . max. 20  $\mu\text{S/cm}$

Art. No.	Volume	Container
S008500250	250 g	Ⓒ
S008501000	1 kg	Ⓒ
S00850005P	5 kg	Ⓕ
S00850025P	25 kg	Ⓕ

## L(-)-Sorbitol

### S00865 L(-)-Sorbitol, extra pure



- Synonyms: L-Sorbitol
- $\text{C}_6\text{H}_{14}\text{O}_6$
- $M = 180,16 \text{ g/mol}$
- CAS [87-79-6]
- EINECS-No.: 201-771-8
- Solub. in water: (17 °C): 550 g/l
- Melting point: 164 °C
- LD 50 (oral, rat): > 11000 mg/kg
- Tariff number: 2940 00 00 80
- Applications: synthesis of organic products, for pharmaceuticals synthesizing (vitamin C).

- Specifications:**
- assay (HPLC) . . . . . min. 99 %
  - specific rotation ( $[\alpha]_{20}^{\circ}/D, c = 10, \text{H}_2\text{O}$ ) referred to dried sample) . . . . . - 43,7 - - 43,0 °
  - heavy metals (as Pb) . . . . . max. 0,001 %
  - water . . . . . max. 0,5 %

Art. No.	Volume	Container
S008650250	250 g	Ⓒ

## Standards, AA, according to ISO 17025

### AL0755 Aluminium, standard solution 1000 mg/l Al for AA (Al(NO<sub>3</sub>)<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**

concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
AL07550100	100 ml	Ⓟ
AL07550500	500 ml	Ⓟ

### AN0442 Antimony, standard solution 1000 mg/l Sb for AA (Sb in HCl 20%)



- Density: 1,05 g/cm<sup>3</sup>
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P281 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**

concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l

Art. No.	Volume	Container
AN04420100	100 ml	Ⓟ
AN04420500	500 ml	Ⓟ

### AR0152 Arsenic, standard solution 1000 mg/l As for AA (As<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H315 - H319 - H350
- GHS-P sentences: P280 - P281 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**

concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l

Art. No.	Volume	Container
AR01520100	100 ml	Ⓟ
AR01520500	500 ml	Ⓟ

### BA0011 Barium, standard solution 1000 mg/l Ba for AA (Ba(NO<sub>3</sub>)<sub>2</sub> in HNO<sub>3</sub> 2%)



- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**

concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l

Art. No.	Volume	Container
BA00110100	100 ml	Ⓟ
BA00110500	500 ml	Ⓟ

### BI0131 Bismuth, standard solution 1000 mg/l Bi for AA (Bi in HNO<sub>3</sub> 10%)



- Density: 1,05 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 II UN 3264
- IMDG: 8 II UN 3264
- IATA/ICAO: 8 II UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**

concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
BI01310100	100 ml	Ⓟ
BI01310500	500 ml	Ⓟ

### B00014 Boron, standard solution 1000 mg/l B for AA (H<sub>3</sub>BO<sub>3</sub> in H<sub>2</sub>O)

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-H sentences: EUH210
- Tariff number: 2810 00 90 00
- Applications: analytical chemistry, atomic absorption analysis.

- Specifications:**  
concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
B000140100	100 ml	Ⓟ
B000140500	500 ml	Ⓟ

### CA0042 Cadmium, standard solution 1000 mg/l Cd for AA (Cd in HNO<sub>3</sub> 2%)



- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H412

- GHS-P sentences: P280 - P273 - P305 + P351 + P338 - P321 - P362 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**

concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
CA00420100	100 ml	Ⓟ
CA00420500	500 ml	Ⓟ

# Standa

## CA0177 Calcium, standard solution 1000 mg/l Ca for AA (CaCO<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l

Art. No.	Volume	Container
CA01770100	100 ml	☉
CA01770500	500 ml	☉

## CR0223 Chromium, standard solution 1000 mg/l Cr for AA (Cr(NO<sub>3</sub>)<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l

Art. No.	Volume	Container
CR02230100	100 ml	☉
CR02230500	500 ml	☉

## C00016 Cobalt, standard solution 1000 mg/l Co for AA (Co in HNO<sub>3</sub> 2%)

- Density: 1,02 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H350i - H360F - H315 - H319 - H411

- GHS-P sentences: P280 - P281 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
C000160100	100 ml	☉
C000160500	500 ml	☉

## C00086 Copper, standard solution 1000 mg/l Cu for AA (Cu in HNO<sub>3</sub> 2%)

- Density: 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
C000860100	100 ml	☉
C000860500	500 ml	☉

## OR0058 Gold, standard solution 1000 mg/l Au for AA (Au in HCl 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, atomic absorption analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l

Art. No.	Volume	Container
OR00580100	100 ml	☉
OR00580500	500 ml	☉

## HI0305 Iron, standard solution 1000 mg/l Fe for AA (Fe(NO<sub>3</sub>)<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: ~ 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
HI03050100	100 ml	☉
HI03050500	500 ml	☉

## PL0106 Lead, standard solution 1000 mg/l Pb for AA (Pb(NO<sub>3</sub>)<sub>2</sub> in HNO<sub>3</sub> 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Danger
- GHS-H sentences: H315 - H319 - H360
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l

Art. No.	Volume	Container
PL01060100	100 ml	☉
PL01060500	500 ml	☉

## LI0061 Lithium, standard solution 1000 mg/l Li for AA ( $\text{Li}_2\text{CO}_3$ in $\text{HNO}_3$ 2%)

- Density: 1,02 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l  
 uncertainty ± 5 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
LI00610100	100 ml	☉
LI00610500	500 ml	☉

## MA0012 Magnesium, standard solution 1000 mg/l Mg for AA (Mg in $\text{HNO}_3$ 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 -
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362 - -

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l  
 uncertainty ± 5 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
MA00120100	100 ml	☉
MA00120500	500 ml	☉

## MA0112 Manganese, standard solution 1000 mg/l Mn for AA (Mn in $\text{HNO}_3$ 2%)

- Density: 1,02 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l  
 uncertainty ± 5 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
MA01120100	100 ml	☉
MA01120500	500 ml	☉

## ME0112 Mercury, standard solution 1000 mg/l Hg for AA ( $\text{Hg}(\text{NO}_3)_2$ in $\text{HNO}_3$ 10%)

- Density: ~ 1,05 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C9 II UN 1760
- IMDG: 8 II UN 1760
- IATA/ICAO: 8 II UN 1760
- GHS-signal word: Danger
- GHS-H sentences: H314 - H373 -

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l

uncertainty ± 5 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
ME01120100	100 ml	☉
ME01120500	500 ml	☉

## M00022 Molybdenum, standard solution 1000 mg/l Mo for AA ( $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}$ in $\text{H}_2\text{O}$ )

- Density: ~ 1,0 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l  
 uncertainty ± 5 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
M000220100	100 ml	☉
M000220500	500 ml	☉

## NI0122 Nickel, standard solution 1000 mg/l Ni for AA (Ni in $\text{HNO}_3$ 2%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - -
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l  
 uncertainty ± 5 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
NI01220100	100 ml	☉
NI01220500	500 ml	☉

## P00106 Potassium, standard solution 1000 mg/l K for AA ( $\text{KNO}_3$ in $\text{HNO}_3$ 2%)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l

uncertainty ± 5 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
P001060100	100 ml	☉
P001060500	500 ml	☉

## SE0012 Selenium, standard solution 1000 mg/l Se for AA (Se in $\text{HNO}_3$ 2%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l  
 uncertainty ± 5 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
SE00120100	100 ml	☉
SE00120500	500 ml	☉

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## SI0013 Silicon, standard solution 1000 mg/l Si for AA ((NH<sub>4</sub>)<sub>2</sub>SiF<sub>6</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l  
 uncertainty ± 5 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
SI00130100	100 ml	☉
SI00130500	500 ml	☉

## PL0006 Silver, standard solution 1000 mg/l Ag for AA (Ag in HNO<sub>3</sub> 2%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

Tariff number: 3822 00 00 00  
 Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l  
 uncertainty ± 5 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
PL00060100	100 ml	☉
PL00060500	500 ml	☉

## S00006 Sodium, standard solution 1000 mg/l Na for AA (NaNO<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313  
 Tariff number: 3822 00 00 00  
 Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l

uncertainty ± 5 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
S000060100	100 ml	☉
S000060500	500 ml	☉

## ES0178 Strontium, standard solution 1000 mg/l Sr for AA (Sr(NO<sub>3</sub>)<sub>2</sub> in HNO<sub>3</sub> 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 -
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362

Tariff number: 3822 00 00 00  
 Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l  
 uncertainty ± 5 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
ES01780100	100 ml	☉
ES01780500	500 ml	☉

## ES0062 Tin, standard solution 1000 mg/l Sn for AA (Sn in HCl 20%)

- Density: 1,08 g/cm<sup>3</sup>
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a

Tariff number: 3822 00 00 00  
 Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l  
 uncertainty ± 5 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
ES00620100	100 ml	☉
ES00620500	500 ml	☉

## TI0365 Titanium, standard solution 1000 mg/l Ti for AA (Ti in HNO<sub>3</sub> 5% + HF 0,5%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 CT1 II UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- GHS-signal word: Danger
- GHS-H sentences: H311 - H302 - H332 - H315 - H319

GHS-P sentences: P261 - P305 + P351 + P338 - P361 - P321 - P405 - P501a  
 Tariff number: 3822 00 00 00  
 Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l

uncertainty ± 5 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
TI03650100	100 ml	☉
TI03650500	500 ml	☉

## TU0012 Tungsten, standard solution 1000 mg/l W for AA (W in HNO<sub>3</sub> 1% + HF 2%)

- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 CT1 II UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- GHS-signal word: Danger
- GHS-H sentences: H301 + H311 - H314

GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P361 - P405 - P501a  
 Tariff number: 3822 00 00 00  
 Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l

uncertainty ± 5 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
TU00120100	100 ml	☉
TU00120500	500 ml	☉

## VA0072 Vanadium, standard solution 1000 mg/l V for AA (NH<sub>4</sub>VO<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313  
 Tariff number: 3822 00 00 00  
 Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
 concentration . . . . . 995 - 1005 mg/l

uncertainty ± 5 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
VA00720100	100 ml	☉
VA00720500	500 ml	☉



## CI0127 Zinc, standard solution 1000 mg/l Zn for AA (Zn in HNO<sub>3</sub> 2%)



- Density: 1,02 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

This standard solution is traceable to Standard Reference Material from NIST.

### Specifications:

concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l

Art. No.	Volume	Container
CI01270100	100 ml	☒
CI01270500	500 ml	☒

## Standards, AA

### AL0751 Aluminium, standard solution 1000 mg/l Al for AA (aluminium nitrate nonahydrate in nitric acid 0,5 mol/l)



- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

### Specifications:

concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
AL07510100	100 ml	☒
AL07510500	500 ml	☒

### AN0440 Antimony, standard solution 1000 mg/l Sb for AA (antimony(III) chloride in hydrochloric acid 5 mol/l)



- Density: ~ 1,08 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335

- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

### Specifications:

concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
AN04400100	100 ml	☒
AN04400500	500 ml	☒

### AR0151 Arsenic, standard solution 1000 mg/l As for AA (arsenic(III) oxide in nitric acid 0,5 mol/l)



- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H350 - H315 - H319

- GHS-P sentences: P280 - P281 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

### Specifications:

concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
AR01510100	100 ml	☒
AR01510500	500 ml	☒

### BA0010 Barium, standard solution 1000 mg/l Ba for AA (barium nitrate in nitric acid 0,5 mol/l)



- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

### Specifications:

concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
BA00100100	100 ml	☒
BA00100500	500 ml	☒

### BI0130 Bismuth, standard solution 1000 mg/l Bi for AA (bismuth(III) nitrate in nitric acid 0,5 mol/l)



- Density: ~ 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

### Specifications:

concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
BI01300100	100 ml	☒
BI01300500	500 ml	☒

### B00013 Boron, standard solution 1000 mg/l B for AA (boric acid in water)

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-H sentences: EUH210
- Tariff number: 2810 00 90 00
- Applications: analytical chemistry, atomic absorption analysis.

### Specifications:

concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
B000130100	100 ml	☒
B000130500	500 ml	☒

# Standa



## CA0041 Cadmium, standard solution 1000 mg/l Cd for AA (cadmium nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H412

- GHS-P sentences: P280 - P273 - P305 + P351 + P338 - P321 - P362 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
CA00410100	100 ml	
CA00410500	500 ml	

## CA0176 Calcium, standard solution 1000 mg/l Ca for AA (calcium nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
CA01760100	100 ml	
CA01760500	500 ml	

## CR0222 Chromium, standard solution 1000 mg/l Cr for AA (chromium(III) nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
CR02220100	100 ml	
CR02220500	500 ml	

## C00012 Cobalt, standard solution 1000 mg/l Co for AA (cobalt nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
C000120100	100 ml	
C000120500	500 ml	

## C00085 Copper, standard solution 1000 mg/l Cu for AA (copper(II) nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H412

- GHS-P sentences: P280 - P273 - P305 + P351 + P338 - P321 - P362 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
C000850100	100 ml	
C000850500	500 ml	

## OR0057 Gold, standard solution 1000 mg/l Au for AA (Gold(III) trichloride acid in hydrochloric acid 2 mol/l)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, atomic absorption analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l  
Avoid exposure to light

Art. No.	Volume	Container
OR00570100	100 ml	
OR00570500	500 ml	

## HI0302 Iron, standard solution 1000 mg/l Fe for AA (iron(III) nitrate nonahydrate in nitric acid 0,5 mol/l)

- Density: ~ 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
HI03020100	100 ml	
HI03020500	500 ml	



## PL0105 Lead, standard solution 1000 mg/l Pb for AA (lead(II) nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
PL01050100	100 ml	
PL01050500	500 ml	



## LI0060 Lithium, standard solution 1000 mg/l Li for AA (lithium nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
LI00600100	100 ml	
LI00600500	500 ml	



## MA0011 Magnesium, standard solution 1000 mg/l Mg for AA (magnesium nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
MA00110100	100 ml	
MA00110500	500 ml	



## MA0111 Manganese, standard solution 1000 mg/l Mn for AA (manganese nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
MA01110100	100 ml	
MA01110500	500 ml	


## ME0111 Mercury, standard solution 1000 mg/l Hg for AA (mercury(II) nitrate monohydrate in nitric acid 2 mol/l)

- Density: ~ 1,05 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 CT1 II UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- GHS-signal word: Danger
- GHS-H sentences: H314 - H373 -

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.



**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
ME01110100	100 ml	
ME01110500	500 ml	

## M00021 Molybdenum, standard solution 1000 mg/l Mo for AA (ammonium heptamolybdate in water)

- Density: ~ 1,0 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
M000210100	100 ml	
M000210500	500 ml	



## NI0121 Nickel, standard solution 1000 mg/l Ni for AA (nickel(II) nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
NI01210100	100 ml	
NI01210500	500 ml	

# Standa



## P00105 Potassium, standard solution 1000 mg/l K for AA (potassium nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . .995 - 1005 mg/l

Art. No.	Volume	Container
P001050100	100 ml	
P001050500	500 ml	

## SE0011 Selenium, standard solution 1000 mg/l Se for AA (selenium dioxide in nitric acid 0,5 mol/l)

- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.



**Specifications:**  
concentration . . . . .995 - 1005 mg/l

Art. No.	Volume	Container
SE00110100	100 ml	
SE00110500	500 ml	

## SI0012 Silicon, standard solution 1000 mg/l Si for AA (ammonium hexafluorosilicate in water)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 128 mg/kg (pure substance)
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

- Specifications:**  
concentration . . . . .995 - 1005 mg/l  
uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
SI00120100	100 ml	
SI00120500	500 ml	


## PL0005 Silver, standard solution 1000 mg/l Ag for AA (silver nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . .995 - 1005 mg/l

Art. No.	Volume	Container
PL00050100	100 ml	
PL00050500	500 ml	

## S00005 Sodium, standard solution 1000 mg/l Na for AA (sodium nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . .995 - 1005 mg/l

Art. No.	Volume	Container
S000050100	100 ml	
S000050500	500 ml	

## ES0177 Strontium, standard solution 1000 mg/l Sr for AA (strontium nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . .995 - 1005 mg/l

Art. No.	Volume	Container
ES01770100	100 ml	
ES01770500	500 ml	


## ES0061 Tin, standard solution 1000 mg/l Sn for AA (tin(IV) chloride in hydrochloric acid 5 mol/l)

- Density: 1,08 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 II UN 3264
- IMDG: 8 II UN 3264
- IATA/ICAO: 8 II UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335

- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . .995 - 1005 mg/l

Art. No.	Volume	Container
ES00610100	100 ml	
ES00610500	500 ml	



## TI0360 Titanium, standard solution 1000 mg/l Ti for AA (titanium(IV) chloride in hydrochloric acid 5 mol/l)

- Density: ~ 1,08 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 II UN 3264
- IMDG: 8 II UN 3264
- IATA/ICAO: 8 II UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335

- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.



**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
TI03600100	100 ml	
TI03600500	500 ml	

## TU0011 Tungsten, standard solution 1000 mg/l W for AA (ammonium tungstate in water)

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l  
uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
TU00110100	100 ml	
TU00110500	500 ml	



## VA0071 Vanadium, standard solution 1000 mg/l V for AA (ammonium monovanadate in nitric acid 0,5 mol/l)

- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
VA00710100	100 ml	
VA00710500	500 ml	



## CI0126 Zinc, standard solution 1000 mg/l Zn for AA (zinc nitrate in nitric acid 0,5 mol/l)

- Density: ~ 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, atomic absorption analysis.

uncertainty ± 5 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
concentration . . . . . 995 - 1005 mg/l

Art. No.	Volume	Container
CI01260100	100 ml	
CI01260500	500 ml	

## Standards, buffer solutions for pH-meter calibration

### S01101 Buffer solution pH = 1,00 (20 °C) (Hydrochloric acid/Sodium chloride)

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

25 . . . . .	1,01
30 . . . . .	1,01
35 . . . . .	1,01
40 . . . . .	1,01
45 . . . . .	1,01
50 . . . . .	1,01

**Specifications:**  
pH at 20 °C . . . . . 1,00  
uncertainty ± 0,01  
Composition per litre is 0,17g Glycine, 0,13g Sodium chloride and 11ml Hydrochloric acid concentrated.

T (°C)	pH
0 . . . . .	0,96
5 . . . . .	0,99
10 . . . . .	0,99
15 . . . . .	0,99
20 . . . . .	1,00

Art. No.	Volume	Container
S011010250	250 ml	
S011011000	1 l	

### S01022 Buffer solution pH = 2,00 (20 °C) (Citric acid/Sodium hydroxide/Hydrochloric acid)

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

25 . . . . .	2,00
30 . . . . .	2,00
35 . . . . .	2,00
40 . . . . .	2,00
45 . . . . .	2,00
50 . . . . .	2,00

**Specifications:**  
pH at 20 °C . . . . . 2,00  
uncertainty ± 0,01  
Composition per litre is 6,43g Citric acid, 2,40g Sodium hydroxide and 6,13ml Hydrochloric acid.

T (°C)	pH
0 . . . . .	2,01
5 . . . . .	2,01
10 . . . . .	2,01
15 . . . . .	2,00
20 . . . . .	2,00

Art. No.	Volume	Container
S010220250	250 ml	
S010221000	1 l	

# Standa

## S01023 Buffer solution pH = 3,00 (20 °C) (ortho-Phosphoric acid/Sodium hydroxide)

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 20 °C ..... 3,00  
 uncertainty ± 0,01 Composition per litre is 0,7ml ortho-Phosphoric acid concentrated and 15ml Sodium hydroxide concentrated

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	2,96
5	2,96
10	2,97
15	2,98
20	3,00

25	3,01
30	3,01
35	3,01
40	3,01
45	3,01
50	3,01

Art. No.	Volume	Container
S010230250	250 ml	Ⓟ
S010231000	1 l	Ⓟ

## S01004 Buffer solution pH = 4,00 (20 °C) (Potassium hydrogen phthalate)

- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: for calibrating pH-meters, analytical chemistry.

### Specifications:

pH at 20 °C ..... 4,00  
 uncertainty ± 0,01 Composition per litre is 10,21g Potassium hydrogen phthalate. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	4,00
5	4,00
10	4,00
15	4,00
20	4,00
25	4,01

30	4,02
35	4,03
40	4,04
45	4,05
50	4,06

Art. No.	Volume	Container
S010040250	250 ml	Ⓟ
S010040500	500 ml	Ⓟ
S010041000	1 l	Ⓟ
S01004005P	5 l	Ⓟ

## S01005 Buffer solution pH = 4,01 (20 °C) (Potassium hydrogen phthalate)

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 20 °C ..... 4,01  
 uncertainty ± 0,01 Composition per litre is 10,3g Potassium hydrogen phthalate. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	4,00
5	4,00
10	4,00
15	4,00
20	4,01

25	4,01
30	4,02
35	4,02
40	4,03
45	4,05
50	4,05

Art. No.	Volume	Container
S010050250	250 ml	Ⓟ
S010051000	1 l	Ⓟ

## S01025 Buffer solution pH = 5,00 (20 °C) (Acetic acid/Potassium hydroxide)

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 20 °C ..... 5,00  
 uncertainty ± 0,01 Composition per litre is 0,7ml Acetic acid glacial and 0,6g Potassium hydroxide. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	4,97
5	4,98
10	4,99
15	5,00
20	5,00

25	5,01
30	5,01
35	5,02
40	5,02
45	5,03
50	5,03

Art. No.	Volume	Container
S010250250	1 l	Ⓟ
S010251000	1 l	Ⓟ

## S01006 Buffer solution pH = 6,00 (20 °C) (Potassium dihydrogen phosphate/Sodium hydroxide)

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 20 °C ..... 6,00  
 uncertainty ± 0,01 Composition per litre is 6,8g Potassium dihydrogen phosphate and 5,7ml Potassium hydroxide 1N. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	6,06
5	6,04
10	6,02
15	6,01
20	6,00

25	5,99
30	5,99
35	5,98
40	5,98
45	5,96
50	5,95

Art. No.	Volume	Container
S010060250	250 ml	Ⓟ
S010061000	1 l	Ⓟ

## S01007 Buffer solution pH = 7,00 (20 °C) (Potassium dihydrogen phosphate/di-Sodium hydrogen phosphate)

- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -5 °C
- Boiling point: 109 °C
- Tariff number: 3822 00 00 00
- Applications: to fit pH of the reaction media, for calibrating pH-meters, analytical chemistry.

### Specifications:

pH at 20 °C ..... 7,00  
 uncertainty ± 0,01 Composition per litre is 3,54g Potassium dihydrogen phosphate and 14,7g di-Sodium hydrogen phosphate. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	7,13
5	7,07
10	7,05
15	7,02
20	7,00
25	6,98

30	6,98
35	6,96
40	6,95
45	6,95
50	6,95

Art. No.	Volume	Container
S010070250	250 ml	P
S010070500	500 ml	P
S010071000	1 l	P
S01007005P	5 l	P

## S01008 Buffer solution pH = 7,02 (20 °C)(Potassium dihydrogen phosphate/di-Sodium hydrogen phosphate)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -5 °C
- Boiling point: 109 °C
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 20 °C ..... 7,02  
 uncertainty ± 0,01  
 Composition per litre is 3,54g Potassium dihydrogen phosphate and 14,7g di-Sodium hydrogen phosphate. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	7,12
5	7,09
10	7,06
15	7,04
20	7,02
25	7,00

30	6,99
35	6,98
40	6,97
45	6,96
50	6,96

Art. No.	Volume	Container
S010080250	250 ml	P
S010081000	1 l	P
S01008005P	5 l	P

## S01028 Buffer solution pH = 8,00 (20 °C) (Boric acid/Potassium chloride/Sodium hydroxide)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

### Specifications:

pH at 20 °C ..... 8,00  
 uncertainty ± 0,01 Composition per litre is 3,095 g Boric acid, 3,728 g Potassium chloride and approx. 40 ml NaOH 0,1N

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	8,15
5	8,10
10	8,07
15	8,04

20	8,00
25	7,96
30	7,94
35	7,92
40	7,90
45	7,87
50	7,85

Art. No.	Volume	Container
S010280250	250 ml	

## S01009 Buffer solution pH = 9,00 (20 °C) (Boric acid/Potassium chloride/Sodium hydroxide)

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 20 °C ..... 9,00  
 uncertainty ± 0,01 Composition per litre is 3,1g Boric Acid, 3,8g Potassium chloride and 0,8g Sodium hydroxide

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	9,24
5	9,16
10	9,11
15	9,05
20	9,00

25	8,95
30	8,91
35	8,88
40	8,85
45	8,82
50	8,79

Art. No.	Volume	Container
S010090250	250 ml	P
S010091000	1 l	P
S01009005P	5 l	P

## S01092 Buffer solution pH = 9,26 (20 °C) (di-Sodium tetraborate decahydrate)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 2660 mg/kg (pure substance)
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 20 °C ..... 9,26  
 uncertainty ± 0,01 Composition per litre is 3,7 g di-Sodium tetraborate decahydrate.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	9,43
5	9,41
10	9,35
15	9,30

20	9,26
25	9,21
30	9,16
35	9,10
40	9,09
45	9,07
50	9,03

Art. No.	Volume	Container
S010921000	1 l	P

# Standa

## S01010 Buffer solution pH = 10,00 (20 °C) (Sodium carbonate/Sodium hydrogen carbonate)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -6 °C
- Boiling point: 110 °C
- Tariff number: 3822 00 00 00
- Applications: to fit pH of the reaction media.

### Specifications:

pH at 20 °C ..... 10,00  
 uncertainty ± 0,02 Composition per litre is 2,64g Sodium carbonate and 2,09g Sodium hydrogen carbonate

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against two-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	10,25
5	10,18
10	10,12
15	10,06
20	10,00

25	9,97
30	9,93
35	9,91
40	9,89
45	9,83
50	9,78

Art. No.	Volume	Container
S010100250	250 ml	Ⓢ
S010101000	1 l	Ⓢ
S01010005P	5 l	Ⓢ

## S01141 Buffer solution pH = 11,00 (20 °C) (Boric acid/Sodium hydroxide/Potassium chloride)

- Density: 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00
- Applications: to fit pH of the reaction media.

### Specifications:

pH at 20 °C ..... 11,00  
 uncertainty ± 0,02 Composition per litre is 3,1g Boric Acid, 1,84g Sodium hydroxide and 3,4g Potassium chloride.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against two-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	11,45
5	11,32
10	11,20
15	11,10
20	11,00

25	10,90
30	10,81
35	10,72
40	10,64
45	10,56
50	10,48

Art. No.	Volume	Container
S011410250	250 ml	Ⓢ
S011411000	1 l	Ⓢ

## S01142 Buffer solution pH = 12,00 (20 °C) (di-Sodium hydrogen phosphate/Sodium hydroxide)

- Density: ~ 1,01 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, to fit pH of the reaction media.

### Specifications:

pH at 20 °C ..... 12,00  
 uncertainty ± 0,02 Composition per litre is 10,6g di-Sodium hydrogen phosphate and 3,10g Sodium hydroxide.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against two-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	12,58
5	12,41
10	12,26
15	12,10
20	12,00

25	11,88
30	11,72
35	11,67
40	11,54
45	11,41
50	11,33

Art. No.	Volume	Container
S011420250	250 ml	Ⓢ
S011421000	1 l	Ⓢ

## S01143 Buffer solution pH = 13,00 (20 °C) (Potassium chloride/Sodium hydroxide)

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, to fit pH of the reaction media.

### Specifications:

pH at 20 °C ..... 13,00  
 uncertainty ± 0,02 Composition per litre is 3,73g Potassium chloride and 1,92g Sodium hydroxide.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against two-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	13,80
5	13,59
10	13,37
15	13,18
20	13,00

25	12,83
30	12,67
35	12,59
40	12,41
45	12,28
50	12,15

Art. No.	Volume	Container
S011430250	250 ml	Ⓢ
S011431000	1 l	Ⓢ

## Standards, coloured buffer solutions for pH-meter calibration

## S02004 Buffer solution pH = 4,00 (20 °C), red-coloured

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 20 °C ..... 4,00  
 uncertainty ± 0,01 Composition per litre is 10,21g Potassium hydrogen phthalate. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	4,01
5	4,00
10	4,00
15	4,00
20	4,00

25	4,01
30	4,02
35	4,03
40	4,04
45	4,05
50	4,06

Art. No.	Volume	Container
S020040250	250 ml	Ⓢ
S020041000	1 l	Ⓢ



## S03004 Buffer solution pH = 4,00 (25 °C), red-coloured

- Density:
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 25°C ..... 4,00  
 uncertainty ± 0,01 Composition per litre is 10,3g Potassium hydrogen phthalate. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	4,00
5	4,00
10	4,00
15	4,00
20	4,00

25	4,00
30	4,01
35	4,01
40	4,02
45	4,02
50	4,03

Art. No.	Volume	Container
S030040250	250 ml	Ⓟ
S030041000	1 l	Ⓟ

## S02007 Buffer solution pH = 7,00 (20 °C), yellow-coloured

- Density: ~ 1,005 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 20 °C ..... 7,00  
 uncertainty ± 0,01 Composition per litre is 3,54g Potassium dihydrogen phosphate and 14,7g di-Sodium hydrogen phosphate. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	7,13
5	7,07
10	7,05
15	7,02
20	7,00

25	6,98
30	6,98
35	6,96
40	6,95
45	6,95
50	6,95

Art. No.	Volume	Container
S020070250	250 ml	Ⓟ
S020071000	1 l	Ⓟ

## S03007 Buffer solution pH = 7,00 (25 °C), yellow-coloured

- Density:
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 25°C ..... 7,00  
 uncertainty ± 0,01 Composition per litre is 3,54g Potassium dihydrogen phosphate and 14,7g di-Sodium hydrogen phosphate. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	7,12
5	7,09
10	7,06
15	7,04
20	7,02

25	7,00
30	6,99
35	6,98
40	6,97
45	6,96
50	6,96

Art. No.	Volume	Container
S030070250	250 ml	Ⓟ
S030071000	1 l	Ⓟ

## S02010 Buffer solution pH = 10,00 (20 °C), blue-coloured

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 20 °C ..... 10,00  
 uncertainty ± 0,02 Composition per litre is 2,64g Sodium carbonate and 2,09g Sodium hydrogen carbonate.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against two-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	10,25
5	10,18
10	10,12
15	10,06
20	10,00

25	9,97
30	9,93
35	9,91
40	9,89
45	9,83
50	9,78

Art. No.	Volume	Container
S020100250	250 ml	Ⓟ
S020101000	1 l	Ⓟ

## S03010 Buffer solution pH = 10,00 (25 °C), blue-coloured

- Density:
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: in buffer solutions.

### Specifications:

pH at 25°C ..... 10,00  
 uncertainty ± 0,02 Composition per litre is 2,64g Sodium carbonate and 2,09g Sodium hydrogen carbonate.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against two-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	10,32
5	10,25
10	10,18
15	10,12
20	10,07

25	10,00
30	9,97
35	9,91
40	9,89
45	9,86
50	9,83

Art. No.	Volume	Container
S030100250	250 ml	Ⓟ
S030101000	1 l	Ⓟ

## Standards, buffer solutions for pH-meter calibration, MONOBUF®

### S02040 Buffer solution pH = 4,00 (20 °C), red-coloured, MONOBUF®

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

### Specifications:

pH at 20 °C ..... 4,00  
 uncertainty ± 0,01 Composition per litre is 10,21g Potassium hydrogen phthalate. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	4,01
5	4,00
10	4,00
15	4,00

20	4,00
25	4,01
30	4,02
35	4,03
40	4,04
45	4,05
50	4,06

Art. No.	Volume	Container
S020400360	12x30 ml	

# Standa

## S02070 Buffer solution pH = 7,00 (20 °C), yellow-coloured, MONOBUF®

- Density: ~ 1,005 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

### Specifications:

pH at 20 °C ..... 7,00  
 uncertainty ± 0,01 Composition per litre is 3,54g Potassium dihydrogen phosphate and 14,7g di-Sodium hydrogen phosphate. Contains preservative.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against five-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	7,13
5	7,07
10	7,05
15	7,02

20	7,00
25	6,98
30	6,98
35	6,96
40	6,95
45	6,95
50	6,95

Art. No.	Volume	Container
S020700360	12x30 ml	

## S02100 Buffer solution pH = 10,00 (20 °C), blue-coloured, MONOBUF®

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

### Specifications:

pH at 20 °C ..... 10,00  
 uncertainty ± 0,02 Composition per litre is 2,64g Sodium carbonate and 2,09g Sodium hydrogen carbonate.

Standard buffer solutions are prepared using gravimetric and volumetric procedures. The batch value is determined by measurement with a combination glass electrode against two-point calibration according to DIN 19268. This pH buffer solution is traceable to Standard Reference Material from NIST.

T (°C)	pH
0	10,25
5	10,18
10	10,12
15	10,06

20	10,00
25	9,97
30	9,93
35	9,91
40	9,89
45	9,83
50	9,78

Art. No.	Volume	Container
S021000360	12x30 ml	

## S02200 Buffer solution pH = 4,00, 7,00, 10,00 (20 °C), MONOBUF® Mix

- Tariff number: 3822 00 00 00

### Specifications:

pH (red) at 20 °C ..... 4,00

pH (yellow) at 20 °C ..... 7,00  
 pH (blue) at 20 °C ..... 10,00  
 uncertainty ± 0,02

Art. No.	Volume	Container
S022000360	12x30 ml	

## Standards, conductivity

### PA0100 Conductivity standard, 147 µS/cm (25 °C), KCl 0,001 mol/l

- CAS [7447-40-7]
- EINECS-No.: 231-211-8
- Solub. in water: (20 °C): miscible
- Tariff number: 3104 20 90 00
- Applications: analytical chemistry, laboratory reagent, for electroanalysis.

### Specifications:

conductivity (25 °C) ..... 145 - 149 µS/cm

uncertainty (mS/cm) ..... < 10 %  
 The standard has been measured with an electrode, whose cell constant is approx. 0,1 cm<sup>-1</sup>, and a temperature sensor.  
 The cell constant is calibrated against SRM from NIST (3191, aqueous electrolytic conductivity).

T (°C)	K (mS/cm)
15	118,5
20	132,8

25	147,0
30	161,2
35	177,5
40	191,5

Art. No.	Volume	Container
PA01000250	250 ml	Ⓢ
PA01000500	500 ml	Ⓢ

### PA0101 Conductivity standard, 1413 µS/cm (25 °C), KCl 0,01 mol/l

- CAS [7447-40-7]
- EINECS-No.: 231-211-8
- Solub. in water: (20 °C): miscible
- Tariff number: 3104 20 90 00
- Applications: analytical chemistry, laboratory reagent, for electroanalysis.

### Specifications:

conductivity (25 °C) ..... 1399 - 1427 µS/cm

uncertainty ..... < 1%  
 The standard has been measured with an electrode, whose cell constant is approx. 8,9 cm<sup>-1</sup>, and a temperature sensor.  
 This conductivity standard is traceable to SRM 999b from NIST (KCl).

T (°C)	K (mS/cm)
15	1139
20	1276

25	1413
30	1550
35	1694
40	1833

Art. No.	Volume	Container
PA01010250	250 ml	Ⓢ
PA01010500	500 ml	Ⓢ

### PA0102 Conductivity standard, 12880 µS/cm (25 °C), KCl 0,1 mol/l

- CAS [7447-40-7]
- EINECS-No.: 231-211-8
- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3104 20 90 00
- Applications: analytical chemistry, laboratory reagent, for electroanalysis.

### Specifications:

conductivity (25 °C) ..... 12820 - 12940 µS/cm

uncertainty ..... < 1%  
 The standard has been measured with an electrode, whose cell constant is approx. 8,9 cm<sup>-1</sup>, and a temperature sensor.  
 This conductivity standard is traceable to SRM 999b from NIST (KCl). T (°C)K (mS/cm)

15	10439
20	11664
25	12880
30	14112

35	15392
40	16678

Art. No.	Volume	Container
PA01020250	250 ml	Ⓢ
PA01020500	500 ml	Ⓢ

### PA0103 Conductivity standard, 50000 µS/cm (25 °C), KCl aqueous solution

- CAS [7447-40-7]
- EINECS-No.: 231-211-8
- Density: 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3104 20 90 00
- Applications: analytical chemistry, laboratory reagent, for electroanalysis.

**Specifications:**  
 conductivity (25 °C) ..... 49900 - 50100 µS/cm  
 uncertainty < 1%  
 The standard has been measured with an electrode, whose cell constant is approx. 8,9 cm<sup>-1</sup>, and a temperature sensor.

This conductivity standard is traceable to SRM 999b from NIST (KCl).

Art. No.	Volume	Container
PA01030250	250 ml	Ⓢ

## Standards, IC according 17025

### AM0236 Ammonium, standard solution 1000 mg/l NH<sub>4</sub><sup>+</sup> for IC (NH<sub>4</sub>Cl in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
AM02360100	100 ml	Ⓟ

### BA0012 Barium, standard solution 1000 mg/l Ba<sup>2+</sup> for IC (BaCO<sub>3</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
BA00120100	100 ml	Ⓟ

### BR0131 Bromide, standard solution 1000 mg/l Br<sup>-</sup> for IC (KBr in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
BR01310100	100 ml	Ⓟ

### CA0178 Calcium, standard solution 1000 mg/l Ca<sup>2+</sup> for IC (CaCl<sub>2</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
CA01780100	100 ml	Ⓟ

### CL0229 Chloride, standard solution 1000 mg/l Cl<sup>-</sup> for IC (NaCl in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
CL02290100	100 ml	Ⓟ

### CR0186 Chromium, standard solution 1000 mg/l Cr<sup>6+</sup> for IC ((NH<sub>4</sub>)<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-signal word: Danger
- GHS-H sentences: H334 - H317 - H340 - H350
- GHS-P sentences: P285 - P261 - P280 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
CR01860100	100 ml	Ⓟ

### CI0021 Cyanide, standard solution 1000 mg/l CN<sup>-</sup> for IC (KCN in 0,1% KOH)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
CI00210100	100 ml	Ⓟ

### FL0141 Fluoride, standard solution 1000 mg/l F<sup>-</sup> for IC (NaF in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
FL01410100	100 ml	Ⓟ

### GL0131 Glycolate, standard solution 1000 mg/l C<sub>2</sub>H<sub>3</sub>O<sub>3</sub><sup>-</sup> for IC (C<sub>2</sub>H<sub>4</sub>O<sub>3</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
GL01310100	100 ml	Ⓟ

### Y00077 Iodide, standard solution 1000 mg/l I<sup>-</sup> for IC (KI in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
Y000770100	100 ml	Ⓟ



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<b>LA0048 Lactate, standard solution 1000 mg/l CH<sub>3</sub>CH(OH)COO<sup>-</sup> for IC (CH<sub>3</sub>CH(OH)COONa in H<sub>2</sub>O)</b>				
<ul style="list-style-type: none"> <li>Density: 1,00 g/cm<sup>3</sup></li> <li>Solub. in water: (20 °C): miscible</li> <li>Tariff number: 3822 00 00 00</li> </ul>	<b>Specifications:</b> concentration . . . . . 990 - 1010 mg/l  This standard solution is traceable to Standard Reference Material from NIST.	<b>Art. No.</b> LA00480100	<b>Volume</b> 100 ml	<b>Container</b> 
<b>LI0062 Lithium, standard solution 1000 mg/l Li<sup>+</sup> for IC (Li<sub>2</sub>CO<sub>3</sub> in H<sub>2</sub>O)</b>				
<ul style="list-style-type: none"> <li>Density: 1,00 g/cm<sup>3</sup></li> <li>Solub. in water: (20 °C): miscible</li> <li>Tariff number: 3822 00 00 00</li> </ul>	<b>Specifications:</b> concentration . . . . . 990 - 1010 mg/l  This standard solution is traceable to Standard Reference Material from NIST.	<b>Art. No.</b> LI00620100	<b>Volume</b> 100 ml	<b>Container</b> 
<b>MA0013 Magnesium, standard solution 1000 mg/l Mg<sup>2+</sup> for IC (MgCl<sub>2</sub> in H<sub>2</sub>O)</b>				
<ul style="list-style-type: none"> <li>Density: 1,00 g/cm<sup>3</sup></li> <li>Solub. in water: (20 °C): miscible</li> <li>Tariff number: 3822 00 00 00</li> </ul>	<b>Specifications:</b> concentration . . . . . 990 - 1010 mg/l  This standard solution is traceable to Standard Reference Material from NIST.	<b>Art. No.</b> MA00130100	<b>Volume</b> 100 ml	<b>Container</b> 
<b>NI0192 Nitrate, standard solution 1000 mg/l NO<sub>3</sub><sup>-</sup> for IC (NH<sub>4</sub>NO<sub>3</sub> in H<sub>2</sub>O)</b>				
<ul style="list-style-type: none"> <li>Density: 1,00 g/cm<sup>3</sup></li> <li>Solub. in water: (20 °C): miscible</li> <li>Tariff number: 3822 00 00 00</li> </ul>	<b>Specifications:</b> concentration . . . . . 990 - 1010 mg/l  This standard solution is traceable to Standard Reference Material from NIST.	<b>Art. No.</b> NI01920100	<b>Volume</b> 100 ml	<b>Container</b> 
<b>NI0123 Nitrite, standard solution 1000 mg/l NO<sub>2</sub><sup>-</sup> for IC (NaNO<sub>2</sub> in H<sub>2</sub>O)</b>				
<ul style="list-style-type: none"> <li>Density: 1,00 g/cm<sup>3</sup></li> <li>Solub. in water: (20 °C): miscible</li> <li>Tariff number: 3822 00 00 00</li> </ul>	<b>Specifications:</b> concentration . . . . . 990 - 1010 mg/l  This standard solution is traceable to Standard Reference Material from NIST.	<b>Art. No.</b> NI01230100	<b>Volume</b> 100 ml	<b>Container</b> 
<b>P00321 Perchlorate, standard solution 1000 mg/l ClO<sub>4</sub><sup>-</sup> for IC (KClO<sub>4</sub> in H<sub>2</sub>O)</b>				
<ul style="list-style-type: none"> <li>Density: 1,00 g/cm<sup>3</sup></li> <li>Solub. in water: (20 °C): miscible</li> <li>Tariff number: 3822 00 00 00</li> </ul>	<b>Specifications:</b> concentration . . . . . 990 - 1010 mg/l  This standard solution is traceable to Standard Reference Material from NIST.	<b>Art. No.</b> P003210100	<b>Volume</b> 100 ml	<b>Container</b> 
<b>F00112 Phosphate, standard solution 1000 mg/l PO<sub>4</sub><sup>3-</sup> for IC (NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> in H<sub>2</sub>O)</b>				
<ul style="list-style-type: none"> <li>Density: 1,00 g/cm<sup>3</sup></li> <li>Solub. in water: (20 °C): miscible</li> <li>Tariff number: 3822 00 00 00</li> </ul>	<b>Specifications:</b> concentration . . . . . 990 - 1010 mg/l  This standard solution is traceable to Standard Reference Material from NIST.	<b>Art. No.</b> F001120100	<b>Volume</b> 100 ml	<b>Container</b> 
<b>P00107 Potassium, standard solution 1000 mg/l K<sup>+</sup> for IC (KCl in H<sub>2</sub>O)</b>				
<ul style="list-style-type: none"> <li>Density: 1,00 g/cm<sup>3</sup></li> <li>Solub. in water: (20 °C): miscible</li> <li>Tariff number: 3822 00 00 00</li> </ul>	<b>Specifications:</b> concentration . . . . . 990 - 1010 mg/l  This standard solution is traceable to Standard Reference Material from NIST.	<b>Art. No.</b> P001070100	<b>Volume</b> 100 ml	<b>Container</b> 
<b>AC1895 Propionate, standard solution 1000 mg/l C<sub>3</sub>H<sub>5</sub>O<sub>2</sub><sup>-</sup> for IC (C<sub>3</sub>H<sub>5</sub>NaO<sub>2</sub> in H<sub>2</sub>O)</b>				
<ul style="list-style-type: none"> <li>Density: 1,00 g/cm<sup>3</sup></li> <li>Solub. in water: (20 °C): miscible</li> <li>Tariff number: 3822 00 00 00</li> </ul>	<b>Specifications:</b> concentration . . . . . 990 - 1010 mg/l  This standard solution is traceable to Standard Reference Material from NIST.	<b>Art. No.</b> AC18950100	<b>Volume</b> 100 ml	<b>Container</b> 
<b>S00007 Sodium, standard solution 1000 mg/l Na<sup>+</sup> for IC (NaCl in H<sub>2</sub>O)</b>				
<ul style="list-style-type: none"> <li>Density: 1,00 g/cm<sup>3</sup></li> <li>Solub. in water: (20 °C): miscible</li> <li>Tariff number: 3822 00 00 00</li> </ul>	<b>Specifications:</b> concentration . . . . . 990 - 1010 mg/l  This standard solution is traceable to Standard Reference Material from NIST.	<b>Art. No.</b> S000070100	<b>Volume</b> 100 ml	<b>Container</b> 

## ES0182 Strontium, standard solution 1000 mg/l Sr<sup>2+</sup> for IC (SrCO<sub>3</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
ES01820100	100 ml	

## SU0103 Sulfate, standard solution 1000 mg/l SO<sub>4</sub><sup>2-</sup> for IC (Na<sub>2</sub>SO<sub>4</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00

**Specifications:**  
concentration . . . . . 990 - 1010 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
SU01030100	100 ml	

## Standards, ICP single element, according to 17025

### AL0754 Aluminium, standard solution 1000 mg/l for ICP (Al in HNO<sub>3</sub> 2%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
AL07540100	100 ml	

### AN0445 Antimony, standard solution 1000 mg/l for ICP (Sb in HCl 20%)

- Density: 1,05 g/cm<sup>3</sup>
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
AN04450100	100 ml	

### AR0156 Arsenic, standard solution 1000 mg/l for ICP (As<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Danger
- GHS-H sentences: H315 - H319 - H350
- GHS-P sentences: P280 - P281 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
AR01560100	100 ml	

### BA0016 Barium, standard solution 1000 mg/l for ICP (Ba(NO<sub>3</sub>)<sub>2</sub> in HNO<sub>3</sub> 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
BA00160100	100 ml	

### BE0346 Beryllium, standard solution 1000 mg/l for ICP (Be<sub>4</sub>(C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>)<sub>6</sub> in HCl 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Danger
- GHS-H sentences: H317 - H331 - H350i
- GHS-P sentences: P261 - P280 - P281 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
BE03460100	100 ml	

### BI0136 Bismuth, standard solution 1000 mg/l for ICP (Bi in HNO<sub>3</sub> 5%)

- Density: 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
BI01360100	100 ml	

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## B00018 Boron, standard solution 1000 mg/l for ICP (H<sub>3</sub>BO<sub>3</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- GHS-signal word: Danger
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
B000180100	100 ml	

## CA0045 Cadmium, standard solution 1000 mg/l for ICP (Cd in HNO<sub>3</sub> 2%)

- Density: 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
CA00450100	100 ml	

**Specifications:**  
 concentration . . . . . 1000 mg/l

## CA0181 Calcium, standard solution 1000 mg/l for ICP (CaCO<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

Art. No.	Volume	Container
CA01810100	100 ml	

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

## CE0038 Cerium, standard solution 1000 mg/l for ICP (Ce(NO<sub>3</sub>)<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

Art. No.	Volume	Container
CE00380100	100 ml	

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

## CE0108 Cesium, standard solution 1000 mg/l for ICP (CsNO<sub>3</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
CE01080100	100 ml	

## CR0227 Chromium, standard solution 1000 mg/l for ICP (Cr(NO<sub>3</sub>)<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

Art. No.	Volume	Container
CR02270100	100 ml	

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

## C00014 Cobalt, standard solution 1000 mg/l for ICP (Co in HNO<sub>3</sub> 2%)

- Density: 1,02 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H350i - H360F - H315 - H319 - H411

- GHS-P sentences: P280 - P281 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
C000140100	100 ml	

**Specifications:**  
 concentration . . . . . 1000 mg/l

## C00081 Copper, standard solution 1000 mg/l for ICP (Cu in HNO<sub>3</sub> 2%)

- Density: 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
C000810100	100 ml	

**Specifications:**  
 concentration . . . . . 1000 mg/l

## DI1301 Dysprosium, standard solution 1000 mg/l for ICP (Dy<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
DI13010100	100 ml	Ⓟ

**Specifications:**  
concentration . . . . . 1000 mg/l

## ER0031 Erbium, standard solution 1000 mg/l for ICP (Er<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: 1,02 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
ER00310100	100 ml	Ⓟ

**Specifications:**  
concentration . . . . . 1000 mg/l

## EU0052 Europium, standard solution 1000 mg/l for ICP (Eu<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: 1,03 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
EU00520100	100 ml	Ⓟ

**Specifications:**  
concentration . . . . . 1000 mg/l

## GA0011 Gadolinium, standard solution 1000 mg/l for ICP (Gd<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: 1,02 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
GA00110100	100 ml	Ⓟ

**Specifications:**  
concentration . . . . . 1000 mg/l

## GA0036 Gallium, standard solution 1000 mg/l for ICP (Ga in HNO<sub>3</sub> 2%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
GA00360100	100 ml	Ⓟ

**Specifications:**  
concentration . . . . . 1000 mg/l

## GE0072 Germanium, standard solution 1000 mg/l for ICP (Ge in HNO<sub>3</sub> 5% + HF 1%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 CT1 II UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- GHS-signal word: Danger
- GHS-H sentences: H311 - H315 - H319 -
- GHS-P sentences: P280 - P305 + P351 + P338 - P361 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.
- Appearance: Colourless liquid

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
GE00720100	100 ml	Ⓟ

**Specifications:**  
concentration . . . . . 1000 mg/l

## OR0063 Gold, standard solution 1000 mg/l for ICP (Au in HCl 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
OR00630100	100 ml	Ⓟ

**Specifications:**  
concentration . . . . . 1000 mg/l

## HA0011 Hafnium, standard solution 1000 mg/l for ICP (HfO<sub>2</sub> in HNO<sub>3</sub> 2% + HF 1%)



- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362 -

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
HA00110100	100 ml	Ⓟ

**Specifications:**  
concentration . . . . . 1000 mg/l

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## IN0088 Indium, standard solution 1000 mg/l for ICP (In in HNO<sub>3</sub> 2%)



- Density: 1,00 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
IN00880100	100 ml	

## IR0011 Iridium, standard solution 1000 mg/l for ICP (IrCl<sub>3</sub> in HCl 10%)



- Density: 1,05 g/cm<sup>3</sup>
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
IR00110100	100 ml	

## HI0291 Iron, standard solution 1000 mg/l for ICP (Fe in HNO<sub>3</sub> 2%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
HI02910100	100 ml	

## LA0081 Lanthanum, standard solution 1000 mg/l for ICP (La<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
LA00810100	100 ml	

## PL0108 Lead, standard solution 1000 mg/l for ICP (Pb(NO<sub>3</sub>)<sub>2</sub> in HNO<sub>3</sub> 2%)



- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Danger
- GHS-H sentences: H315 - H319 - H360

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
PL01080100	100 ml	

## LI0064 Lithium, standard solution 1000 mg/l for ICP (Li<sub>2</sub>CO<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: 1,02 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
LI00640100	100 ml	

## LU0016 Lutetium, standard solution 1000 mg/l for ICP (Lu<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
LU00160100	100 ml	

## MA0016 Magnesium, standard solution 1000 mg/l for ICP (Mg(NO<sub>3</sub>)<sub>2</sub> in HNO<sub>3</sub> 2%)



- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362 - -

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
concentration . . . . . 1000 mg/l  
This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
MA00160100	100 ml	



## MA0116 Manganese, standard solution 1000 mg/l for ICP (Mn in HNO<sub>3</sub> 2%)



- Density: 1,02 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
MA01160100	100 ml	P

## ME0116 Mercury, standard solution 1000 mg/l for ICP (HgO in HNO<sub>3</sub> 10%)



- Density: 1,08 g/cm<sup>3</sup>
- ADR: 8 C9 II UN 1760
- IMDG: 8 II UN 1760
- IATA/ICAO: 8 II UN 1760
- GHS-signal word: Danger
- GHS-H sentences: H314 - H373
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
ME01160100	100 ml	P

## MO0024 Molybdenum, standard solution 1000 mg/l for ICP (MoO<sub>3</sub> in NH<sub>3</sub> 4%)



- Density: 0,98 g/cm<sup>3</sup>
- GHS-signal word: Danger
- GHS-H sentences: H315 - H318 - H351
- GHS-P sentences: P264 - P280 - P305 + P351 + P338 - P321 - P332 + P313 - P362
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
 concentration . . . . . 1000 mg/l

Art. No.	Volume	Container
MO00240100	100 ml	P

## NE0064 Neodymium, standard solution 1000 mg/l for ICP (Nd<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
NE00640100	100 ml	P

## NI0126 Nickel, standard solution 1000 mg/l for ICP (Ni in HNO<sub>3</sub> 2%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - -
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
NI01260100	100 ml	P

## NI0071 Niobium, standard solution 1000 mg/l for ICP (Nb in HNO<sub>3</sub> 5% + HF 1%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 CT1 II UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- GHS-signal word: Danger
- GHS-H sentences: H311 - H315 - H319 - -
- GHS-P sentences: P280 - P305 + P351 + P338 - P361 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
NI00710100	100 ml	P

## OS0056 Osmium, standard solution 1000 mg/l for ICP (OsCl<sub>3</sub> in HCl 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 1789
- IMDG: 8 III UN 1789
- IATA/ICAO: 8 III UN 1789
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
 concentration . . . . . 1000 mg/l

Art. No.	Volume	Container
OS00560100	100 ml	P

## PA0066 Palladium, standard solution 1000 mg/l for ICP (Pd in HCl 5%)

- Density: 1,10 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
 concentration . . . . . 1000 mg/l

Art. No.	Volume	Container
PA00660100	100 ml	P

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## F00036 Phosphorus, standard solution 1000 mg/l for ICP (NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> in H<sub>2</sub>SO<sub>4</sub> 0,05%)

- Density: 1,00 g/cm<sup>3</sup>
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
F000360100	100 ml	

## PT0006 Platinum, standard solution 1000 mg/l for ICP (Pt in HCl 10%)

- Density: 1,05 g/cm<sup>3</sup>
- ADR: 8 C1 II UN 3264
- IMDG: 8 II UN 3264
- IATA/ICAO: 8 II UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a

• Tariff number: 3822 00 00 00  
 • Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
PT00060100	100 ml	

## P00111 Potassium, standard solution 1000 mg/l for ICP (KNO<sub>3</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
P001110100	100 ml	

## RE0078 Rhenium, standard solution 1000 mg/l for ICP (Re in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
RE00780100	100 ml	

## R00023 Rhodium, standard solution 1000 mg/l for ICP (RhCl<sub>3</sub> in HCl 5%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 1789
- IMDG: 8 III UN 1789
- IATA/ICAO: 8 III UN 1789
- GHS-signal word: Danger
- GHS-H sentences: EUH210

• Tariff number: 3822 00 00 00  
 • Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
R000230100	100 ml	

## RU0021 Rubidium, standard solution 1000 mg/l for ICP (RbNO<sub>3</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
RU00210100	100 ml	

## RU0063 Ruthenium, standard solution 1000 mg/l for ICP (RuCl<sub>3</sub> in HCl 5%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 1789
- IMDG: 8 III UN 1789
- IATA/ICAO: 8 III UN 1789
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00

• Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
RU00630100	100 ml	

## SA0211 Samarium, standard solution 1000 mg/l for ICP (Sm<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

• Tariff number: 3822 00 00 00  
 • Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
SA02110100	100 ml	

## ES0021 Scandium, standard solution 1000 mg/l for ICP (Sc<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

• Tariff number: 3822 00 00 00  
 • Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
ES00210100	100 ml	

## SE0016 Selenium, standard solution 1000 mg/l for ICP (Se in HNO<sub>3</sub> 2%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
SE00160100	100 ml	

## SI0016 Silicon, standard solution 1000 mg/l for ICP ((NH<sub>4</sub>)<sub>2</sub>SiF<sub>6</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
SI00160100	100 ml	

## PL0008 Silver, standard solution 1000 mg/l for ICP (AgNO<sub>3</sub> in HNO<sub>3</sub> 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
PL00080100	100 ml	

## S00009 Sodium, standard solution 1000 mg/l for ICP (NaNO<sub>3</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
S000090100	100 ml	

## ES0181 Strontium, standard solution 1000 mg/l for ICP (Sr(NO<sub>3</sub>)<sub>2</sub> in HNO<sub>3</sub> 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
ES01810100	100 ml	

## SU0102 Sulfur, standard solution 1000 mg/l for ICP ((NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> in H<sub>2</sub>O)

- Density: 1,00 g/cm<sup>3</sup>
- LD 50 (oral, rat): 4250 mg/kg (pure substance)
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
SU01020100	100 ml	

## TA0201 Tantalum, standard solution 1000 mg/l for ICP (Ta in HNO<sub>3</sub> 5% + HF 1%)

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 CT1 II UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- GHS-signal word: Danger
- GHS-H sentences: H311 - H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P361 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
TA02010100	100 ml	

## TE0023 Tellurium, standard solution 1000 mg/l for ICP (Te in HCl 20%)

- Density: 1,09 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
 concentration . . . . . 1000 mg/l

Art. No.	Volume	Container
TE00230100	100 ml	

## TA0031 Thallium, standard solution 1000 mg/l for ICP (Tl in HNO<sub>3</sub> 2%)

- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
TA00310100	100 ml	



# Standa

## ES0066 Tin, standard solution 1000 mg/l for ICP (Sn in HCl 20%)



- Density: 1,08 g/cm<sup>3</sup>
- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
ES00660100	100 ml	

## TI0366 Titanium, standard solution 1000 mg/l for ICP ((NH<sub>4</sub>)<sub>2</sub>TiF<sub>6</sub> in HNO<sub>3</sub> 5% + HF 0,5%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C9 II UN 1760
- IMDG: 8 II UN 1760
- IATA/ICAO: 8 II UN 1760
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
TI03660100	100 ml	

## TU0016 Tungsten, standard solution 1000 mg/l for ICP (WO<sub>3</sub> in NH<sub>3</sub> 4%)



- Density: 0,98 g/cm<sup>3</sup>
- GHS-signal word: Danger
- GHS-H sentences: H315 - H318
- GHS-P sentences: P264 - P280 - P305 + P351 + P338 - P321 - P332 + P313 - P362
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

This standard solution is traceable to Standard Reference Material from NIST.

**Specifications:**  
 concentration . . . . . 1000 mg/l

Art. No.	Volume	Container
TU00160100	100 ml	

## VA0076 Vanadium, standard solution 1000 mg/l for ICP (V<sub>2</sub>O<sub>5</sub> in HNO<sub>3</sub> 2%)



- Density: 1,01 g/cm<sup>3</sup>
- ADR: 8 C9 III UN 1760
- IMDG: 8 III UN 1760
- IATA/ICAO: 8 III UN 1760
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P332 + P313 - P337 + P313 - P362

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
VA00760100	100 ml	

## IT0004 Ytterbium, standard solution 1000 mg/l for ICP (Yb<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
IT00040100	100 ml	

## IT0011 Yttrium, standard solution 1000 mg/l for ICP (Y<sub>2</sub>O<sub>3</sub> in HNO<sub>3</sub> 2%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
IT00110100	100 ml	

## CI0129 Zinc, standard solution 1000 mg/l for ICP (Zn in HNO<sub>3</sub> 2%)



- Density: 1,02 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
CI01290100	100 ml	

## CI0256 Zirconium, standard solution 1000 mg/l for ICP (ZrO(NO<sub>3</sub>)<sub>2</sub> in HNO<sub>3</sub> 5% + HF 0,5%)



- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C9 II UN 1760
- IMDG: 8 II UN 1760
- IATA/ICAO: 8 II UN 1760
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P321 - P405 - P501a

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**  
 concentration . . . . . 1000 mg/l  
 This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
CI02560100	100 ml	

## Standards, ICP multielement, according to 17025

### MU0114 ICP multielement calibration standard solution, 4 elements in HCl 1%

- Density: 1,02 g/cm<sup>3</sup>
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**

calcium (Ca)	100 ppm
magnesium (Mg)	20 ppm
potassium (K)	150 ppm
sodium (Na)	3300 ppm

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
MU01140100	100 ml	

### MU0112 ICP multielement calibration standard solution, 9 elements in HNO<sub>3</sub> 5%

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H350 - H315 - H319 - H317 - H412
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3822 00 00 00

Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**

cadmium (Cd)	100 ppm
chromium (Cr)	100 ppm
cobalt (Co)	100 ppm
copper (Cu)	100 ppm
lead (Pb)	100 ppm
manganese (Mn)	100 ppm

nickel (Ni)	100 ppm
vanadium (V)	100 ppm
zinc (Zn)	100 ppm

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
MU01120100	100 ml	

### MU0113 ICP multielement calibration standard solution, 16 elements in HNO<sub>3</sub> 10%

- ADR: 8 C1 II UN 3264
- IMDG: 8 II UN 3264
- IATA/ICAO: 8 II UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H350 - H314 - H317
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**

aluminium (Al)	100 ppm
barium (Ba)	5 ppm
beryllium (Be)	2 ppm
boron (B)	20 ppm
cadmium (Cd)	20 ppm
chromium (Cr)	20 ppm
cobalt (Co)	50 ppm
copper (Cu)	20 ppm
iron (Fe)	20 ppm
lead (Pb)	200 ppm
manganese (Mn)	10 ppm

nickel (Ni)	50 ppm
selenium (Se)	5 ppm
thallium (Tl)	100 ppm
vanadium (V)	50 ppm
zinc (Zn)	50 ppm

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
MU01130100	100 ml	

### MU0111 ICP multielement calibration standard solution, 26 elements in HNO<sub>3</sub> 5%

- Density: 1,03 g/cm<sup>3</sup>
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H350 - H315 - H319 - H317 - H412
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for inducted coupled plasma (ICP) analysis.

**Specifications:**

aluminium (Al)	100 ppm
arsenic (As)	100 ppm

barium (Ba)	100 ppm
beryllium (Be)	100 ppm
bismuth (Bi)	100 ppm
boron (B)	100 ppm
cadmium (Cd)	100 ppm
calcium (Ca)	100 ppm
chromium (Cr)	100 ppm
cobalt (Co)	100 ppm
copper (Cu)	100 ppm
iron (Fe)	100 ppm
lead (Pb)	100 ppm
lithium (Li)	100 ppm
magnesium (Mg)	100 ppm
manganese (Mn)	100 ppm
molybdenum (Mo)	100 ppm
nickel (Ni)	100 ppm

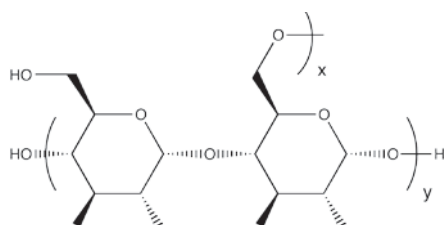
potassium (K)	100 ppm
selenium (Se)	100 ppm
sodium (Na)	100 ppm
strontium (Sr)	100 ppm
thallium (Tl)	100 ppm
titanium (Ti)	100 ppm
vanadium (V)	100 ppm
zinc (Zn)	100 ppm

This standard solution is traceable to Standard Reference Material from NIST.

Art. No.	Volume	Container
MU01110100	100 ml	

## Starch

### AL0715 Starch, soluble, synthesis grade



- Synonyms: Amylum, Potato starch
- (C<sub>6</sub>H<sub>10</sub>O<sub>5</sub>)<sub>n</sub>
- CAS [9005-84-9]
- EINECS-No.: 232-686-4
- Solub. in water: (90 °C): 50 g/l
- Tariff number: 3505 10 90 00
- Applications: analytical chemistry, indicator (iodometric analyses), laboratory reagent, synthesis of organic products.

**Specifications:**

pH (2 %, H <sub>2</sub> O)	5,0 - 7,0
solubility	.passes test

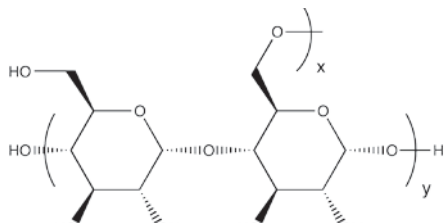
sensitivity to iodine . . . . . passes test  
residue on ignition . . . . . max. 1,5 %  
loss on drying (105 °C) . . . . . 10 - 20 %

Art. No.	Volume	Container
AL07150100	100 g	
AL07150250	250 g	
AL07150500	500 g	
AL07151000	1 kg	
AL0715025P	25 kg	

# Starch

## Starch, solution 1%

### AL0718 Starch, solution 1% w/v



- Synonyms: Amylum solution, Potato starch solution
- $(C_6H_{10}O_5)_n$
- CAS [9005-84-9]
- EINECS-No.: 232-686-4
- Tariff number: 3505 10 90 00
- Applications: analytical chemistry, indicator (iodometric analyses).

#### Specifications:

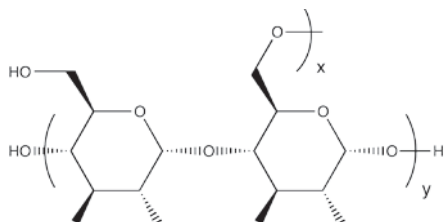
sensitivity as indicator in iodometry. . . . .passes test

store below room temperature Avoid exposure to light

Art. No.	Volume	Container
AL0718G100	100 ml	
AL0718O250	250 ml	
AL0718O500	500 ml	

## Starch, solution 2%

### AL0719 Starch, solution 2%



- $(C_6H_{10}O_5)_n$
- CAS [9005-84-9]
- EINECS-No.: 232-686-4
- Density: 1,01 g/cm<sup>3</sup>
- Tariff number: 3505 10 90 00

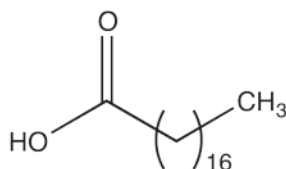
#### Specifications:

sensitivity as indicator in iodometry. . . . .passes test

store below room temperature Avoid exposure to light

Art. No.	Volume	Container
AL0719O500	500 ml	

## Stearic acid



- Synonyms: Octadecanoic acid
- $C_{18}H_{36}O_2$
- M = 284,47 g/mol
- CAS [57-11-4]
- EINECS-No.: 200-313-4
- Solub. in water: (20 °C): insoluble
- Melting point: 67 °C
- Boiling point: (19,95 hPa) 232 °C
- Flash pt. 196 °C

- Ignition temp.: 395 °C
- Vapour pressure: (148 °C) 0,13 hPa
- Tariff number: 2915 70 50 00
- Applications: laboratory reagent, synthesis of organic products, in the pharmaceuticals industry, cosmetics.

### AC0925 Stearic acid 70, synthesis grade

total content (palmitic + stearic acid, G.C., as methyl ester) . . . . .min. 90 %  
identity (IR-spectrum) . . . . .passes test  
freezing point . . . . .57 - 64 °C

Art. No.	Volume	Container
AC0925O500	500 g	
AC0925I000	1 kg	

### AC0926 Stearic acid 70, extra pure

total content (palmitic + stearic acid, G.C., as methyl ester) . . . . .min. 90 %  
identity (IR-spectrum) . . . . .passes test  
appearance . . . . .passes test  
freezing point . . . . .57 - 64 °C  
acidity. . . . .passes test  
palmitic acid (G.C.) . . . . .max. 30 %

stearic acid (G.C.) . . . . .min. 70 %  
acidity index . . . . .194 - 212  
iodine index . . . . .max. 4  
heavy metals (as Pb). . . . .max. 0,001 %  
nickel (Ni) . . . . .max. 0,0001 %  
mineral acid . . . . .passes test  
neutral fat or paraffin. . . . .passes test

residue on ignition . . . . .max. 0,1 %

Art. No.	Volume	Container
AC0926O500	500 g	
AC0926I000	1 kg	

## Stearyl alcohol



- Synonyms: 1-Octadecanol, Octadecyl alcohol
- $C_{18}H_{38}O$
- M = 270,50 g/mol
- CAS [112-92-5]
- EINECS-No.: 204-017-6
- Solub. in water: (20 °C): insoluble
- Melting point: 55 - 57,5 °C
- Boiling point: (20 hPa) 210 °C
- Flash pt. ~ 195 °C

- Ignition temp.: 230 °C
- LD 50 (oral, rat): 20000 mg/kg
- Tariff number: 2905 17 00 00
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products, for pharmaceuticals synthesizing, cosmetics, emulsifier, antifoaming agent, in lubricant compositions.

### AL0235 Stearyl alcohol, synthesis grade

assay (G.C.) . . . . .min. 95 %  
identity (IR-spectrum) . . . . .passes test

Art. No.	Volume	Container
AL0235I000	1 kg	

### AL0236 Stearyl alcohol, extra pure

assay (G.C.) . . . . .min. 95 %  
identification . . . . .passes test  
appearance of solution . . . . .passes test  
melting point . . . . .57 - 60 °C

acid value . . . . .max 1,0  
hydroxyl value . . . . .197 - 217  
iodine value . . . . .max. 2,0  
saponification index . . . . .max. 2,0

Art. No.	Volume	Container
AL0236I000	1 kg	

## Strontium nitrate anhydrous

## ES0180 Strontium nitrate anhydrous, extra pure



- Synonyms: Nitric acid strontium salt
- $\text{Sr}(\text{NO}_3)_2$
- M = 211,63 g/mol
- CAS [10042-76-9]
- EINECS-No.: 233-131-9
- Solub. in water: (20 °C): 660 g/l
- Melting point: 570 °C
- LD 50 (oral, rat): 2750 mg/kg
- ADR: 5.1 O2 III UN 1507
- IMDG: 5.1 III UN 1507
- IATA/ICAO: 5.1 III UN 1507
- GHS-signal word: Danger

- GHS-H sentences: H272
- GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a
- Tariff number: 2834 29 80 00
- Applications: analytical chemistry, laboratory reagent, for the analysis of: metal ions traces.
- Appearance: White crystals

pH (5 %,  $\text{H}_2\text{O}$ ) . . . . . 5 - 7  
 chlorides (Cl) . . . . . max. 0,005 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,02 %  
 copper (Cu) . . . . . max. 0,002 %  
 iron (Fe) . . . . . max. 0,005 %  
 lead (Pb) . . . . . max. 0,002 %  
 nickel (Ni) . . . . . max. 0,002 %

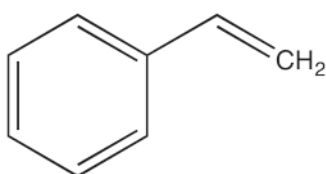
**Specifications:**

assay (complexometric) . . . . . min. 98 %  
 acidity (as  $\text{HNO}_3$ ) . . . . . max. 0,01 %  
 insoluble in water . . . . . max. 0,025 %

Art. No.	Volume	Container
ES01800500	500 g	
ES01801000	1 kg	

## Styrene

## ES0140 Styrene, stabilized, synthesis grade



- Synonyms: Phenylethylene, Vinylbenzene
- $\text{C}_8\text{H}_8$
- M = 104,15 g/mol
- CAS [100-42-5]
- EINECS-No.: 202-851-5
- Density: 0,906 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,24 g/l
- Melting point: -31 °C
- Boiling point: 145 °C
- Flash pt. 31 °C
- Ignition temp.: 480 °C
- Vapour pressure: (20 °C) 6 hPa
- Refraction index: (n 20 °C/D) 1,5458
- LD 50 (oral, rat): 2650 mg/kg
- EC-Index-No.: 601-026-00-0
- ADR: 3 F1 III UN 2055
- IMDG: 3 III UN 2055
- IATA/ICAO: 3 III UN 2055
- GHS-signal word: Warning

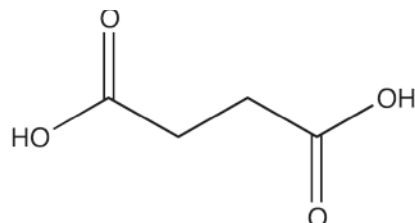
- GHS-H sentences: H226 - H332 - H315 - H319
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P321 - P501a
- Tariff number: 2902 50 00 00
- Applications: synthesis of organic products, laboratory reagent, manufacturing of synthetic resins, for the synthesis of: rubber, various plastics.

**Specifications:**

assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,904 - 0,908  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
ES01400100	100 ml	
ES01401000	1 l	
ES01402500	2,5 l	

## Succinic acid



- Synonyms: Butanedioic acid
- $\text{C}_4\text{H}_6\text{O}_4$
- M = 118,09 g/mol
- CAS [110-15-6]
- EINECS-No.: 203-740-4
- Solub. in water: (20 °C): soluble
- Melting point: 183 - 187 °C
- Boiling point: ~ 235 °C
- Flash pt. 206 °C
- Ignition temp.: ~ 630 °C

- LD 50 (oral, rat): 2260 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2917 19 90 90
- Applications: analytical chemistry, titrant in volumetric analysis, synthesis of organic products, in food industry (E 363).

## AC2040 Succinic acid, extra pure, Pharmpur®, NF



assay (acidimetric) . . . . . 99 - 100,5 %  
 identification . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 melting range . . . . . 185,0 - 190 °C

residue on ignition . . . . . max. 0,025 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC20400500	500 g	
AC20401000	1 kg	

## AC2042 Succinic acid, reagent grade, ACS, Reag. Ph Eur



assay (acidimetric) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . passes test  
 insoluble in water . . . . . max. 0,005 %  
 melting point . . . . . 185 - 191 °C  
 total nitrogen (as N) . . . . . max. 0,001 %  
 chlorides (Cl) . . . . . max. 0,0005 %

phosphates (as  $\text{PO}_4$ ) . . . . . max. 0,001 %  
 sulfates ( $\text{SO}_4$ ) . . . . . max. 0,003 %  
 ammonium ( $\text{NH}_4$ ) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,0005 %  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 fumaric acid (HPLC) . . . . . max. 0,5 %  
 residue on ignition . . . . . max. 0,02 %

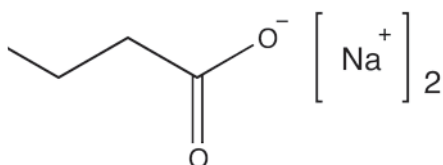
water (K.F.) . . . . . max. 0,5 %

Art. No.	Volume	Container
AC20420100	100 g	
AC20420250	250 g	

# Succin

## Succinic acid, disodium salt hexahydrate

### S00645 Succinic acid, disodium salt hexahydrate, reagent grade



- Synonyms: di-Sodium succinate hexahydrate
- $C_4H_4Na_2O_7 \cdot 6H_2O$
- $M = 270,15 \text{ g/mol}$
- CAS [6106-21-4]
- EINECS-No.: 205-778-7
- Solub. in water: (35 °C): 349 g/l
- Tariff number: 2917 19 90 90
- Applications: synthesis of organic products, in food industry, in the pharmaceuticals industry.

#### Specifications:

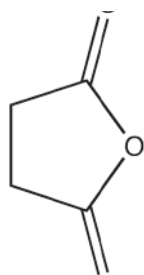
assay (titr. with  $HClO_4$ , referred to dried sample) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,005 %  
 sulfates ( $SO_4$ ) . . . . .max. 0,005 %  
 cadmium (Cd) . . . . .max. 0,0005 %

calcium (Ca) . . . . .max. 0,001 %  
 chromium (Cr) . . . . .max. 0,0005 %  
 cobalt (Co) . . . . .max. 0,0005 %  
 copper (Cu) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0005 %  
 lead (Pb) . . . . .max. 0,0005 %  
 magnesium (Mg) . . . . .max. 0,0005 %  
 manganese (Mn) . . . . .max. 0,0005 %  
 nickel (Ni) . . . . .max. 0,0005 %  
 potassium (K) . . . . .max. 0,005 %  
 zinc (Zn) . . . . .max. 0,0005 %  
 water (K.F.) . . . . .38 - 40 %

Art. No.	Volume	Container
S006450500	500 g	Ⓟ
S006451000	1 kg	Ⓟ

## Succinic anhydride

### AN0320 Succinic anhydride, synthesis grade



- Synonyms: 2,5-Dioxotetrahydrofuran
- $C_4H_4O_3$
- $M = 100,07 \text{ g/mol}$
- CAS [108-30-5]
- EINECS-No.: 203-570-0
- Solub. in water: (20 °C): 67 g/l (hydrolysis reaction)
- Melting point: 119 °C
- Boiling point: 261 °C
- Flash pt. 157 °C
- Vapour pressure: (92 °C) 1,3 hPa
- LD 50 (oral, rat): 1510 mg/kg
- EC-Index-No.: 607-103-00-5
- GHS-signal word: Warning
- GHS-H sentences: H302 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P301 + P312 - P405 - P501a

- Tariff number: 2917 19 90 90
- Applications: laboratory reagent, synthesis of organic products, in food industry, manufacture of dyes, manufacture of adhesives.

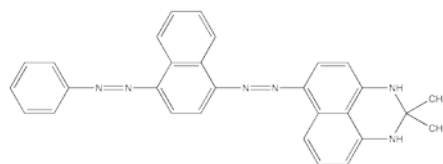
#### Specifications:

assay (morpholine method) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,01 %

Art. No.	Volume	Container
AN03201000	1 kg	Ⓟ
AN0320005P	5 kg	Ⓟ

## Sudan Black B, C.I. 26150

### NE0050 Sudan Black B, C.I. 26150, for microscopy



- Synonyms: 2,3-Dihydro-2,2-dimethyl-6-[[4-(phenylazo)-1-naphthalenyl]azo]-1H-perimidine, SBB
- $C_{29}H_{24}N_6$
- $M = 456,55 \text{ g/mol}$
- CAS [4197-25-5]
- EINECS-No.: 224-087-1
- Solub. in water: (20 °C): insoluble
- Melting point: 150 - 154 °C
- LD 50 (oral, rat): > 15000 mg/kg
- Tariff number: 3204 19 00 90
- Applications: indicator, microscopy, in the textile industry.

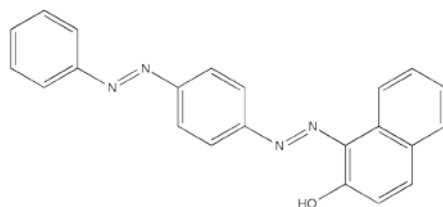
#### Specifications:

Absorption maximum  $\lambda$  (in ethanol) . . . . .596 - 605 nm  
 Absorptivity ( $A_{1\%}^{1 \text{ cm}}$ ;  $\lambda$  max.) . . . . .390 - 670  
 loss on drying (105 °C) . . . . .max. 1 %

Art. No.	Volume	Container
NE00500025	25 g	Ⓟ
NE00500100	100 g	Ⓟ

## Sudan III, C.I. 26100

### SU0040 Sudan III, C.I. 26100, for microscopy



- Synonyms: 1-(p-Phenylazophenylazo)-2-naphthol, Sudan red BK
- $C_{22}H_{16}N_4O$
- $M = 352,40 \text{ g/mol}$
- CAS [85-86-9]
- EINECS-No.: 201-638-4
- Tariff number: 3204 19 00 90
- Applications: microscopy, bacterium staining.

#### Specifications:

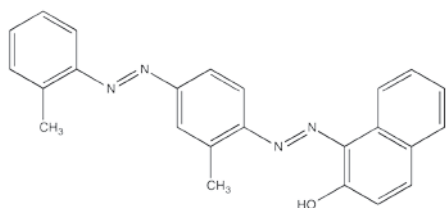
suitability for microscopy . . . . .passes test

Art. No.	Volume	Container
SU00400025	25 g	Ⓟ
SU00400100	100 g	Ⓟ



## Sudan IV, C.I. 26105

## SU0045 Sudan IV, C.I. 26105, for microscopy



- Synonyms: 1-[2-Methyl-4-(2-methylphenylazo)phenylazo]-2-naphthol, Solvent red 24
- $C_{24}H_{20}N_2O$
- $M = 380,45 \text{ g/mol}$
- CAS [85-83-6]
- EINECS-No.: 201-635-8
- GHS-signal word: Warning
- GHS-H sentences: H312 - H332
- GHS-P sentences: P261 - P280 - P322 - P304 + P340 - P312 - P501a

- Tariff number: 2927 00 00 90
- Applications: microscopy, bacterium staining.

## Specifications:

suitability for microscopy .....passes test

Art. No.	Volume	Container
SU00450025	25 g	
SU00450100	100 g	

## Sulfamic acid

- Synonyms: Amidosulfonic acid, Sulfaminic acid, Sulfamidic acid, Aminosulfonic acid
- $HSO_3NH_2$
- $M = 97,09 \text{ g/mol}$
- CAS [5329-14-6]
- EINECS-No.: 226-218-8
- Solub. in water: (20 °C): 213 g/l

- Melting point: 205 °C (decomposes)
- LD 50 (oral, rat): 3160 mg/kg
- EC-Index-No.: 016-026-00-0
- ADR: 8 C2 III UN 2967
- IMDG: 8 III UN 2967
- IATA/ICAO: 8 III UN 2967
- GHS-signal word: Warning

- GHS-H sentences: H315 - H319 - H412
- GHS-P sentences: P280 - P273 - P305 + P351 + P338 - P321 - P362 - P501a
- Tariff number: 2811 19 80 10
- Applications: analytical chemistry, titrant in volumetric analysis (reference material), for determination of: nitrous acid.

## AC2050 Sulfamic acid, synthesis grade



assay (acidimetric) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 residue on ignition .....max. 0,3 %

Art. No.	Volume	Container
AC20501000	1 kg	

## AC2051 Sulfamic acid, extra pure



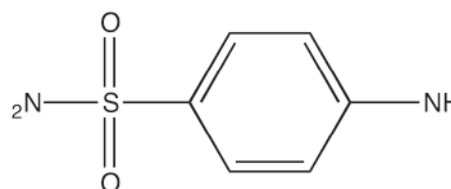
assay (acidimetric) .....min. 99,5 %  
 identity (IR-spectrum) .....passes test  
 sulfates ( $SO_4$ ) .....max. 0,01 %  
 copper (Cu) .....max. 0,001 %  
 heavy metals (as Pb) .....max. 0,001 %

iron (Fe) .....max. 0,0005 %  
 lead (Pb) .....max. 0,001 %  
 nickel (Ni) .....max. 0,001 %  
 residue on ignition .....max. 0,05 %  
 water (K.F.) .....max. 0,2 %

Art. No.	Volume	Container
AC20511000	1 kg	
AC2051025P	25 kg	

## Sulfanilamide

## SU0060 Sulfanilamide, extra pure, Pharmpur®, Ph Eur



- Synonyms: 4-Aminobenzenesulfonamide
- $C_6H_8N_2O_2S$
- $M = 172,21 \text{ g/mol}$
- CAS [63-74-1]
- EINECS-No.: 200-563-4
- Solub. in water: (25 °C): 7,5 g/l
- Melting point: 163 - 167 °C
- LD 50 (oral, rat): 3900 mg/kg
- Tariff number: 2935 00 90 90
- Applications: analytical chemistry, laboratory reagent, antibacterian, in the pharmaceuticals industry, in pharma industry.

identity (IR-spectrum) .....passes test  
 acidity .....passes test  
 heavy metals (as Pb) .....max. 0,002 %  
 related substances (TLC) .....passes test  
 residue on ignition .....max. 0,1 %  
 loss on drying (105 °C) .....max. 0,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

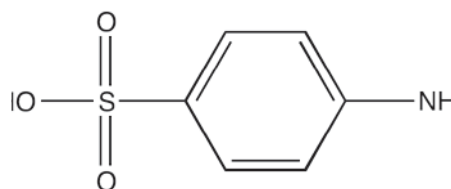
Art. No.	Volume	Container
SU00600100	100 g	
SU00601000	1 kg	

## Specifications:

assay (bromometric, referred to dried sample) . . . 99 - 101 %

## Sulfanilic acid

## AC2060 Sulfanilic acid, reagent grade, ACS



- Synonyms: 4-Aminobenzenesulfonic acid, Aniline-4-sulfonic acid, p-Anilinesulfonic acid
- $C_6H_7NO_3S$
- $M = 173,19 \text{ g/mol}$
- CAS [121-57-3]
- EINECS-No.: 204-482-5
- Solub. in water: (20 °C): 10 g/l
- Melting point: 288 °C (decomposes)
- LD 50 (oral, rat): 12300 mg/kg
- EC-Index-No.: 612-014-00-X
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H317
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P362 - P501a
- Tariff number: 2921 42 00 60
- Applications: analytical chemistry, laboratory reagent, for determination of: nitrites, synthesis of organic products, manufacture of dyes, antibacterian.

## Specifications:

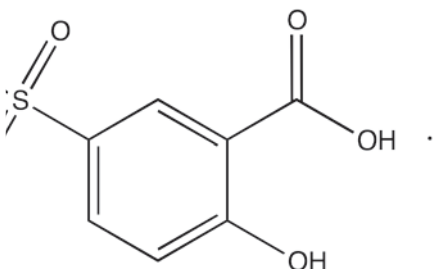
assay (acidimetric) .....98 - 102 %  
 identity (IR-spectrum) .....passes test  
 insoluble in  $Na_2CO_3$  solution .....max. 0,01 %  
 chlorides (Cl) .....max. 0,002 %  
 nitrites ( $NO_2$ ) .....max. 0,00005 %  
 sulfates ( $SO_4$ ) .....max. 0,005 %  
 heavy metals (as Pb) .....max. 0,001 %  
 TLC test .....passes test  
 residue on ignition .....max. 0,01 %  
 water (K.F.) .....max. 0,7 %

Art. No.	Volume	Container
AC20600100	100 g	
AC20600250	250 g	
AC20601000	1 kg	

# Sulfos

## 5-Sulfosalicylic acid dihydrate

### AC2093 5-Sulfosalicylic acid dihydrate, reagent grade, ACS



- Synonyms: 3-Carboxy-4-hydrobenzenesulfonic acid, 2-Hydroxy-5-sulfobenzoic acid, Salicylsulfonic acid
- $C_7H_6O_6S \cdot 2H_2O$
- $M = 254,22 \text{ g/mol}$
- CAS [5965-83-3]
- EINECS-No.: 202-555-6
- Solub. in water: (20 °C): freely soluble
- Melting point: 120 °C
- Flash pt. ~ 150 °C
- LD 50 (oral, rat): 2450 mg/kg (anhydrous substance)
- ADR: 8 C4 III UN 3261
- IMDG: 8 III UN 3261
- IATA/ICAO: 8 III UN 3261
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2918 29 10 90
- Applications: synthesis of organic products, in lubricant compositions, indicator, analytical chemistry.

#### Specifications:

assay (acidimetric) . . . . .	99 - 101 %
identity (IR-spectrum) . . . . .	passes test
insoluble in water . . . . .	max. 0,005 %
chlorides (Cl) . . . . .	max. 0,001 %
sulfates ( $SO_4$ ) . . . . .	max. 0,02 %
copper (Cu) . . . . .	max. 0,0003 %
heavy metals (as Pb) . . . . .	max. 0,002 %
iron (Fe) . . . . .	max. 0,001 %
lead (Pb) . . . . .	max. 0,001 %
nickel (Ni) . . . . .	max. 0,001 %
salicylic acid . . . . .	max. 0,01 %
residue on ignition . . . . .	max. 0,1 %

Art. No.	Volume	Container
AC20930250	250 g	Ⓟ
AC20931000	1 kg	Ⓟ

## Sulfur flower

- S
- $M = 32,06 \text{ g/mol}$
- CAS [7704-34-9]
- EINECS-No.: 231-722-6
- Solub. in water: (20 °C): almost insoluble
- Melting point: 113 - 119 °C
- Boiling point: 444 °C

- Flash pt. 160 °C
- Ignition temp.: 235 °C (dust)
- Vapour pressure: (20 °C) 5000 mg/kg
- ADR: 4.1 F3 III UN 1350
- IMDG: 4.1 III UN 1350
- IATA/ICAO: 4.1 III UN 1350
- GHS-signal word: Warning

- GHS-H sentences: H315
- GHS-P sentences: P280 - P264 - P321 - P362 - P332 + P313 - P302 + P352
- Tariff number: 2802 00 00 00
- Applications: analytical chemistry, laboratory reagent, in the rubber industry, fungicide, for pharmaceuticals synthesizing, in pharma industry.

### AZ0040 Sulfur flower, synthesis grade, washed

assay . . . . .	min 99 %
free acid (as $H_2SO_4$ ) . . . . .	max. 0,5 %
residue on ignition (as $SO_4$ ) . . . . .	max. 0,5 %

Art. No.	Volume	Container
AZ00400500	500 g	Ⓟ
AZ00401000	1 kg	Ⓟ

### AZ0041 Sulfur flower, extra pure, Pharmpur®, Ph Eur, BP

assay . . . . .	99 - 101 %	sulfates ( $SO_4$ ) . . . . .	max. 0,01 %
identification . . . . .	passes test	sulfides . . . . .	passes test
appearance of solution . . . . .	colourless	residue on ignition . . . . .	max. 0,2 %
acidity or alkalinity . . . . .	passes test	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	
odour . . . . .	passes test		
chlorides (Cl) . . . . .	max. 0,01 %		

Art. No.	Volume	Container
AZ00410500	500 g	Ⓟ
AZ00411000	1 kg	Ⓟ
AZ0041025P	25 kg	Ⓟ

## Sulfuric acid, 95 - 97%

- Synonyms: Sulphuric acid
- $H_2SO_4$
- $M = 98,08 \text{ g/mol}$
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,84 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: ~ -15 °C

- Boiling point: ~ 310 °C
- Vapour pressure: (20 °C) ~ 0,0001 hPa
- LD 50 (oral, rat): 2140 mg/kg
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 1830
- IMDG: 8 II UN 1830
- IATA/ICAO: 8 II UN 1830
- GHS-signal word: Danger

- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, acidifying agent, synthesis of organic products, nitrogen determinations.

### AC2065 Sulfuric acid, 95 - 97%, synthesis grade

assay (acidimetric) . . . . .	95 - 97 %
residue on ignition . . . . .	max. 0,01 %

Art. No.	Volume	Container
AC20651000	1 l	Ⓟ
AC20652500	2,5 l	Ⓟ
AC2065005P	5 l	Ⓟ
AC2065025P	25 l	Ⓟ

### AC2066 Sulfuric acid, 95 - 98%, extra pure, Pharmpur®, Ph Eur, BP, NF, packed in HDPE bottles

assay (acidimetric) . . . . .	95 - 98 %	arsenic (As) . . . . .	max. 0,0001 %
identification . . . . .	passes test	heavy metals (as Pb) . . . . .	max. 0,0005 %
pH . . . . .	passes test	iron (Fe) . . . . .	max. 0,0025 %
reaction of sulphates . . . . .	passes test	reducing substances . . . . .	passes test
appearance of solution . . . . .	clear and colourless	residue on ignition . . . . .	max. 0,005 %
density (20°/20°) . . . . .	1,834 - 1,837	Residual solvents are analysed according to guideline CPMP/ICH/283/95. Avoid exposure to light	
chlorides (Cl) . . . . .	max. 0,005 %		
nitrates ( $NO_3$ ) . . . . .	passes test		

Art. No.	Volume	Container
AC20661000	1 l	Ⓟ
AC20662500	2,5 l	Ⓟ
AC2066005P	5 l	Ⓟ
AC2066025P	25 l	Ⓟ

**AC2070 Sulfuric acid, 95 - 98%, extra pure, Pharmpur®, Ph Eur, BP, NF**

assay (acidimetric) . . . . .	95 - 98 %	heavy metals (as Pb) . . . . .	max. 0,0005 %
identification . . . . .	passes test	iron (Fe) . . . . .	max. 0,0025 %
appearance of solution . . . . .	clear and colourless	reducing substances . . . . .	passes test
density (20°/20°) . . . . .	1,834 - 1,837	residue on ignition . . . . .	max. 0,005 %
chlorides (Cl) . . . . .	max. 0,0005 %	Residual solvents are analysed according to guideline CPMP/ICH/283/95. Avoid exposure to light	
nitrates and nitrites (as NO <sub>3</sub> ) . . . . .	max. 0,0002 %		
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,00005 %		
aluminium (Al) . . . . .	max. 0,000005 %		
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,0001 %		
arsenic (As) . . . . .	max. 0,000001 %		
barium (Ba) . . . . .	max. 0,000005 %		
beryllium (Be) . . . . .	max. 0,000001 %		
bismuth (Bi) . . . . .	max. 0,000005 %		
boron (B) . . . . .	max. 0,000005 %		
cadmium (Cd) . . . . .	max. 0,000001 %		
calcium (Ca) . . . . .	max. 0,00001 %		
chromium (Cr) . . . . .	max. 0,000002 %		
cobalt (Co) . . . . .	max. 0,00001 %		

Art. No.	Volume	Container
AC20701000	1 l	0
AC20702500	2,5 l	0

**AC2069 Sulfuric acid, 95 - 97%, reagent grade, ISO**

assay (acidimetric) . . . . .	95 - 97 %	copper (Cu) . . . . .	max. 0,000001 %
colour (Hazen) . . . . .	max. 10	gallium (Ga) . . . . .	max. 0,000005 %
chlorides (Cl) . . . . .	max. 0,00001 %	germanium (Ge) . . . . .	max. 0,000002 %
nitrates and nitrites (as NO <sub>3</sub> ) . . . . .	max. 0,00002 %	gold (Au) . . . . .	max. 0,000005 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,00005 %	indium (In) . . . . .	max. 0,000005 %
aluminium (Al) . . . . .	max. 0,000005 %	iron (Fe) . . . . .	max. 0,00001 %
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,0001 %	lead (Pb) . . . . .	max. 0,000001 %
arsenic (As) . . . . .	max. 0,000001 %	lithium (Li) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000005 %	magnesium (Mg) . . . . .	max. 0,000005 %
beryllium (Be) . . . . .	max. 0,000001 %	manganese (Mn) . . . . .	max. 0,000001 %
bismuth (Bi) . . . . .	max. 0,000005 %	molybdenum (Mo) . . . . .	max. 0,000002 %
boron (B) . . . . .	max. 0,000005 %	nickel (Ni) . . . . .	max. 0,000002 %
cadmium (Cd) . . . . .	max. 0,000001 %	platinum (Pt) . . . . .	max. 0,00001 %
calcium (Ca) . . . . .	max. 0,00001 %	potassium (K) . . . . .	max. 0,00001 %
chromium (Cr) . . . . .	max. 0,000002 %	silver (Ag) . . . . .	max. 0,000001 %
cobalt (Co) . . . . .	max. 0,000001 %	sodium (Na) . . . . .	max. 0,00003 %

strontium (Sr) . . . . .	max. 0,000001 %
thallium (Tl) . . . . .	max. 0,000002 %
tin (Sn) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,000002 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000005 %
zirconium (Zr) . . . . .	max. 0,000002 %
substances reducing KMnO <sub>4</sub> . . . . .	passes test
residue on ignition . . . . .	max. 0,0003 %

Art. No.	Volume	Container
AC20691000	1 l	0
AC20691001	1 l	0
AC20692500	2,5 l	0
AC20692501	2,5 l	0

**AC2071 Sulfuric acid, 96% ± 0,1%, reagent grade**

assay (acidimetric) . . . . .	95,9 - 96,1 %	copper (Cu) . . . . .	max. 0,000001 %
colour (Hazen) . . . . .	max. 10	gallium (Ga) . . . . .	max. 0,000005 %
chlorides (Cl) . . . . .	max. 0,00001 %	germanium (Ge) . . . . .	max. 0,000002 %
nitrates and nitrites (as NO <sub>3</sub> ) . . . . .	max. 0,00002 %	gold (Au) . . . . .	max. 0,000005 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,00005 %	indium (In) . . . . .	max. 0,000005 %
aluminium (Al) . . . . .	max. 0,000005 %	iron (Fe) . . . . .	max. 0,00001 %
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,0001 %	lead (Pb) . . . . .	max. 0,000001 %
arsenic (As) . . . . .	max. 0,000001 %	lithium (Li) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000005 %	magnesium (Mg) . . . . .	max. 0,000005 %
beryllium (Be) . . . . .	max. 0,000002 %	manganese (Mn) . . . . .	max. 0,000001 %
bismuth (Bi) . . . . .	max. 0,000005 %	molybdenum (Mo) . . . . .	max. 0,000002 %
boron (B) . . . . .	max. 0,000005 %	nickel (Ni) . . . . .	max. 0,000002 %
cadmium (Cd) . . . . .	max. 0,000001 %	platinum (Pt) . . . . .	max. 0,00001 %
calcium (Ca) . . . . .	max. 0,00001 %	potassium (K) . . . . .	max. 0,00001 %
chromium (Cr) . . . . .	max. 0,000002 %	silver (Ag) . . . . .	max. 0,000001 %
cobalt (Co) . . . . .	max. 0,000001 %	sodium (Na) . . . . .	max. 0,00003 %

strontium (Sr) . . . . .	max. 0,000001 %
thallium (Tl) . . . . .	max. 0,000002 %
tin (Sn) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,000002 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000005 %
zirconium (Zr) . . . . .	max. 0,000002 %
substances reducing KMnO <sub>4</sub> . . . . .	passes test
residue on ignition . . . . .	max. 0,0003 %

Art. No.	Volume	Container
AC20711000	1 l	0
AC20712500	2,5 l	0

**AC2067 Sulfuric acid, 95 - 97%, reagent grade, ISO, Reag. Ph Eur, packed in HDPE bottles**

assay (acidimetric) . . . . .	95 - 97 %	copper (Cu) . . . . .	max. 0,000001 %
density (20°/20°) . . . . .	1,834 - 1,837	gallium (Ga) . . . . .	max. 0,000005 %
appearance . . . . .	clear and colourless	germanium (Ge) . . . . .	max. 0,000002 %
colour (Hazen) . . . . .	max. 10	gold (Au) . . . . .	max. 0,000005 %
chlorides (Cl) . . . . .	max. 0,00001 %	heavy metals (as Pb) . . . . .	max. 0,0001 %
nitrates and nitrites (as NO <sub>3</sub> ) . . . . .	max. 0,00002 %	indium (In) . . . . .	max. 0,000005 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,00005 %	iron (Fe) . . . . .	max. 0,00001 %
aluminium (Al) . . . . .	max. 0,000005 %	lead (Pb) . . . . .	max. 0,000001 %
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,0001 %	lithium (Li) . . . . .	max. 0,000001 %
arsenic (As) . . . . .	max. 0,000001 %	magnesium (Mg) . . . . .	max. 0,000005 %
barium (Ba) . . . . .	max. 0,000005 %	manganese (Mn) . . . . .	max. 0,000001 %
beryllium (Be) . . . . .	max. 0,000001 %	molybdenum (Mo) . . . . .	max. 0,000002 %
bismuth (Bi) . . . . .	max. 0,000005 %	nickel (Ni) . . . . .	max. 0,000002 %
boron (B) . . . . .	max. 0,000005 %	platinum (Pt) . . . . .	max. 0,00001 %
cadmium (Cd) . . . . .	max. 0,000001 %	potassium (K) . . . . .	max. 0,00001 %
calcium (Ca) . . . . .	max. 0,00001 %	silver (Ag) . . . . .	max. 0,000001 %
chromium (Cr) . . . . .	max. 0,000002 %	sodium (Na) . . . . .	max. 0,00003 %
cobalt (Co) . . . . .	max. 0,000001 %	strontium (Sr) . . . . .	max. 0,000001 %

thallium (Tl) . . . . .	max. 0,000002 %
tin (Sn) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,000002 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000005 %
zirconium (Zr) . . . . .	max. 0,000002 %
substances reducing KMnO <sub>4</sub> . . . . .	passes test
residue on ignition . . . . .	max. 0,0003 %
Avoid exposure to light	

Art. No.	Volume	Container
AC20671000	1 l	0
AC20672500	2,5 l	0
AC2067005P	5 l	0
AC2067025P	25 l	0

**AC2097 Sulfuric acid, 95 - 98%, reagent grade, ACS, ISO, max. 0,0000005% Hg**

assay (acidimetric) . . . . .	95 - 98 %	cobalt (Co) . . . . .	max. 0,000001 %
appearance of solution . . . . .	passes test	copper (Cu) . . . . .	max. 0,000001 %
colour (Hazen) . . . . .	max. 10	germanium (Ge) . . . . .	max. 0,000005 %
chlorides (Cl) . . . . .	max. 0,00001 %	heavy metals (as Pb) . . . . .	max. 0,0001 %
nitrates (NO <sub>3</sub> ) . . . . .	max. 0,00002 %	iron (Fe) . . . . .	max. 0,00001 %
phosphates (as PO <sub>4</sub> ) . . . . .	max. 0,00005 %	lead (Pb) . . . . .	max. 0,000002 %
aluminium (Al) . . . . .	max. 0,000005 %	lithium (Li) . . . . .	max. 0,000001 %
ammonium (NH <sub>4</sub> ) . . . . .	max. 0,0002 %	magnesium (Mg) . . . . .	max. 0,000005 %
arsenic (As) . . . . .	max. 0,000001 %	manganese (Mn) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000005 %	mercury (Hg) . . . . .	max. 0,0000005 %
beryllium (Be) . . . . .	max. 0,000001 %	molybdenum (Mo) . . . . .	max. 0,000005 %
bismuth (Bi) . . . . .	max. 0,00001 %	nickel (Ni) . . . . .	max. 0,000002 %
cadmium (Cd) . . . . .	max. 0,000002 %	potassium (K) . . . . .	max. 0,00001 %
calcium (Ca) . . . . .	max. 0,00002 %	silver (Ag) . . . . .	max. 0,000002 %
chromium (Cr) . . . . .	max. 0,000005 %	sodium (Na) . . . . .	max. 0,00005 %

strontium (Sr) . . . . .	max. 0,000002 %
thallium (Tl) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,00001 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000005 %
zirconium (Zr) . . . . .	max. 0,00001 %
substances reducing KMnO <sub>4</sub> . . . . .	passes test
residue on ignition . . . . .	max. 0,0005 %

Art. No.	Volume	Container
AC20971000	1 l	0
AC20972500	2,5 l	0

# Sulfur

## AC2114 Sulfuric acid, 96%, ppb-trace analysis grade, Ultratrace®

assay (acidimetric) . . . . .	.93 - 98 %	gallium (Ga) . . . . .	max. 0,1 ppb	selenium (Se) . . . . .	max. 10 ppb
colour (Hazen) . . . . .	max. 10	germanium (Ge) . . . . .	max. 1 ppb	silver (Ag) . . . . .	max. 1 ppb
chlorides (Cl) . . . . .	max. 0,00007 %	hafnium (Hf) . . . . .	max. 0,1 ppb	sodium (Na) . . . . .	max. 1 ppb
nitrate (NO <sub>3</sub> ) . . . . .	max. 0,00002 %	holmium (Ho) . . . . .	max. 0,1 ppb	strontium (Sr) . . . . .	max. 0,5 ppb
total phosphorus (P) . . . . .	max. 0,000005 %	indium (In) . . . . .	max. 0,1 ppb	tellurium (Te) . . . . .	max. 0,1 ppb
substances reducing KMnO <sub>4</sub> . . . . .	passes test	iron (Fe) . . . . .	max. 1 ppb	terbium (Tb) . . . . .	max. 0,1 ppb
aluminium (Al) . . . . .	max. 1 ppb	lanthanum (La) . . . . .	max. 0,1 ppb	thallium (Tl) . . . . .	max. 0,1 ppb
antimony (Sb) . . . . .	max. 1 ppb	lead (Pb) . . . . .	max. 0,1 ppb	thorium (Th) . . . . .	max. 0,1 ppb
arsenic (As) . . . . .	max. 0,5 ppb	lithium (Li) . . . . .	max. 0,5 ppb	thulium (Tm) . . . . .	max. 0,1 ppb
barium (Ba) . . . . .	max. 0,1 ppb	lutetium (Lu) . . . . .	max. 0,1 ppb	tin (Sn) . . . . .	max. 1 ppb
beryllium (Be) . . . . .	max. 0,1 ppb	magnesium (Mg) . . . . .	max. 1 ppb	titanium (Ti) . . . . .	max. 1 ppb
bismuth (Bi) . . . . .	max. 0,1 ppb	manganese (Mn) . . . . .	max. 0,5 ppb	tungsten (W) . . . . .	max. 0,5 ppb
cadmium (Cd) . . . . .	max. 0,5 ppb	mercury (Hg) . . . . .	max. 0,1 ppb	uranium (U) . . . . .	max. 0,1 ppb
calcium (Ca) . . . . .	max. 1 ppb	molybdenum (Mo) . . . . .	max. 0,5 ppb	vanadium (V) . . . . .	max. 0,5 ppb
cerium (Ce) . . . . .	max. 0,1 ppb	neodymium (Nd) . . . . .	max. 0,1 ppb	ytterbium (Yb) . . . . .	max. 0,1 ppb
cesium (Cs) . . . . .	max. 0,1 ppb	nickel (Ni) . . . . .	max. 0,5 ppb	yttrium (Y) . . . . .	max. 0,1 ppb
chromium (Cr) . . . . .	max. 0,5 ppb	niobium (Nb) . . . . .	max. 0,1 ppb	zinc (Zn) . . . . .	max. 1 ppb
cobalt (Co) . . . . .	max. 0,5 ppb	potassium (K) . . . . .	max. 1 ppb	zirconium (Zr) . . . . .	max. 0,5 ppb
copper (Cu) . . . . .	max. 0,5 ppb	praseodymium (Pr) . . . . .	max. 0,1 ppb		
dysprosium (Dy) . . . . .	max. 0,1 ppb	rhodium (Rh) . . . . .	max. 0,5 ppb		
erbium (Er) . . . . .	max. 0,1 ppb	rubidium (Rb) . . . . .	max. 0,5 ppb		
europium (Eu) . . . . .	max. 0,1 ppb	samarium (Sm) . . . . .	max. 0,1 ppb		
gadolinium (Gd) . . . . .	max. 0,1 ppb	scandium (Sc) . . . . .	max. 0,1 ppb		

Art. No.	Volume	Container
AC21141000	1 l	Ⓟ

## AC2115 Sulfuric acid, 96%, ppt-trace analysis grade, Ultratrace®

assay (acidimetric) . . . . .	.93 - 98 %	indium (In) . . . . .	max. 10 ppt	strontium (Sr) . . . . .	max. 10 ppt
aluminium (Al) . . . . .	max. 50 ppt	iron (Fe) . . . . .	max. 50 ppt	tellurium (Te) . . . . .	max. 50 ppt
antimony (Sb) . . . . .	max. 50 ppt	lanthanum (La) . . . . .	max. 10 ppt	terbium (Tb) . . . . .	max. 10 ppt
arsenic (As) . . . . .	max. 500 ppt	lead (Pb) . . . . .	max. 10 ppt	thallium (Tl) . . . . .	max. 10 ppt
barium (Ba) . . . . .	max. 10 ppt	lithium (Li) . . . . .	max. 10 ppt	thorium (Th) . . . . .	max. 10 ppt
beryllium (Be) . . . . .	max. 10 ppt	lutetium (Lu) . . . . .	max. 10 ppt	thulium (Tm) . . . . .	max. 10 ppt
bismuth (Bi) . . . . .	max. 10 ppt	magnesium (Mg) . . . . .	max. 50 ppt	tin (Sn) . . . . .	max. 50 ppt
cadmium (Cd) . . . . .	max. 10 ppt	manganese (Mn) . . . . .	max. 10 ppt	titanium (Ti) . . . . .	max. 50 ppt
calcium (Ca) . . . . .	max. 50 ppt	mercury (Hg) . . . . .	max. 100 ppt	tungsten (W) . . . . .	max. 10 ppt
cerium (Ce) . . . . .	max. 10 ppt	molybdenum (Mo) . . . . .	max. 10 ppt	uranium (U) . . . . .	max. 10 ppt
cesium (Cs) . . . . .	max. 10 ppt	neodymium (Nd) . . . . .	max. 10 ppt	vanadium (V) . . . . .	max. 10 ppt
chromium (Cr) . . . . .	max. 10 ppt	nickel (Ni) . . . . .	max. 50 ppt	ytterbium (Yb) . . . . .	max. 10 ppt
cobalt (Co) . . . . .	max. 10 ppt	niobium (Nb) . . . . .	max. 10 ppt	yttrium (Y) . . . . .	max. 10 ppt
copper (Cu) . . . . .	max. 10 ppt	potassium (K) . . . . .	max. 50 ppt	zinc (Zn) . . . . .	max. 50 ppt
dysprosium (Dy) . . . . .	max. 10 ppt	praseodymium (Pr) . . . . .	max. 10 ppt	zirconium (Zr) . . . . .	max. 10 ppt
erbium (Er) . . . . .	max. 10 ppt	rhodium (Rh) . . . . .	max. 50 ppt		
europium (Eu) . . . . .	max. 10 ppt	rubidium (Rb) . . . . .	max. 10 ppt		
gadolinium (Gd) . . . . .	max. 10 ppt	samarium (Sm) . . . . .	max. 10 ppt		
gallium (Ga) . . . . .	max. 10 ppt	scandium (Sc) . . . . .	max. 10 ppt		
germanium (Ge) . . . . .	max. 100 ppt	selenium (Se) . . . . .	max. 500 ppt		
hafnium (Hf) . . . . .	max. 10 ppt	silver (Ag) . . . . .	max. 50 ppt		
holmium (Ho) . . . . .	max. 10 ppt	sodium (Na) . . . . .	max. 50 ppt		

Art. No.	Volume	Container
AC21150250	250 ml	Ⓟ
AC21150500	500 ml	Ⓟ

## Sulfuric acid, 90 - 91%

### AC2064 Sulfuric acid, solution 90 - 91% w/w, for Gerber fat determination and testing nitrates in milk

- Synonyms: Sulphuric acid
- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,81 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: ~ 300 °C
- Vapour pressure: (20 °C) ~ 0,0001 hPa
- LD 50 (oral, rat): 2140 mg/kg (pure substance)
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 1830
- IMDG: 8 II UN 1830

- IATA/ICAO: 8 II UN 1830
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, for determination of: fats and nitrates in milk.

- Specifications:**
- assay (acidimetric) . . . . .
  - density (15°/4°) . . . . .
  - nitrate (NO<sub>3</sub>) . . . . .

suitability for determination of fat in milk . . . . . passes test  
Avoid exposure to light

Art. No.	Volume	Container
AC20641000	1 l	Ⓟ
AC20642500	2,5 l	Ⓟ
AC2064005P	5 l	Ⓟ
AC2064025P	25 l	Ⓟ

## Sulfuric acid, 62%

### AC2092 Sulfuric acid, solution 62% w/w, according to Röder and Van Gulik, for determination of fat in milk

- Synonyms: Sulphuric acid
- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,52 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 2140 mg/kg
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 1830

- IMDG: 8 II UN 1830
- IATA/ICAO: 8 II UN 1830
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, acidifying agent, for determination of: fats in milk.

**Specifications:**

- assay (acidimetric) . . . . . min. 62 %
- suitability for determination of fat in milk . . . . . passes test

Art. No.	Volume	Container
AC20921000	1 l	Ⓟ
AC20922500	2,5 l	Ⓟ

## Sulfuric acid, 50%

## AC2079 Sulfuric acid, solution 50% w/v, reagent grade

- Synonyms: Sulphuric acid
- $H_2SO_4$
- $M = 98,08 \text{ g/mol}$
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density:  $1,28 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, neutralising agent.

## Specifications:

assay (acidimetric) . . . . .	min. 50 %
colour (Hazen) . . . . .	max. 10
chlorides (Cl) . . . . .	max. 0,00001 %
nitrates ( $NO_3$ ) . . . . .	max. 0,00002 %
phosphates (as $PO_4$ ) . . . . .	max. 0,00005 %
aluminium (Al) . . . . .	max. 0,000005 %
ammonium ( $NH_4$ ) . . . . .	max. 0,0002 %
arsenic (As) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000005 %
beryllium (Be) . . . . .	max. 0,000001 %
bismuth (Bi) . . . . .	max. 0,000005 %
cadmium (Cd) . . . . .	max. 0,000002 %
calcium (Ca) . . . . .	max. 0,00002 %
cobalt (Co) . . . . .	max. 0,000001 %
copper (Cu) . . . . .	max. 0,000001 %
germanium (Ge) . . . . .	max. 0,000005 %
iron (Fe) . . . . .	max. 0,00001 %
lead (Pb) . . . . .	max. 0,000002 %
lithium (Li) . . . . .	max. 0,000001 %

magnesium (Mg) . . . . .	max. 0,000005 %
manganese (Mn) . . . . .	max. 0,000001 %
molybdenum (Mo) . . . . .	max. 0,000005 %
nickel (Ni) . . . . .	max. 0,000002 %
potassium (K) . . . . .	max. 0,00001 %
silver (Ag) . . . . .	max. 0,000002 %
sodium (Na) . . . . .	max. 0,000005 %
strontium (Sr) . . . . .	max. 0,000002 %
thallium (Tl) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,00001 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000005 %
zirconium (Zr) . . . . .	max. 0,00001 %
substances reducing $KMnO_4$ . . . . .	passes test residue on ignition . . . . .
	max. 0,0005 %

Art. No.	Volume	Container
AC20791000	1 l	

## Sulfuric acid, solution 1/3 w/v

## AC2074 Sulfuric acid, solution 1/3 w/v

- Synonyms: Sulphuric acid
- $H_2SO_4$
- $M = 98,08 \text{ g/mol}$
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density:  $\sim 1,2 \text{ g/cm}^3$
- Boiling point:  $\sim 135 \text{ °C}$
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796

- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, neutralising agent.

## Specifications:

assay (acidimetric) . . . . . approx. 33,3 %  
Acid liquor for determination of sulphurous gas ( $SO_2$ ) in wines

Art. No.	Volume	Container
AC20740500	500 ml	
AC20741000	1 l	

## Sulfuric acid, 25%

## AC2078 Sulfuric acid, solution 25% w/w, reagent grade

- $H_2SO_4$
- $M = 98,08 \text{ g/mol}$
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density:  $1,18 \text{ g/cm}^3$
- Solub. in water: (20 °C): miscible
- Boiling point:  $\sim 103 \text{ °C}$
- LD 50 (oral, rat): 2140 mg/kg
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, neutralising agent, for determination of: barium.

## Specifications:

assay (acidimetric) . . . . .	min. 25 %
colour (Hazen) . . . . .	max. 10
chlorides (Cl) . . . . .	max. 0,00005 %
nitrates ( $NO_3$ ) . . . . .	max. 0,00002 %
aluminium (Al) . . . . .	max. 0,000005 %
ammonium ( $NH_4$ ) . . . . .	max. 0,0002 %
arsenic (As) . . . . .	max. 0,000001 %
barium (Ba) . . . . .	max. 0,000005 %
beryllium (Be) . . . . .	max. 0,000001 %
bismuth (Bi) . . . . .	max. 0,00001 %
cadmium (Cd) . . . . .	max. 0,000002 %
calcium (Ca) . . . . .	max. 0,00002 %
chromium (Cr) . . . . .	max. 0,000005 %
cobalt (Co) . . . . .	max. 0,000001 %
copper (Cu) . . . . .	max. 0,000001 %
germanium (Ge) . . . . .	max. 0,000005 %
iron (Fe) . . . . .	max. 0,00001 %
lead (Pb) . . . . .	max. 0,000002 %
lithium (Li) . . . . .	max. 0,000001 %

magnesium (Mg) . . . . .	max. 0,000005 %
manganese (Mn) . . . . .	max. 0,000001 %
molybdenum (Mo) . . . . .	max. 0,000005 %
nickel (Ni) . . . . .	max. 0,000002 %
potassium (K) . . . . .	max. 0,00001 %
silver (Ag) . . . . .	max. 0,000002 %
sodium (Na) . . . . .	max. 0,000005 %
strontium (Sr) . . . . .	max. 0,000001 %
thallium (Tl) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,00001 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,00001 %
zirconium (Zr) . . . . .	max. 0,00001 %
substances reducing $KMnO_4$ . . . . .	passes test residue on ignition . . . . .
	max. 0,0005 %

Art. No.	Volume	Container
AC20781000	1 l	

## Sulfuric acid, solution 16% w/v

## AC2109 Sulfuric acid, solution 16% w/v, reagent grade

- Synonyms: Sulphuric acid
- $H_2SO_4$
- $M = 98,08 \text{ g/mol}$
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density:
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2807 00 00 00

chlorides (Cl) . . . . .	max. 0,00001 %
nitrates ( $NO_3$ ) . . . . .	max. 0,00002 %
phosphates (as $PO_4$ ) . . . . .	max. 0,00005 %
aluminium (Al) . . . . .	max. 0,000005 %
ammonium ( $NH_4$ ) . . . . .	max. 0,0002 %
arsenic (As) . . . . .	max. 0,000005 %
barium (Ba) . . . . .	max. 0,000005 %
beryllium (Be) . . . . .	max. 0,000001 %
bismuth (Bi) . . . . .	max. 0,000005 %
cadmium (Cd) . . . . .	max. 0,000002 %
calcium (Ca) . . . . .	max. 0,00002 %
cobalt (Co) . . . . .	max. 0,000001 %
copper (Cu) . . . . .	max. 0,000001 %
germanium (Ge) . . . . .	max. 0,000005 %
iron (Fe) . . . . .	max. 0,00001 %
lead (Pb) . . . . .	max. 0,000002 %
lithium (Li) . . . . .	max. 0,000001 %
magnesium (Mg) . . . . .	max. 0,000005 %
manganese (Mn) . . . . .	max. 0,000001 %

molybdenum (Mo) . . . . .	max. 0,000001 %
nickel (Ni) . . . . .	max. 0,000002 %
potassium (K) . . . . .	max. 0,00001 %
silver (Ag) . . . . .	max. 0,000002 %
sodium (Na) . . . . .	max. 0,000005 %
strontium (Sr) . . . . .	max. 0,000002 %
thallium (Tl) . . . . .	max. 0,000005 %
titanium (Ti) . . . . .	max. 0,00001 %
vanadium (V) . . . . .	max. 0,000001 %
zinc (Zn) . . . . .	max. 0,000005 %
zirconium (Zr) . . . . .	max. 0,00001 %
substances reducing $KMnO_4$ . . . . .	passes test residue on ignition . . . . .
	max. 0,0005 %

Art. No.	Volume	Container
AC21091000	1 l	

# Sulfur

## Sulfuric acid, 10%

### AC2068 Sulfuric acid, solution 10% w/v, extra pure



- Synonyms: Sulphuric acid
- $H_2SO_4$
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,06 g/cm<sup>3</sup>
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, neutralising agent.

- Specifications:**
- assay (acidimetric) . . . . . approx. 10 %
  - colour (Hazen) . . . . . max. 10
  - chlorides (Cl) . . . . . max. 0,00001 %
  - nitrates (NO<sub>3</sub>) . . . . . max. 0,00002 %
  - phosphates (as PO<sub>4</sub>) . . . . . max. 0,00005 %
  - aluminium (Al) . . . . . max. 0,000005 %
  - ammonium (NH<sub>4</sub>) . . . . . max. 0,0002 %
  - arsenic (As) . . . . . max. 0,000001 %
  - barium (Ba) . . . . . max. 0,000005 %
  - cadmium (Cd) . . . . . max. 0,000002 %
  - calcium (Ca) . . . . . max. 0,00002 %
  - chromium (Cr) . . . . . max. 0,000005 %
  - copper (Cu) . . . . . max. 0,000001 %
  - iron (Fe) . . . . . max. 0,00001 %
  - lead (Pb) . . . . . max. 0,000002 %
  - lithium (Li) . . . . . max. 0,000001 %

- magnesium (Mg) . . . . . max. 0,000005 %
- manganese (Mn) . . . . . max. 0,000001 %
- nickel (Ni) . . . . . max. 0,000002 %
- potassium (K) . . . . . max. 0,00001 %
- silver (Ag) . . . . . max. 0,000002 %
- sodium (Na) . . . . . max. 0,00005 %
- zinc (Zn) . . . . . max. 0,000005 %
- substances reducing KMnO<sub>4</sub> . . . . . passes test
- residue on ignition . . . . . max. 0,0005 %

Art. No.	Volume	Container
AC20681000	1 l	Ⓢ

## Sulfuric acid, volumetric solutions

### AC2089 Sulfuric acid, solution 5 mol/l (10 N)



- $H_2SO_4$
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,28 g/cm<sup>3</sup>
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, neutralising agent.

- Specifications:**
- factor . . . . . 0,999 - 1,001
  - uncertainty ± 0,001

1 ml = 0,4904 g  $H_2SO_4$  This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20891000	1 l	Ⓢ
AC20892500	2,5 l	Ⓢ

### AC2075 Sulfuric acid, solution 4 mol/l (8 N), for COD determination, according to ISO 6060



- $H_2SO_4$
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: ~ 1,023 g/cm<sup>3</sup>
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-signal word: Danger
- GHS-H sentences: H314

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, neutralising agent.

- Specifications:**
- factor . . . . . 0,999 - 1,001
  - uncertainty ± 0,001

1 ml = 0,39232 g  $H_2SO_4$  This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20751000	1 l	Ⓢ

### AC2086 Sulfuric acid, solution 2,5 mol/l (5 N)



- $H_2SO_4$
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,15 g/cm<sup>3</sup>
- Boiling point: ~ 103 °C
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-signal word: Danger

- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, neutralising agent.

- Specifications:**
- factor . . . . . 0,999 - 1,001
  - uncertainty ± 0,001

1 ml = 0,2452 g  $H_2SO_4$  This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20861000	1 l	Ⓢ

### AC2085 Sulfuric acid, solution 1 mol/l (2 N)



- $H_2SO_4$
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,06 g/cm<sup>3</sup>
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319

- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, neutralising agent.

- Specifications:**
- factor . . . . . 0,999 - 1,001
  - uncertainty ± 0,001

1 ml = 0,09808 g  $H_2SO_4$  This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20851000	1 l	Ⓢ

**AC2080 Sulfuric acid, solution 0,5 mol/l (1 N)**

- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,02 g/cm<sup>3</sup>
- LD 50 (oral, rat): 2140 mg/kg (pure substance)
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-H sentences: EUH210
- Tariff number: 2807 00 00 00

- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,04904 g H<sub>2</sub>SO<sub>4</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20801000	1 l	
AC2080005P	5 l	
AC2080010C	10 l	
AC2080025P	25 l	

**AC2081 Sulfuric acid, solution 0,25 mol/l (0,5 N)**

- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,01 g/cm<sup>3</sup>
- LD 50 (oral, rat): 2140 mg/kg (pure substance)
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-H sentences: EUH210
- Tariff number: 2807 00 00 00

- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001

1 ml = 0,02452 g H<sub>2</sub>SO<sub>4</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20811000	1 l	
AC2081010C	10 l	

**AC2084 Sulfuric acid, solution 0,13 mol/l (0,26 N)**

- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-H sentences: EUH210
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,0127504 g H<sub>2</sub>SO<sub>4</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20841000	1 l	
AC2084005P	5 l	
AC2084010C	10 l	

**AC2106 Sulfuric acid, solution 0,1275 mol/l (0,255 N)**

- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-H sentences: EUH210
- Tariff number: 2807 00 00 00

- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,012505 g H<sub>2</sub>SO<sub>4</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC2106005P	5 l	
AC2106010C	10 l	

**AC2088 Sulfuric acid, solution 0,125 mol/l (0,25 N)**

- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-H sentences: EUH210
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**

factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,01226 g H<sub>2</sub>SO<sub>4</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20881000	1 l	
AC2088005P	5 l	
AC2088010C	10 l	

# Sulfur

## AC2087 Sulfuric acid, solution 0,1 mol/l (0,2 N)

- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: ~ 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 016-020-00-8
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,009808 g H<sub>2</sub>SO<sub>4</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20871000	1 l	
AC2087010C	10 l	

## AC2082 Sulfuric acid, solution 0,05 mol/l (0,1 N)

- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: ~ 1,00 g/cm<sup>3</sup>
- LD 50 (oral, rat): 2140 mg/kg (pure substance)
- EC-Index-No.: 016-020-00-8
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,004904 g H<sub>2</sub>SO<sub>4</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20821000	1 l	
AC2082005P	5 l	
AC2082010C	10 l	

## AC2076 Sulfuric acid, solution 0,025 mol/l (0,05 N)

- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 016-020-00-8
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,002452 g H<sub>2</sub>SO<sub>4</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20761000	1 l	

## AC2083 Sulfuric acid, solution 0,01 mol/l (0,02 N)

- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 016-020-00-8
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**  
 factor . . . . . 0,999 - 1,001  
 uncertainty ± 0,001  
 1 ml = 0,0009808 g H<sub>2</sub>SO<sub>4</sub> This volumetric solution was checked by means of potentiometric methods using Scharlau's tris(hydroxymethyl)- aminomethane volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
AC20831000	1 l	

## AC2073 Sulfuric acid, concentrated solution to prepare 1 l of solution 0,5 mol/l (1 N)

- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,29 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Boiling point: ~ 135°C
- LD 50 (oral, rat): 2140 mg/kg
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796

- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, titrant in volumetric analysis.

**Specifications:**  
 amount of substance: 49,040 g H<sub>2</sub>SO<sub>4</sub>  
 concentrated solution . . . . . 2,5 mol/l ± 0,1 %

Art. No.	Volume	Container
AC207300PA	u.	

## AC2072 Sulfuric acid, concentrated solution to prepare 1 l of solution 0,05 mol/l (0,1 N)

- H<sub>2</sub>SO<sub>4</sub>
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,06 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 2140 mg/kg
- EC-Index-No.: 016-020-00-8

- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-H sentences: EUH210
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

**Specifications:**  
 amount of substance: 4,904 g H<sub>2</sub>SO<sub>4</sub>  
 concentrated solution . . . . . 0,5 mol/l ± 0,1 %

Art. No.	Volume	Container
AC207200PA	u.	



## TAE 10X buffer pH = 8,3

## TA0010 TAE 10X buffer pH = 8,3, molecular biology grade

- Synonyms: TRIS-Acetate-EDTA
- Density: 1,016 g/cm<sup>3</sup>
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for electrophoresis, for determination of: nucleic acids.

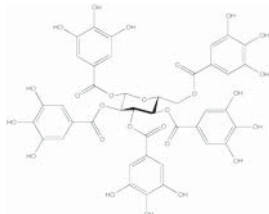
**Specifications:**

pH ..... 8,2 - 8,4  
 composition: tris(hydroxymethyl)-aminomethane  
 0,40 M / EDTA 0,01 M / acetic acid 0,20 M  
 DNases, RNases, Proteases ..... non detected

Art. No.	Volume	Container
TA00101000	1 l	
TA0010010C	10 l	

## Tannic acid

## AC2090 Tannic acid, synthesis grade



- Synonyms: Tannin
- C<sub>76</sub>H<sub>52</sub>O<sub>46</sub>
- M = 1701,22 g/mol
- CAS [1401-55-4]
- EINECS-No.: 215-753-2
- Solub. in water: (20 °C): 250 g/l
- Tariff number: 3201 90 90 80
- Applications: laboratory reagent, synthesis of organic products, chromatography (absorbent for: proteins).

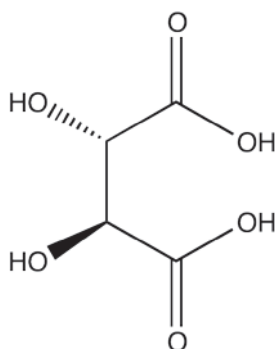
**Specifications:**

arsenic (As) .....max. 0,0003 %  
 heavy metals (as Pb) .....max. 0,003 %  
 residue on ignition .....max. 0,1 %  
 loss on drying .....max. 12 %

Art. No.	Volume	Container
AC20900250	250 g	
AC20901000	1 kg	

## L(+)-Tartaric acid

## AC3001 L(+) -Tartaric acid, reagent grade, ACS, ISO



- Synonyms: 2,3-Dihydroxybutanedioic acid
- C<sub>4</sub>H<sub>6</sub>O<sub>6</sub>
- M = 150,09 g/mol
- CAS [87-69-4]
- EINECS-No.: 201-766-0
- Solub. in water: (20 °C): soluble
- Melting point: 170 °C
- Ignition temp.: 425 °C
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 2918 12 00 00
- Applications: in food industry, acidifying agent, photography, cosmetics, in porcelain industry, in the textile industry, in buffer solutions (for pharmaceuticals synthesizing).

**Specifications:**

assay (acidimetric) ..... min. 99,5 %  
 identity (IR-spectrum) .....passes test  
 appearance of solution .....passes test  
 insoluble in water .....max. 0,005 %  
 specific rotation ([α]<sub>D</sub><sup>20</sup>; c = 20, H<sub>2</sub>O) ..... + 12,0° - + 12,8°

chlorides (Cl) .....max. 0,001 %  
 phosphates (as PO<sub>4</sub>) .....max. 0,001 %  
 sulfates (SO<sub>4</sub>) .....max. 0,005 %  
 arsenic (As) .....max. 0,00002 %  
 calcium (Ca) .....max. 0,002 %  
 copper (Cu) .....max. 0,0005 %  
 heavy metals (as Pb) .....max. 0,0005 %  
 iron (Fe) .....max. 0,0005 %  
 lead (Pb) .....max. 0,0005 %  
 magnesium (Mg) .....max. 0,002 %  
 nickel (Ni) .....max. 0,0001 %  
 oxalic acid (C<sub>2</sub>H<sub>2</sub>O<sub>4</sub>) .....max. 0,035 %  
 sulphur compounds (as SO<sub>4</sub>) .....max. 0,002 %  
 residue on ignition .....max. 0,01 %  
 loss on drying (105 °C) .....max. 0,2 %

Art. No.	Volume	Container
AC30010500	500 g	
AC30011000	1 kg	
AC3001005P	5 kg	
AC3001025P	25 kg	

## TBE 5X buffer pH = 8,3

## TB0010 TBE 5X buffer pH = 8,3, molecular biology grade

- Synonyms: TRIS-Borate-EDTA
- Density: 1,03 g/cm<sup>3</sup>
- GHS-H sentences: EUH210
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, in buffer solutions, for electrophoresis, for determination of: nucleic acids.

**Specifications:**

pH ..... 8,2 - 8,4  
 composition: tris(hydroxymethyl)-aminomethane  
 0,45 M / EDTA 0,01 M / boric acid 0,45 M  
 DNases, RNases ..... non detected

Art. No.	Volume	Container
TB00101000	1 l	
TB0010010C	10 l	

## T.B.N. Mixtures

- Density: 1,08 g/cm<sup>3</sup>
- ADR: 8 C3 II UN 3265
- IMDG: 8 II UN 3265
- IATA/ICAO: 8 II UN 3265

- GHS-signal word: Danger
- GHS-H sentences: H314 - H332 - H411 - EUH209A
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a -

- Tariff number: 3814 00 90 90
- Applications: analytical chemistry, in the petroleum industry.

## ME0513 Mixture T.B.N. : chlorobenzene/acetic acid, 2:1 v/v, according to ASTM D974, extra pure

mixture according to:  
 chlorobenzene ..... 667 ml  
 acetic acid (CH<sub>3</sub>COOH) ..... 333 ml  
 sulfates (SO<sub>4</sub>) .....max. 0,0005 %  
 iron (Fe) .....max. 0,00005 %  
 lead (Pb) .....max. 0,00005 %  
 nickel (Ni) .....max. 0,00002 %  
 zinc (Zn) .....max. 0,0005 %

water (K.F.) .....max. 0,5 %

Art. No.	Volume	Container
ME05131000	1 l	
ME05132500	2,5 l	
ME0513007E	7 l	
ME0513025A	25 l	
ME0513025P	25 l	

# Tbnmix

## ME0515 Mixture T.B.N. : chlorobenzene/acetic acid, 2:1 v/v, according to ASTM D2896, reagent grade

mixture according to:

chlorobenzene	667 ml
acetic acid (CH <sub>3</sub> COOH)	333 ml
sulfates (SO <sub>4</sub> )	max. 0,0002 %
iron (Fe)	max. 0,00002 %

lead (Pb)	max. 0,00002 %
nickel (Ni)	max. 0,00001 %
zinc (Zn)	max. 0,0002 %
water (K.F.)	max. 0,3 %

Art. No.	Volume	Container
ME05151000	1 l	
ME05152500	2,5 l	
ME0515007E	7 l	

## ME0516 Mixture T.B.N., according to ASTM D4739

- Density: 1,04 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. < 17°C
- ADR: 3 FT1 II UN 1992
- IMDG: 3 II UN 1992
- IATA/ICAO: 3 II UN 1992
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H351 - H361d - H373 - H302 - H315 - H319 - H336 -

- GHS-P sentences: P210 - P301 + P310 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 3814 00 90 90

toluene	333,3 ml
chloroform	333,3 ml

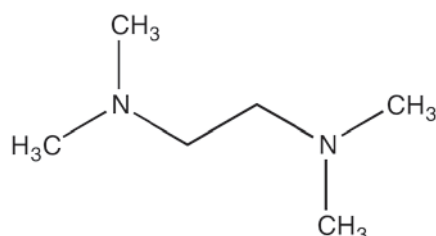
### Specifications:

mixture according to:	
water	10 ml
isopropyl alcohol	333,3 ml

Art. No.	Volume	Container
ME0516025P	25 l	

## TEMED

### TE0050 TEMED, reagent grade



- Synonyms: N,N,N',N'-Tetramethylethylenediamine, 1,2-Bis(dimethylamino)ethane, TMEDA
- C<sub>6</sub>H<sub>16</sub>N<sub>2</sub>
- M = 116,21 g/mol
- CAS [110-18-9]
- EINECS-No.: 203-744-6
- Density: 0,78 g/cm<sup>3</sup>
- Solub. in water: (20 °C): freely miscible
- Melting point: -55 °C
- Boiling point: 121 °C
- Flash pt. 17 °C
- Refraction index: (n 20 °C/D) 1,4179
- LD 50 (oral, rat): 268 mg/kg
- EC-Index-No.: 612-103-00-3
- ADR: 3 F1 II UN 2372
- IMDG: 3 II UN 2372
- IATA/ICAO: 3 II UN 2372
- GHS-signal word: Danger
- GHS-H sentences: H225 - H314 - H302 - H332

- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2921 29 00 90
- Applications: analytical chemistry, synthesis of polymers.
- Appearance: Clear liquid

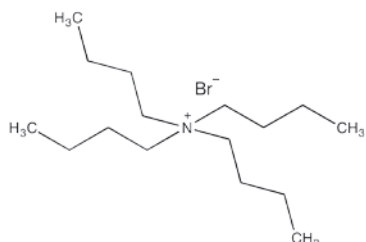
### Specifications:

assay (G.C.)	min. 99 %
identity (IR-spectrum)	passes test
iron (Fe)	max. 0,00001 %
residue on ignition	max. 0,005 %
water (K.F.)	max. 0,5 %

Art. No.	Volume	Container
TE00500010	10 ml	
TE00500100	100 ml	

## Tetrabutylammonium bromide

### BR0200 Tetrabutylammonium bromide, HPLC grade



- Synonyms: TBAB, Tetra-n-butylammonium bromide
- C<sub>16</sub>H<sub>36</sub>BrN
- M = 322,38 g/mol
- CAS [1643-19-2]
- EINECS-No.: 216-699-2
- Solub. in water: (20 °C): 600 g/l
- Melting point: 100 - 103 °C
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2923 90 00 90
- Applications: analytical chemistry, laboratory reagent, chromatography, synthesis of organic products, phase transfer catalyst.

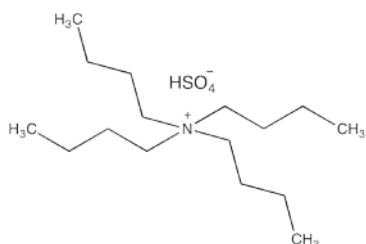
### Specifications:

assay (argentometric)	min. 99 %
identity (IR-spectrum)	passes test
insoluble matter	passes test
max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength:	absorbance:
240 nm	0,04 AU
250 nm	0,03 AU
260 nm	0,02 AU

Art. No.	Volume	Container
BR02000025	25 g	

## Tetrabutylammonium hydrogen sulfate

### TE0120 Tetrabutylammonium hydrogen sulfate, for ion-pair chromatography



- C<sub>16</sub>H<sub>37</sub>NO<sub>4</sub>S
- M = 339,54 g/mol
- CAS [32503-27-8]
- EINECS-No.: 251-068-5
- Solub. in water: (20 °C): freely soluble
- Melting point: 169 - 172 °C
- GHS-signal word: Warning
- GHS-H sentences: H302 - H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P301 + P312 - P337 + P313 - P501a
- Tariff number: 2923 90 00 90
- Applications: analytical chemistry, chromatography, synthesis of organic products, phase transfer catalyst.

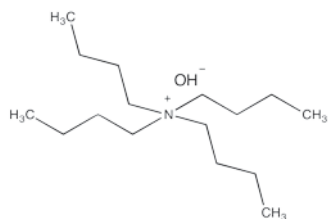
### Specifications:

assay (acidimetric)	min. 99 %
insoluble matter	passes test
identity (IR-spectrum)	passes test
max. absorbance of an aqueous sol. 0,005 M in a 1 cm cell at wavelength:	absorbance:
200 nm	0,155 AU
220 nm	0,046 AU
250 nm	0,009 AU

Art. No.	Volume	Container
TE01200010	10 g	
TE01200100	100 g	

## Tetrabutylammonium hydroxide, solution 0,1 mol/l, buffered with phosphates

## TE0115 Tetrabutylammonium hydroxide, solution 0,1 mol/l, buffered with phosphates, HPLC grade



- $C_{16}H_{37}NO$
- $M = 259,48$  g/mol
- CAS [2052-49-5]
- EINECS-No.: 218-147-6
- Density: (25 °C) 1,005 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2923 90 00 90

- Applications: analytical chemistry, chromatography.

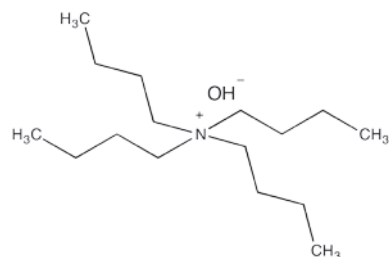
**Specifications:**

pH (20 °C) ..... 7,4 - 7,6  
 absorbance of a 0,005 M solution  
 in a 1 cm cell at 254 nm ..... max. 0,02 AU

Art. No.	Volume	Container
TE01150250	250 ml	0
TE01151000	1 l	0

## Tetrabutylammonium hydroxide, volumetric sols. in alcoholic medium

## TE0116 Tetrabutylammonium hydroxide, solution 0,1 mol/l, in 2-propanol/methanol



- $C_{16}H_{37}NO$
- $M = 259,48$  g/mol
- CAS [2052-49-5]
- EINECS-No.: 218-147-6
- Density: 0,79 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Flash pt. 12 °C
- ADR: 3 FTC II UN 3286
- IMDG: 3 II UN 3286
- IATA/ICAO: 3 II UN 3286
- GHS-signal word: Danger
- GHS-H sentences: H225 - H314 - H371 - H336
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, titrant in volumetric analysis, for non-aqueous titrations.

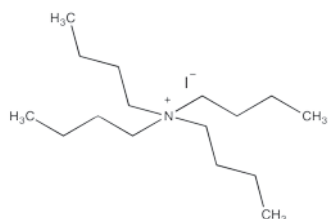
**Specifications:**

factor ..... 0,999 - 1,001  
 uncertainty  $\pm$  0,001  
 sulfates (SO<sub>4</sub>) ..... max. 0,05 %  
 halides (as bromide) ..... max. 0,05 %  
 2-propanol:methanol 10:1 (v/v) This volumetric solution was checked by means of potentiometric methods using Scharlau's benzoic acid volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
TE01161000	1 l	0

## Tetrabutylammonium iodide

## Y00070 Tetrabutylammonium iodide, extra pure, Reag. Ph Eur



- $C_{16}H_{36}IN$
- $M = 369,38$  g/mol
- CAS [311-28-4]
- EINECS-No.: 206-220-5
- Solub. in water: (20 °C): slightly soluble
- Melting point: 143 - 146 °C
- LD 50 (oral, rat): 1990 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2923 90 00 90

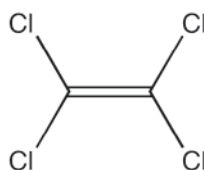
- Applications: synthesis of organic products, laboratory reagent, phase transfer catalyst.

**Specifications:**

assay (argentometric) ..... min. 99 %  
 identity (IR-spectrum) ..... passes test  
 residue on ignition ..... max. 0,02 %

Art. No.	Volume	Container
Y000701000	1 kg	0

## Tetrachloroethene



- Synonyms: Perchloroethylene, Tetrachloroethylene, Ethylene tetrachloride
- $C_2Cl_4$
- $M = 165,82$  g/mol
- CAS [127-18-4]
- EINECS-No.: 204-825-9
- Density: 1,62 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,2 g/l
- Melting point: -22 °C
- Boiling point: 121 °C
- Vapour pressure: (20 °C) 18 hPa
- Refraction index: (n 20 °C/D) 1,5053
- Dielectric const.: (20 °C) 2,4

- LD 50 (oral, rat): 2629 mg/kg
- EC-Index-No.: 602-028-00-4
- ADR: 6.1 T1 III UN 1897
- IMDG: 6.1 III UN 1897
- IATA/ICAO: 6.1 III UN 1897
- GHS-signal word: Warning
- GHS-H sentences: H351 - H411
- GHS-P sentences: P281 - P273 - P308 + P313 - P391 - P405 - P501a
- Tariff number: 2903 23 00 00
- Applications: analytical chemistry, for spectroscopy, chromatography, laboratory reagent, solvents.

## TE0125 Tetrachloroethene, extra pure

assay (G.C.) ..... min. 99,5 %  
 identity (IR-spectrum) ..... passes test  
 density (20°/4°) ..... 1,621 - 1,623  
 acidity ..... max. 0,002 meq/g  
 alkalinity ..... max. 0,002 meq/g  
 chlorides (Cl) ..... max. 0,001 %  
 copper (Cu) ..... max. 0,00002 %

iron (Fe) ..... max. 0,00005 %  
 lead (Pb) ..... max. 0,00002 %  
 nickel (Ni) ..... max. 0,00002 %  
 chloroform (G.C.) ..... max. 0,05 %  
 trichloroethylene (G.C.) ..... max. 0,1 %  
 residue on evaporation ..... max. 0,001 %  
 water (K.F.) ..... max. 0,01 %

Art. No.	Volume	Container
TE01251000	1 l	0
TE01252500	2,5 l	0
TE0125005P	5 l	0
TE0125025A	25 l	0

# Tetrac

## TE0127 Tetrachloroethene, Multisolvent® HPLC grade UV-VIS



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,621 - 1,623  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0005 meq/g  
 aluminium (Al) . . . . . max. 0,00001 %  
 barium (Ba) . . . . . max. 0,000001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000001 %  
 calcium (Ca) . . . . . max. 0,00003 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %

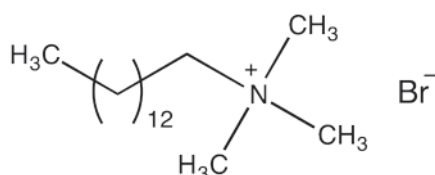
copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,000002 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,00001 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,000001 %  
 residue on evaporation . . . . . max. 0,0003 %  
 water (K.F.) . . . . . max. 0,01 %  
 min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 T(%) A (AU)  
 290 nm . . . . . 10 % 1,000 AU

295 nm . . . . . 50 % 0,301 AU  
 300 nm . . . . . 80 % 0,097 AU  
 305 nm . . . . . 85 % 0,071 AU  
 350 nm . . . . . 89 % 0,051 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
TE01271000	1 l	0
TE01272500	2,5 l	0

## Tetradecyltrimethylammonium bromide

### BR0201 Tetradecyltrimethylammonium bromide, HPLC grade



- Synonyms: Myristyltrimethylammonium bromide, N,N,N-Trimethyl-1-tetradecan ammonium bromide
- C<sub>17</sub>H<sub>38</sub>BrN
- M = 316,08 g/mol
- CAS [1119-97-7]
- EINECS-No.: 214-291-9
- Solub. in water: (20 °C): 100 g/l
- Melting point: 245 - 250 °C
- ADR: 8 C10 III UN 1759
- IMDG: 8 III UN 1759
- IATA/ICAO: 8 III UN 1759
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2923 90 00 90

- Applications: analytical chemistry, chromatography, laboratory reagent, synthesis of organic products, disinfectant, antiseptic.

#### Specifications:

assay (argentometric) . . . . . min. 96 %  
 identity (IR-spectrum) . . . . . passes test  
 insoluble matter . . . . . passes test  
 max. absorbance of an aqueous sol. 10 % in a 1,0 cm cell at wavelength: absorbance:  
 240 nm . . . . . 0,04 AU  
 250 nm . . . . . 0,03 AU  
 260 nm . . . . . 0,02 AU

Art. No.	Volume	Container
BR02010025	25 g	0

## Tetrahydrofuran



- Synonyms: THF, Tetramethylene oxide, Oxolane
- C<sub>4</sub>H<sub>8</sub>O
- M = 72,11 g/mol
- CAS [109-99-9]
- EINECS-No.: 203-726-8
- Density: 0,89 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -108,5 °C
- Boiling point: 65 - 66 °C
- Flash pt. -21,5 °C
- Ignition temp.: 215 °C
- Vapour pressure: (20°C) 173 hPa
- Refraction index: (n 20 °C/D) 1,407
- Dielectric const.: (20 °C) 7,4

- LD 50 (oral, rat): 1650 mg/kg
- EC-Index-No.: 603-025-00-0
- ADR: 3 F1 II UN 2056
- IMDG: 3 II UN 2056
- IATA/ICAO: 3 II UN 2056
- GHS-signal word: Danger
- GHS-H sentences: H225 - EUH019 - H351 - H319 - H335
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2932 11 00 00
- Applications: solvents, synthesis of polymers, synthesis of organic products, for organometallic compounds synthesizing, for histology.

## TE0219 Tetrahydrofuran, synthesis grade, stabilized with 2,6-Di-tert-butyl-4-methylphenol (BHT)



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,887 - 0,889  
 residue on evaporation . . . . . max. 0,02 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
TE02191000	1 l	0
TE02192500	2,5 l	0
TE0219005L	5 l	0
TE0219005P	5 l	0
TE0219025L	25 l	0
TE0219025S	25 l	0

## TE0220 Tetrahydrofuran, extra pure, stabilized with 250 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,887 - 0,889  
 acidity . . . . . max. 0,0003 meq/g  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00005 %

lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,005 %  
 residue on evaporation . . . . . max. 0,025 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
TE02201000	1 l	0
TE02202500	2,5 l	0
TE0220005L	5 l	0
TE0220025A	25 l	0

**TE0221 Tetrahydrofuran, reagent grade, ACS, Reag. Ph Eur, stabilized with 250 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)**

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,887 - 0,889  
 density (20°/20°) . . . . . 0,889 - 0,891  
 colour (Hazen) . . . . . max. 10  
 appearance . . . . . clear  
 acidity . . . . . max. 0,0003 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %

cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,000002 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %

zinc (Zn) . . . . . max. 0,00001 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,005 %  
 residue on evaporation . . . . . max. 0,025 %  
 water (K.F.) . . . . . max. 0,03 %

Art. No.	Volume	Container
TE02211000	1 l	
TE02212500	2,5 l	
TE0221025S	25 l	

**TE0223 Tetrahydrofuran, dried (max. 0,005% H<sub>2</sub>O), reagent grade, stabilized with 250 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)**

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,887 - 0,889  
 appearance . . . . . clear  
 acidity . . . . . max. 0,0003 meq/g  
 colour (Hazen) . . . . . max. 10  
 alkalinity . . . . . max. 0,0002 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %

cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,000002 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %

tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,005 %  
 residue on evaporation . . . . . max. 0,025 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
TE02231000	1 l	
TE02232500	2,5 l	

**TE0228 Tetrahydrofuran, Multisolvant® GPC grade, ACS, stabilized with 250 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)**

assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,887 - 0,889  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0003 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 aluminium (Al) . . . . . max. 0,00001 %  
 barium (Ba) . . . . . max. 0,000001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000001 %  
 calcium (Ca) . . . . . max. 0,00003 %

chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,000002 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,000001 %  
 manganese (Mn) . . . . . max. 0,000001 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,000001 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,005 %  
 residue on evaporation . . . . . max. 0,025 %

water (K.F.) . . . . . max. 0,02 %

Art. No.	Volume	Container
TE02281000	1 l	
TE02282500	2,5 l	
TE02284000	4 l	
TE0228007E	7 l	
TE0228030S	30 l	

**TE0225 Tetrahydrofuran, HPLC grade, without stabilizer**

assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,887 - 0,889  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,02 %  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,02 %

min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 230 nm . . . . . T(%) A (AU) 35 % 0,456 AU  
 243 nm . . . . . 50 % 0,301 AU  
 273 nm . . . . . 90 % 0,046 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
TE02251000	1 l	
TE02252500	2,5 l	
TE02254000	4 l	
TE0225020S	20 l	

**TE0222 Tetrahydrofuran, 99,8%, anhydrous (max. 0,005% H<sub>2</sub>O), stabilized with 250 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)**

assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,889 - 0,891  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0003 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,000002 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %

peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,005 %  
 residue on evaporation . . . . . max. 0,025 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
TE02220100	100 ml	
TE02220500	500 ml	
TE02221000	1 l	

**TE0229 Tetrahydrofuran, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O), with molecular sieves, stabilized with 2,6-Di-tert-butyl-4-methylphenol (BHT)**

assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,887 - 0,889  
 acidity . . . . . max. 0,0003 meq/g  
 copper (Cu) . . . . . max. 0,00002 %

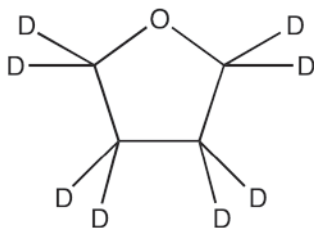
iron (Fe) . . . . . max. 0,00005 %  
 lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 peroxides (as H<sub>2</sub>O<sub>2</sub>) . . . . . max. 0,005 %  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
TE02291000	1 l	

# Tetra

## Tetrahydrofuran-d8

TE0230 Tetrahydrofuran-d8, deuteration degree min. 99,5%, NMR spectroscopy grade, Spectrosol®



- Synonyms: Octadeuterotetrahydrofurane
- $C_4D_8O$
- $M = 80,16$  g/mol
- CAS [1693-74-9]
- EINECS-No.: 216-898-4
- Density: 0,99 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -108 °C
- Boiling point: 64 °C
- Flash pt. -17,5 °C
- LD 50 (oral, rat): 1650 mg/kg
- ADR: 3 F1 II UN 2056
- IMDG: 3 II UN 2056
- IATA/ICAO: 3 II UN 2056
- GHS-signal word: Danger
- GHS-H sentences: H225 - EUH019 - H319 - H335

- GHS-P sentences: P210 - P241 - P303 + P361 + P533 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2845 90 10 00
- Applications: for nuclear magnetic resonance spectroscopy.

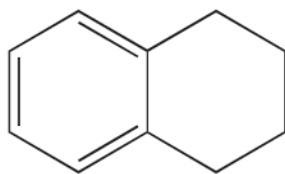
### Specifications:

deuteration degree . . . . . min. 99,5 %  
 water (K.F.,  $H_2O + D_2O$ ) . . . . . max. 0,05 %  
 performance test  
 (NMR-spectrum) . . . . . passes test

Art. No.	Volume	Container
TE0230.750	x8x0,75 ml	Ⓟ

## 1,2,3,4-Tetrahydronaphthalene

TE0240 1,2,3,4-Tetrahydronaphthalene, pure



- Synonyms: Tetralin
- $C_{10}H_{12}$
- $M = 132,21$  g/mol
- CAS [119-64-2]
- EINECS-No.: 204-340-2
- Density: 0,97 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: -36 °C
- Boiling point: 207 °C
- Flash pt. 77 °C
- Ignition temp.: 425 °C
- Vapour pressure: (20 °C) 0,4 hPa
- Refraction index: (n 20 °C/D) 1,5414
- Dielectric const.: (20 °C) 2,6
- LD 50 (oral, rat): 2860 mg/kg
- EC-Index-No.: 601-045-00-4
- ADR: 9 M6 III UN 3082
- IMDG: 9 III UN 3082
- IATA/ICAO: 9 III UN 3082

- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H411 - EUH019
- GHS-P sentences: P280 - P273 - P305 + P351 + P338 - P321 - P362 - P501a
- Tariff number: 2902 90 90 00
- Applications: solvents, degreasing agent.

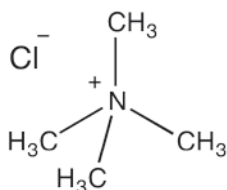
### Specifications:

assay (G.C.) . . . . . min. 98 %  
 identity (IR-spectrum) . . . . . passes test  
 heavy metals (as Pb) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 residue on ignition . . . . . max. 0,005 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
TE02401000	1 l	Ⓟ

## Tetramethylammonium chloride

CL0355 Tetramethylammonium chloride, synthesis grade



- $C_4H_{12}ClN$
- $M = 109,60$  g/mol
- CAS [75-57-0]
- EINECS-No.: 200-880-8
- Solub. in water: (20 °C): freely soluble
- Melting point: > 300 °C
- LD 50 (oral, rat): 80 mg/kg
- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- GHS-signal word: Danger
- GHS-H sentences: H301 - H312 - H315
- GHS-P sentences: P280 - P301 + P310 - P321 - P322 - P405 - P501a

- Tariff number: 2923 90 00 90
- Applications: synthesis of organic products, laboratory reagent, catalyst.
- Appearance: White-ivory crystalline powder

### Specifications:

assay (argentometric) . . . . . min. 98 %  
 identity (IR-spectrum) . . . . . passes test

Art. No.	Volume	Container
CL03550025	25 g	Ⓟ

## Tetrasodium diphosphate decahydrate

S00583 Tetrasodium diphosphate decahydrate, extra pure, Reag. Ph Eur

- Synonyms: Tetrasodium pyrophosphate, TSPP
- $Na_4P_2O_7 \cdot 10H_2O$
- $M = 446,06$  g/mol
- CAS [13472-36-1]
- EINECS-No.: 231-767-1
- Solub. in water: (20 °C): ~ 60 g/l
- Melting point: ~ 79,5 °C
- Boiling point: 93,8 °C
- LD 50 (oral, rat): 4000 mg/kg (anhydrous substance)
- Tariff number: 2835 39 00 00
- Applications: analytical chemistry, laboratory reagent, in food industry (E 450), emulsifier, stabilizer, humectant.

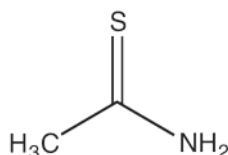
### Specifications:

assay (acidimetric) . . . . . min. 99 %  
 insoluble in water . . . . . max. 0,025 %  
 pH (5 %,  $H_2O$ ) . . . . . 9,5 - 10,8  
 chlorides (Cl) . . . . . max. 0,01 %  
 nitrates ( $NO_3$ ) . . . . . max. 0,01 %  
 ortho-phosphates ( $PO_4$ ) . . . . . max. 0,05 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,05 %  
 arsenic (As) . . . . . max. 0,0003 %  
 calcium (Ca) . . . . . max. 0,05 %  
 copper (Cu) . . . . . max. 0,003 %  
 iron (Fe) . . . . . max. 0,003 %  
 lead (Pb) . . . . . max. 0,003 %

magnesium (Mg) . . . . . max. 0,05 %  
 nickel (Ni) . . . . . max. 0,003 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
S005830500	500 g	Ⓟ
S005831000	1 kg	Ⓟ
S00583005P	5 kg	Ⓟ

## Thioacetamide



- Synonyms: Ethanethioamide
- $C_2H_5NS$
- $M = 75,13 \text{ g/mol}$
- CAS [62-55-5]
- EINECS-No.: 200-541-4
- Solub. in water: (25 °C): 163 g/l
- Melting point: 113 - 114 °C
- LD 50 (oral, rat): 301 mg/kg
- EC-Index-No.: 616-026-00-6

- GHS-signal word: Danger
- GHS-H sentences: H350 - H302 - H315 - H319 - H412
- GHS-P sentences: P280 - P281 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2930 90 99 99
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products, precipitant for: heavy metals.

## TI0139 Thioacetamide, synthesis grade

assay (argentometric) .....min. 98 %  
 identity (IR-spectrum) .....passes test  
 residue on ignition .....max. 0,5 %

Art. No.	Volume	Container
TI01390250	250 g	Ⓟ

## TI0140 Thioacetamide, reagent grade, ACS

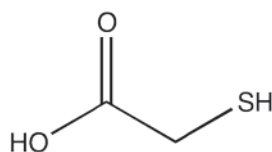
assay (argentometric) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 melting point ..... 111 - 114 °C  
 appearance of solution .....passes test

heavy metals (as Pb) .....max. 0,001 %  
 residue on ignition .....max. 0,05 %  
 iron (Fe) .....max. 0,0005 %

Art. No.	Volume	Container
TI01400050	50 g	Ⓟ

## Thioglycolic acid, 80%

## AC3080 Thioglycolic acid, solution 80% w/w, extra pure



- Synonyms: Mercaptoacetic acid
- $C_2H_3O_2S$
- $M = 92,12 \text{ g/mol}$
- CAS [68-11-1]
- EINECS-No.: 200-677-4
- Density: 1,27 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -15 - -10 °C
- Flash pt. 126 °C (anhydrous substance)
- Vapour pressure: (20 °C) 0,1 hPa (anhydrous substance)
- Refraction index: (n 20 °C/D) 1,5030
- LD 50 (oral, rat): 73 mg/kg (anhydrous substance)
- EC-Index-No.: 607-090-00-6
- ADR: 8 C3 II UN 1940
- IMDG: 8 II UN 1940
- IATA/ICAO: 8 II UN 1940
- GHS-signal word: Danger
- GHS-H sentences: H301 - H311 - H331 - H314
- GHS-P sentences: P301 + P310 - P303 + P361 + P533 - P305 + P351 + P338 - P310 - P361 - P405 - P501a

- Tariff number: 2930 90 99 99
- Applications: analytical chemistry, laboratory reagent, reagent for metals detection (iron, tin, silver, molybdenum), for spectrophotometric determinations (for determination of: palladium).

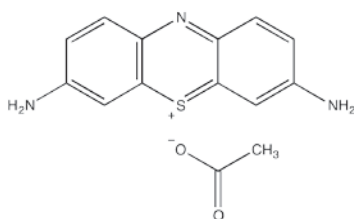
## Specifications:

assay (iodometric) .....79 - 82 %  
 density (20°/4°) .....1,26 - 1,28  
 copper (Cu) .....max. 0,0005 %  
 heavy metals (as Pb) .....max. 0,001 %  
 iron (Fe) .....max. 0,0005 %  
 lead (Pb) .....max. 0,0005 %  
 nickel (Ni) .....max. 0,0005 %  
 sensitivity to iron .....passes test  
 residue on ignition .....max. 0,03 %  
 water (K.F.) .....18 - 21 %

Art. No.	Volume	Container
AC30800500	500 ml	Ⓟ
AC30801000	1 l	Ⓟ

## Thionine, C.I. 52000

## TI0250 Thionine, C.I. 52000, for microscopy



- Synonyms: Thionine (acetate), 3,7-Diaminophenothiazin-5-ium chloride, Lauth's violet
- $C_{14}H_{13}N_3O_2S$
- $M = 287,34 \text{ g/mol}$
- CAS [78338-22-4]
- Solub. in water: (25 °C): ~ 2,5 g/l
- Tariff number: 3204 19 00 90
- Applications: microscopy, indicator.

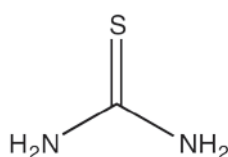
## Specifications:

assay (spectrophotometric) .....min. 85 %

Absorption maximum  $\lambda$  (in  $H_2O$ ) .....598 - 600 nm  
 Absorptivity (A1%/1 cm; 0,0005 %  
 $\lambda$  max,  $H_2O$ ) .....1740 - 2070  
 related substances (TLC) .....passes test  
 loss on drying (110 °C) .....max. 7 %  
 suitability for microscopy .....passes test

Art. No.	Volume	Container
TI02500005	5 g	Ⓟ
TI02500025	25 g	Ⓟ

## Thiourea



- Synonyms: Thiocarbamide
- $CH_4N_2S$
- $M = 76,11 \text{ g/mol}$
- CAS [62-56-6]
- EINECS-No.: 200-543-5
- Solub. in water: (20 °C): 137 g/l
- Melting point: 171 - 184 °C
- Ignition temp.: 440 °C
- LD 50 (oral, rat): 1750 mg/kg
- EC-Index-No.: 612-082-00-0
- ADR: 9 M7 III UN 3077

- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning
- GHS-H sentences: H351 - H361d - H302 - H411
- GHS-P sentences: P281 - P273 - P301 + P312 - P308 + P313 - P405 - P501a
- Tariff number: 2930 90 99 99
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products, photography, manufacturing of synthetic resins, for the detection of: bismuth and selenium.

# Thiour

## TI0300 Thiourea, extra pure

assay (argentometric) . . . . .min. 98 %	nickel (Ni) . . . . .max. 0,002 %
identity (IR-spectrum) . . . . .passes test	iron (Fe) . . . . .max. 0,002 %
sulfates (SO <sub>4</sub> ) . . . . .max. 0,05 %	residue on ignition . . . . .max. 0,1 %
copper (Cu) . . . . .max. 0,002 %	
lead (Pb) . . . . .max. 0,002 %	

Art. No.	Volume	Container
TI03000500	500 g	
TI03001000	1 kg	
TI0300005P	5 kg	

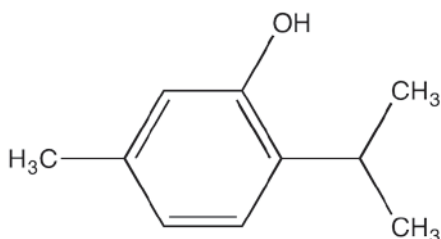
## TI0303 Thiourea, reagent grade, ACS

assay (argentometric, on dried base) . . . . .min. 99 %	melting point . . . . .174 - 177 °C
identity (IR-spectrum) . . . . .passes test	loss on drying (105 °C) . . . . .max. 0,5 %
solubility in water . . . . .passes test	residue on ignition (800 °C) . . . . .max. 0,1 %
	sensitivity to bismuth . . . . .passes test

Art. No.	Volume	Container
TI03030500	500 g	
TI03031000	1 kg	

## Thymol

### TI0080 Thymol, extra pure, Pharpur®, Ph Eur, BP, NF



- Synonyms: 5-Methyl-2-(1-methylethyl)phenol, 5-Methyl-2-isopropyl-1-phenol
- C<sub>10</sub>H<sub>14</sub>O
- M = 150,22 g/mol
- CAS [89-83-8]
- EINECS-No.: 201-944-8
- Solub. in water: (25 °C): 0,98 g/l
- Melting point: 49 - 51 °C
- Boiling point: 233 °C
- Flash pt. 104 °C
- Ignition temp.: 285 °C
- Vapour pressure: (50 °C) 2,5 hPa
- LD 50 (oral, rat): 980 mg/kg
- EC-Index-No.: 604-032-00-1
- ADR: 8 C4 III UN 2430
- IMDG: 8 III UN 2430
- IATA/ICAO: 8 III UN 2430
- GHS-signal word: Danger
- GHS-H sentences: H314 - H302 - H411
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a

- Tariff number: 2907 19 00 90
- Applications: for pharmaceuticals synthesizing, anti-septic, disinfectant, cosmetics, manufacture of dyes, in pharma industry.

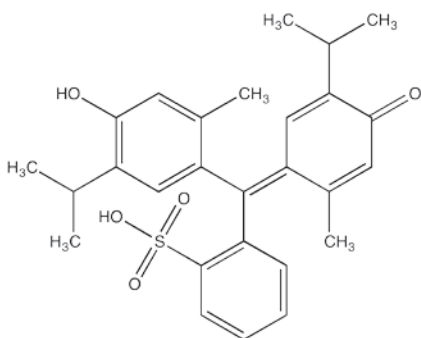
#### Specifications:

assay (G.C.) . . . . .min. 99 %
identity (IR-spectrum) . . . . .passes test
melting range . . . . .48 - 51 °C
appearance of solution . . . . .passes test
acidity . . . . .passes test
related substances (G.C.) . . . . .max. 1 %
residue on evaporation . . . . .max. 0,05 %
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
TI00800100	100 g	
TI00800500	500 g	
TI0080005P	5 kg	

## Thymol blue

### AZ0225 Thymol blue, indicator, ACS



- Synonyms: Thymolsulfonphthalein, TB
- C<sub>27</sub>H<sub>30</sub>O<sub>5</sub>S
- M = 466,60 g/mol
- CAS [76-61-9]
- EINECS-No.: 200-973-3
- Melting point: 221 °C
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, laboratory reagent, indicator.

#### Specifications:

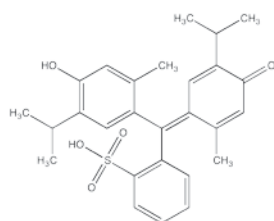
pH range 1: pink to brownish yellow . . . . .	1,2 - 2,8
pH range 2: greenish-yellow to blue . . . . .	8,0 - 9,2
Absorption max λ <sub>1</sub> (pH 1,2) . . . . .	543 - 547 nm
Absorption max λ <sub>2</sub> (pH 2,8) . . . . .	431 - 436 nm

Absorption max λ <sub>3</sub> (pH 7,8) . . . . .	431 - 436 nm
Absorption max λ <sub>4</sub> (pH 9,5) . . . . .	594 - 598 nm
Absorptivity (A1%/1 cm; λ <sub>1</sub> , pH 1,2 on dried sample) . . . . .	400 - 500
Absorptivity (A1%/1 cm; λ <sub>2</sub> , pH 2,8 on dried sample) . . . . .	200 - 300
Absorptivity (A1%/1 cm; λ <sub>3</sub> , pH 7,8 on dried sample) . . . . .	200 - 300
Absorptivity (A1%/1 cm; λ <sub>4</sub> , pH 9,5 on dried sample) . . . . .	450 - 550
loss on drying (110 °C) . . . . .	max. 3 %

Art. No.	Volume	Container
AZ02250005	5 g	
AZ02250025	25 g	

## Thymol blue, solution 0,04%

### AZ0226 Thymol blue, solution 0,04%, indicator



- Synonyms: Thymolsulfonphthalein, TB
- C<sub>27</sub>H<sub>30</sub>O<sub>5</sub>S
- M = 466,60 g/mol
- CAS [76-61-9]
- EINECS-No.: 200-973-3
- Flash pt. 49
- ADR: 3 F1 III UN 1993
- IMDG: 3 III UN 1993
- IATA/ICAO: 3 III UN 1993
- GHS-signal word: Warning
- GHS-H sentences: H226
- GHS-P sentences: P210 - P241 - P280 - P240 - P303 + P361 + P353 - P501a

- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, laboratory reagent, indicator.

#### Specifications:

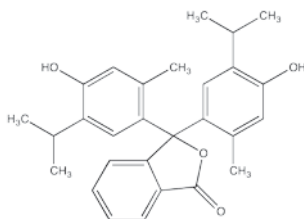
pH range (red to yellow) . . . . .	1,2 - 2,8
pH range (yellow to blue) . . . . .	8,0 - 9,6

Art. No.	Volume	Container
AZ02260100	100 ml	



## Thymolphthalein

## TIO100 Thymolphthalein, indicator, reagent grade, ACS



- $C_{28}H_{30}O_4$
- $M = 430,55 \text{ g/mol}$
- CAS [125-20-2]
- EINECS-No.: 204-729-7
- Solub. in water: (20 °C): almost insoluble
- Melting point: 253 °C
- Tariff number: 2932 20 90 90
- Applications: analytical chemistry, laboratory reagent, indicator.

**Specifications:**

identity (UV-VIS spectroscopy) . . . . . passes test

appearance of solution . . . . . passes test  
 pH range (colourless to blue) . . . . . 8,8 - 10,5  
 Absorption maximum  $\lambda$  (pH 10,5). . . . . 592 - 596 nm  
 Absorptivity ( $A_{1\%}^{1 \text{ cm}}$ ;  $\lambda_{\text{max}}$ : 0,01 g/l,  
 pH 10,5, on dried sample) . . . . . 800 - 900  
 loss on drying (110 °C) . . . . . max. 1,0 %

Art. No.	Volume	Container
TIO1000005	5 g	Ø
TIO1000025	25 g	Ø

## Tin

## ES0051 Tin, granulated (1 - 3 mm), extra pure, Reag. Ph Eur

- Sn
- $M = 118,69 \text{ g/mol}$
- CAS [7440-31-5]
- EINECS-No.: 231-141-8
- Solub. in water: (20 °C): insoluble
- Melting point: 232 °C
- Boiling point: 2362 °C
- Tariff number: 8007 00 30 00

- Applications: analytical chemistry, laboratory reagent, reducing agent, in galvanotechnia (corrosion inhibitor), metal alloys, in the electronic industry, painting.

iron (Fe) . . . . . max. 0,02 %  
 lead (Pb) . . . . . max. 0,01 %

**Specifications:**

antimony (Sb) . . . . . max. 0,0002 %  
 arsenic (As) . . . . . max. 0,01 %  
 bismuth (Bi) . . . . . max. 0,01 %  
 copper (Cu) . . . . . max. 0,005 %

Art. No.	Volume	Container
ES00510100	100 g	Ø
ES00510250	250 g	Ø
ES00511000	1 kg	Ø

## Tin(II) chloride dihydrate

- Synonyms: Hydrochloric acid tin(II) salt dihydrate, Stannous chloride, Stannochlor
- $SnCl_2 \cdot 2H_2O$
- $M = 225,63 \text{ g/mol}$
- CAS [10025-69-1]
- EINECS-No.: 231-868-0

- Solub. in water: (20 °C): soluble
- Melting point: 37,7 °C
- LD 50 (oral, rat): 700 mg/kg (anhydrous substance)
- GHS-signal word: Warning
- GHS-H sentences: H302 - H315 - H319 - H317 - H335

- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2827 39 10 00

- Applications: analytical chemistry, laboratory reagent, for the detection of: arsenic, mercury, bismuth and gold.

## ES0063 Tin(II) chloride dihydrate, extra pure, Pharmpur®, Ph Eur, BP

assay (iodometric) . . . . . 98 - 102 %  
 identity . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 sulfates ( $SO_4$ ) . . . . . max. 0,05 %  
 heavy metals (as Pb) . . . . . max. 0,005 %  
 iron (Fe) . . . . . max. 0,01 %

non-precipitable by thioacetamide . . . . . max. 0,2 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
ES00630100	100 g	Ø
ES00631000	1 kg	Ø
ES0063005P	5 kg	Ø
ES0063025P	25 kg	Ø

## ES0064 Tin(II) chloride dihydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (iodometric) . . . . . 98 - 103 %  
 identity . . . . . passes test  
 solubility in HCl . . . . . passes test  
 sulfates ( $SO_4$ ) . . . . . max. 0,003 %  
 ammonium ( $NH_4$ ) . . . . . max. 0,002 %  
 arsenic (As) . . . . . max. 0,0001 %  
 calcium (Ca) . . . . . max. 0,005 %  
 copper (Cu) . . . . . max. 0,001 %  
 heavy metals (as Pb) . . . . . max. 0,005 %  
 iron (Fe) . . . . . max. 0,002 %

lead (Pb) . . . . . max. 0,005 %  
 magnesium (Mg) . . . . . max. 0,005 %  
 manganese (Mn) . . . . . max. 0,0005 %  
 nickel (Ni) . . . . . max. 0,0005 %  
 other metals (as Pb) . . . . . max. 0,01 %  
 potassium (K) . . . . . max. 0,005 %  
 sodium (Na) . . . . . max. 0,01 %  
 non precipitable with  $H_2S$  (as  $SO_4$ ) . . . . . max. 0,05 %

Art. No.	Volume	Container
ES00640100	100 g	Ø
ES00640250	250 g	Ø
ES00640500	500 g	Ø
ES00641000	1 kg	Ø
ES0064025P	25 kg	Ø

## Tin(IV) chloride

## ES0065 Tin(IV) chloride, synthesis grade

- Synonyms: Tin tetrachloride
- $SnCl_4$
- $M = 260,50 \text{ g/mol}$
- CAS [7646-78-8]
- EINECS-No.: 231-588-9
- Density: 2,23 g/cm<sup>3</sup>
- Solub. in water: (20 °C): soluble (decomposes)
- Melting point: -33 °C
- Boiling point: 114,1 °C
- Vapour pressure: (20 °C) 24 hPa
- EC-Index-No.: 050-001-00-5
- ADR: 8 C1 II UN 1827

- IMDG: 8 II UN 1827
- IATA/ICAO: 8 II UN 1827
- GHS-signal word: Danger
- GHS-H sentences: H314 - H412
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2827 39 10 00
- Applications: laboratory reagent, synthesis of organic products (desiccant), mordant/corrosive, stabilizer (cosmetics), in the ceramics industry (in galvanotechnia).
- Appearance: Colourless liquid

**Specifications:**

assay (iodometric) . . . . . min. 99 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,01 %  
 arsenic (As) . . . . . max. 0,01 %  
 iron (Fe) . . . . . max. 0,001 %  
 non precipitable with  $H_2S$  (as  $SO_4$ ) . . . . . max. 0,05 %

Art. No.	Volume	Container
ES00650250	250 ml	Ø

# Tinvox

## Tin(IV) oxide

### ES0070 Tin(IV) oxide, extra pure

- Synonyms: Tin dioxide, Stannic (IV) oxide
- $\text{SnO}_2$
- $M = 150,70 \text{ g/mol}$
- CAS [18282-10-5]
- EINECS-No.: 242-159-0
- Solub. in water: (20 °C): insoluble
- Melting point: 1630 °C
- LD 50 (oral, rat): > 20000 mg/kg
- Tariff number: 2825 90 30 00

- Applications: laboratory reagent, mordant/corrosive (manufacture of dyes, painting), in the production of enamels, in the ceramics industry, polishing glass, metals and fingernails.

**Specifications:**  
 assay (gravimetric) .....min. 99 %  
 soluble in acid .....max. 0,2 %  
 chlorides (Cl) .....max. 0,05 %

sulfates ( $\text{SO}_4$ ) .....max. 0,05 %  
 residue on ignition (900 °C) .....max. 0,2 %  
 iron (Fe) .....max. 0,01 %

Art. No.	Volume	Container
ES00701000	1 kg	Ⓢ

## TISAB III

### TI0329 TISAB III, for fluorides determination

- Density: ~ 1,05 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-signal word: Warning
- GHS-H sentences: H319
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P337 + P313
- Tariff number: 3822 00 00 00

- Applications: analytical chemistry, for determination of: fluorides.

**Specifications:**  
 composition: 1,2- Diaminocyclohexane-N,N,N',N'-tetraacetic acid monohydrate ..... 18 g  
 ammonium chloride ..... 96,65 g  
 ammonium acetate ..... 163,4 g

cresol red ..... 0,1 g  
 water ..... 1 liter

Art. No.	Volume	Container
TI03290500	500 ml	Ⓢ
TI03291000	1 l	Ⓢ

## TISAB IV

### TI0330 TISAB IV, for fluorides determination, according to ASTM D1179

- Density: 1,20 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313

- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for determination of: fluorides.

**Specifications:**  
 for samples containing < 3 ppm of Fe and/or Al

Art. No.	Volume	Container
TI03300500	500 ml	Ⓢ

## Titanium dioxide

### TI0367 Titanium dioxide, synthesis grade

- Synonyms: Titanium(IV) oxide
- $\text{TiO}_2$
- $M = 79,90 \text{ g/mol}$
- CAS [13463-67-7]
- EINECS-No.: 236-675-5
- Solub. in water: (20 °C): insoluble
- Melting point: 1855 °C
- Boiling point: 2900 °C

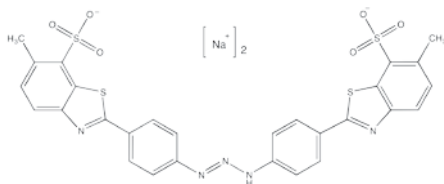
- LD 50 (oral, rat): > 10000 mg/kg
- Tariff number: 2823 00 00 90
- Applications: laboratory reagent, synthesis of organic products, pigment, in food industry (colouring agent), painting, in the ceramics industry, in the production of enamels.

**Specifications:**  
 assay .....min. 99 %  
 loss on ignition (1000 °C, 2 h) .....max. 0,5 %

Art. No.	Volume	Container
TI03670500	500 g	Ⓢ
TI03671000	1 kg	Ⓢ

## Titan yellow, C.I. 19540

### AM0095 Titan yellow, C.I. 19540, reagent for magnesium and indicator

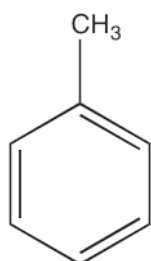


- Synonyms: Clayton yellow, Naphthamine G, Thiazole yellow
- $\text{C}_{26}\text{H}_{19}\text{N}_5\text{Na}_2\text{O}_6\text{S}_2$
- $M = 695,73 \text{ g/mol}$
- CAS [1829-00-1]
- EINECS-No.: 217-377-4
- Solub. in water: (24 °C): ~ 29 g/l
- Tariff number: 3204 19 00 90
- Applications: analytical chemistry, indicator, laboratory reagent (magnesium).

**Specifications:**  
 Absorption maximum  $\lambda$  (pH 7,0) ..... 405 - 406 nm  
 Absorptivity ( $A_{1\%}^{1 \text{ cm}}$ ;  $\lambda$  max, pH 7,0 on dried sample) ..... 550 - 560  
 loss on drying (110 °C) ..... max. 8 %  
 suitability as magnesium reagent ..... passes test

Art. No.	Volume	Container
AM00950025	25 g	Ⓢ
AM00950100	100 g	Ⓢ

## Toluene



- Synonyms: Methylbenzene, Phenylmethane
- $\text{C}_7\text{H}_8$
- $M = 92,14 \text{ g/mol}$
- CAS [108-88-3]
- EINECS-No.: 203-625-9
- Density: 0,87 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,52 g/l
- Melting point: -95 °C
- Boiling point: 111 °C
- Flash pt. 4 °C
- Ignition temp.: 535 °C
- Vapour pressure: (20 °C) 29 hPa
- Dielectric const.: (25 °C) 2,3

- LD 50 (oral, rat): 636 mg/kg
- EC-Index-No.: 601-021-00-3
- ADR: 3 F I II UN 1294
- IMDG: 3 II UN 1294
- IATA/ICAO: 3 II UN 1294
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H361d - H373 - H315 - H336
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2902 30 00 00
- Applications: synthesis of organic products, solvents, as gasoline additive.

## T00072 Toluene, synthesis grade



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,864 - 0,868  
 residue on evaporation . . . . . max. 0,003 %  
 water (K.F.) . . . . . max. 0,1 %

Art. No.	Volume	Container
T000721000	1 l	0
T000722500	2,5 l	0
T00072005P	5 l	0
T00072025P	25 l	0
T00072025S	25 l	0
T00072200L	200 l	0

## T00073 Toluene, extra pure



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,864 - 0,868  
 acidity . . . . . max. 0,0003 meq/g  
 alkalinity . . . . . max. 0,00025 meq/g  
 benzene (G.C.) . . . . . max. 0,1 %  
 ethylbenzene (G.C.) . . . . . max. 0,1 %  
 o-xylene (G.C.) . . . . . max. 0,05 %  
 m-xylene (G.C.) . . . . . max. 0,1 %  
 p-xylene (G.C.) . . . . . max. 0,05 %  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00005 %

lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 sulphur compounds (as CS<sub>2</sub>) . . . . . max. 0,001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,05 %

Art. No.	Volume	Container
T000731000	1 l	0
T000732500	2,5 l	0
T00073005L	5 l	0
T00073005P	5 l	0
T00073025A	25 l	0
T00073025S	25 l	0
T00073200E	200 l	0
T00073200L	200 l	0

## T00075 Toluene, reagent grade, ACS, ISO, Reag. Ph Eur



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 0,865 - 0,870  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 boiling point . . . . . 109 - 111 °C  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 chlorides (Cl) . . . . . max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 antimony (Sb) . . . . . max. 0,000002 %  
 arsenic (As) . . . . . max. 0,000002 %  
 barium (Ba) . . . . . max. 0,00001 %  
 beryllium (Be) . . . . . max. 0,000002 %  
 bismuth (Bi) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,00002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 gallium (Ga) . . . . . max. 0,000002 %  
 gold (Au) . . . . . max. 0,00001 %  
 indium (In) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 lithium (Li) . . . . . max. 0,000002 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 molybdenum (Mo) . . . . . max. 0,000005 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 platinum (Pt) . . . . . max. 0,000002 %  
 silver (Ag) . . . . . max. 0,000002 %  
 thallium (Tl) . . . . . max. 0,000005 %  
 tin (Sn) . . . . . max. 0,00001 %  
 titanium (Ti) . . . . . max. 0,000005 %

vanadium (V) . . . . . max. 0,000005 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 zirconium (Zr) . . . . . max. 0,000002 %  
 benzene (G.C.) . . . . . max. 0,05 %  
 sulfur compounds (as S) . . . . . max. 0,003 %  
 thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . . max. 0,0001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,02 %

Art. No.	Volume	Container
T000751000	1 l	0
T000752500	2,5 l	0
T00075005L	5 l	0
T00075025A	25 l	0
T00075025S	25 l	0
T00075030S	30 l	0

## T00074 Toluene, dried (max. 0,0075% H<sub>2</sub>O), reagent grade, ACS, ISO



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,864 - 0,868  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 chlorides (Cl) . . . . . max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 antimony (Sb) . . . . . max. 0,000002 %  
 arsenic (As) . . . . . max. 0,000002 %  
 barium (Ba) . . . . . max. 0,00001 %  
 beryllium (Be) . . . . . max. 0,000002 %  
 bismuth (Bi) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %

cadmium (Cd) . . . . . max. 0,000005 %  
 calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 gallium (Ga) . . . . . max. 0,000002 %  
 gold (Au) . . . . . max. 0,00001 %  
 indium (In) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 lithium (Li) . . . . . max. 0,000002 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 molybdenum (Mo) . . . . . max. 0,000005 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 platinum (Pt) . . . . . max. 0,000002 %

silver (Ag) . . . . . max. 0,000002 %  
 thallium (Tl) . . . . . max. 0,000005 %  
 tin (Sn) . . . . . max. 0,00001 %  
 titanium (Ti) . . . . . max. 0,000005 %  
 vanadium (V) . . . . . max. 0,000005 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 zirconium (Zr) . . . . . max. 0,000002 %  
 benzene (G.C.) . . . . . max. 0,05 %  
 sulfur compounds (as S) . . . . . max. 0,003 %  
 thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . . max. 0,0001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,0075 %

Art. No.	Volume	Container
T000741000	1 l	0

# Toluene

## T00085 Toluene, Multisolvent® HPLC grade ACS ISO UV-VIS



assay (G.C.) . . . . . min. 99,9 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,864 - 0,868  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 chlorides (Cl) . . . . . max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00001 %  
 antimony (Sb) . . . . . max. 0,00002 %  
 arsenic (As) . . . . . max. 0,000002 %  
 barium (Ba) . . . . . max. 0,000001 %  
 beryllium (Be) . . . . . max. 0,000002 %  
 bismuth (Bi) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000001 %  
 calcium (Ca) . . . . . max. 0,00003 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 gallium (Ga) . . . . . max. 0,000002 %  
 gold (Au) . . . . . max. 0,00001 %

indium (In) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 lithium (Li) . . . . . max. 0,000002 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000001 %  
 molybdenum (Mo) . . . . . max. 0,000005 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 platinum (Pt) . . . . . max. 0,000002 %  
 silver (Ag) . . . . . max. 0,000002 %  
 thallium (Tl) . . . . . max. 0,000005 %  
 tin (Sn) . . . . . max. 0,00001 %  
 titanium (Ti) . . . . . max. 0,000005 %  
 vanadium (V) . . . . . max. 0,000005 %  
 zinc (Zn) . . . . . max. 0,000001 %  
 zirconium (Zr) . . . . . max. 0,000002 %  
 benzene (G.C.) . . . . . max. 0,05 %  
 sulfur compounds (as S) . . . . . max. 0,003 %  
 thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . . max. 0,0001 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0002 %  
 water (K.F.) . . . . . max. 0,02 %  
 liquid chromatography suitability

absorbance . . . . . passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 285 nm . . . . . 10 % 1,000 AU  
 292 nm . . . . . 50 % 0,301 AU  
 305 nm . . . . . 80 % 0,097 AU  
 317 nm . . . . . 90 % 0,046 AU  
 350 nm . . . . . 98 % 0,009 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
T000851000	1 l	0
T000852500	2,5 l	0
T000854000	4 l	0
T00085005M	5 l	0
T00085007E	7 l	0
T00085020S	20 l	0
T00085025S	25 l	0

## T00081 Toluene, for GC residue analysis



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,864 - 0,868  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,02 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 3 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl.

Art. No.	Volume	Container
T000811000	1 l	0
T000812500	2,5 l	0

## T00082 Toluene, GC ultra-trace analysis grade



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,864 - 0,868  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,02 %

Suitable for organohalogenated pesticide and dioxins, furans and PCBs residue analysis. ECD, from 1,2,4-trichlorobenzene to decachlorobiphenyl, no peaks are obtained greater than 2 pg/ml as lindane. No peaks are obtained in vicinity of 2,4,5-trichlorobiphenyl. Suitable for highly volatile halogenated hydrocarbons trace analysis. ECD, from dichloromethane to 1,2,4-trichlorobenzene, no peaks are obtained greater than 1 ng/ml as tetrachloromethane.

Suitable for pesticide and polycyclic aromatic hydrocarbons residue analysis. FID, from 1-octanol to 1-tetradecanol, no peaks are obtained greater than 2 ng/ml as 1-tetradecanol. No peaks are obtained in vicinity of pyrene.

Art. No.	Volume	Container
T000821000	1 l	0
T000822500	2,5 l	0

## T00084 Toluene, 99,8%, anhydrous (max. 0,003% H<sub>2</sub>O)



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 0,865 - 0,870  
 appearance . . . . . clear  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 chlorides (Cl) . . . . . max. 0,00005 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,0001 %  
 aluminium (Al) . . . . . max. 0,00005 %  
 antimony (Sb) . . . . . max. 0,00002 %  
 arsenic (As) . . . . . max. 0,000002 %  
 barium (Ba) . . . . . max. 0,00001 %  
 beryllium (Be) . . . . . max. 0,000002 %  
 bismuth (Bi) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 gallium (Ga) . . . . . max. 0,000002 %  
 gold (Au) . . . . . max. 0,00001 %  
 indium (In) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 lithium (Li) . . . . . max. 0,000002 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 molybdenum (Mo) . . . . . max. 0,000005 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 platinum (Pt) . . . . . max. 0,000002 %  
 silver (Ag) . . . . . max. 0,000002 %  
 thallium (Tl) . . . . . max. 0,000005 %

tin (Sn) . . . . . max. 0,00001 %  
 titanium (Ti) . . . . . max. 0,000005 %  
 vanadium (V) . . . . . max. 0,000005 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 benzene (G.C.) . . . . . max. 0,05 %  
 sulfur compounds (as S) . . . . . max. 0,003 %  
 thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . . max. 0,0005 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,0005 %  
 water (K.F.) . . . . . max. 0,003 %

Art. No.	Volume	Container
T000840100	100 ml	0
T000840500	500 ml	0
T000841000	1 l	0

## T00087 Toluene, 99,5%, anhydrous (max. 0,005% H<sub>2</sub>O), with molecular sieves



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,864 - 0,868  
 acidity . . . . . max. 0,0003 meq/g  
 alkalinity . . . . . max. 0,00025 meq/g  
 benzene (G.C.) . . . . . max. 0,1 %  
 ethylbenzene (G.C.) . . . . . max. 0,1 %

o-xylene (G.C.) . . . . . max. 0,05 %  
 m-xylene (G.C.) . . . . . max. 0,1 %  
 p-xylene (G.C.) . . . . . max. 0,05 %  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00005 %  
 lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %

thiophene (C<sub>4</sub>H<sub>4</sub>S) . . . . . max. 0,0005 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 water (K.F.) . . . . . max. 0,005 %

Art. No.	Volume	Container
T000871000	1 l	0

## T00086 Toluene, for histology



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,864 - 0,868  
 colour (Hazen) . . . . . max. 10  
 acidity . . . . . max. 0,0005 meq/g  
 alkalinity . . . . . max. 0,0003 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00002 %  
 boron (B) . . . . . max. 0,000005 %  
 cadmium (Cd) . . . . . max. 0,00001 %

calcium (Ca) . . . . . max. 0,0001 %  
 chromium (Cr) . . . . . max. 0,000005 %  
 cobalt (Co) . . . . . max. 0,00005 %  
 copper (Cu) . . . . . max. 0,000005 %  
 iron (Fe) . . . . . max. 0,00002 %  
 lead (Pb) . . . . . max. 0,00002 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000005 %  
 nickel (Ni) . . . . . max. 0,000005 %  
 tin (Sn) . . . . . max. 0,00002 %

zinc (Zn) . . . . . max. 0,00002 %  
 benzene (G.C.) . . . . . max. 0,1 %  
 sulfur compounds (as S) . . . . . max. 0,003 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,03 %

Art. No.	Volume	Container
T00086005L	5 l	0

## T00083 Toluene, ASTM

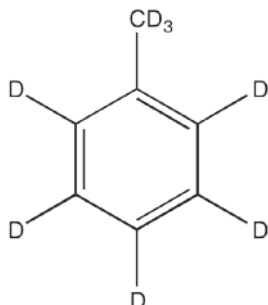
assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,864 - 0,868  
 benzene (G.C.) . . . . . max. 0,005 %

xylene (G.C.) . . . . . max. 0,02 %  
 non-aromatics . . . . . max. 0,1 %  
 lead (Pb) . . . . . max. 0,002 g/gal  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test

Art. No.	Volume	Container
T00083025A	25 l	
T00083200L	200 l	

## Toluene-d8

## T00080 Toluene-d8, deuteration degree min. 99,5%, NMR spectroscopy grade, Spectrosol®



- Synonyms: Methylbenzene deuterated
- C<sub>7</sub>D<sub>8</sub>
- M = 100,19 g/mol
- CAS [2037-26-5]
- EINECS-No.: 218-009-5
- Density: 0,94 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: -85 °C
- Boiling point: 109 °C
- Flash pt. 4 °C
- Ignition temp.: 535 °C
- LD 50 (oral, rat): 636 mg/kg
- ADR: 3 F1 II UN 1294
- IMDG: 3 II UN 1294
- IATA/CAO: 3 II UN 1294
- GHS-signal word: Danger

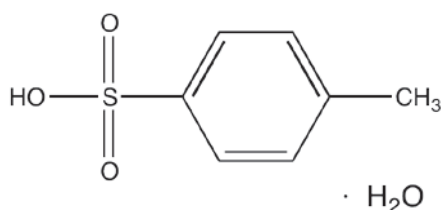
- GHS-H sentences: H225 - H304 - H361d - H373 - H315 - H336
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2845 90 10 00
- Applications: for nuclear magnetic resonance spectroscopy.

**Specifications:**

deuteration degree . . . . . min. 99,5 %  
 water (K.F., H<sub>2</sub>O + D<sub>2</sub>O) . . . . . max. 0,02 %  
 performance test (NMR-spectrum) . . . . . passes test

Art. No.	Volume	Container
T000800010	10 ml	

## Toluene-4-sulfonic acid monohydrate



- Synonyms: PTSA monohydrate, 4-Methylbenzenesulfonic acid, PASAM, p-Toluenesulfonic acid
- C<sub>7</sub>H<sub>8</sub>O<sub>3</sub>S·H<sub>2</sub>O
- M = 190,22 g/mol
- CAS [6192-52-5]
- EINECS-No.: 203-180-0
- Solub. in water: (20 °C): ~ 750 g/l
- Melting point: 105 °C (anhydrous substance)
- Flash pt. 180 °C
- LD 50 (oral, rat): 2480 mg/kg (anhydrous substance)
- EC-Index-No.: 016-030-00-2

- ADR: 8 C4 III UN 2585
- IMDG: 8 III UN 2585
- IATA/CAO: 8 III UN 2585
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2904 10 00 90
- Applications: analytical chemistry, laboratory reagent, synthesis of organic products.

## AC3120 Toluene-4-sulfonic acid monohydrate, synthesis grade

assay (acidimetric, on dried sample) . . . . . min. 98 %  
 identity (IR-spectrum) . . . . . passes test  
 residue on ignition . . . . . max. 0,2 %  
 water (K.F.) . . . . . 9,5 - 12 %

Art. No.	Volume	Container
AC31200250	250 g	
AC31201000	1 kg	
AC3120005P	5 kg	

## AC3123 Toluene-4-sulfonic acid monohydrate, reagent grade

assay (acidimetric, on dried sample) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 TLC test . . . . . passes test

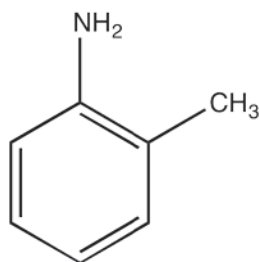
sulfates (SO<sub>4</sub>) . . . . . max. 0,3 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,01 %  
 residue on ignition . . . . . max. 0,1 %

water (K.F.) . . . . . 9,0 - 13,0 %

Art. No.	Volume	Container
AC31230250	250 g	

## o-Toluidine

## T00120 o-Toluidine, synthesis grade



- Synonyms: 2-Aminotoluene, 2-Methylaniline
- C<sub>7</sub>H<sub>9</sub>N
- M = 107,16 g/mol
- CAS [95-53-4]
- EINECS-No.: 202-429-0
- Density: 0,99 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 15 g/l
- Melting point: < -15 °C
- Boiling point: 200 °C
- Flash pt. 85 °C
- Ignition temp.: 480 °C
- Vapour pressure: (20 °C) 0,18 hPa
- LD 50 (oral, rat): 670 mg/kg
- EC-Index-No.: 612-091-00-X
- ADR: 6.1 T1 II UN 1708
- IMDG: 6.1 II UN 1708
- IATA/CAO: 6.1 II UN 1708
- GHS-signal word: Danger

- GHS-H sentences: H301 - H331 - H350 - H400 - H319
- GHS-P sentences: P261 - P280 - P301 + P310 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2921 43 00 90
- Applications: laboratory reagent, synthesis of organic products, manufacture of dyes, in the textile industry.

**Specifications:**

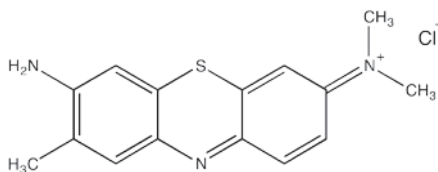
assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,998 - 1,000  
 residue on ignition . . . . . max. 0,01 %  
 water (K.F.) . . . . . max. 0,2 %

Art. No.	Volume	Container
T001201000	1 l	

# Toluid

## Toluidine blue, C.I. 52040

### AZ0235 Toluidine blue, C.I. 52040, for microscopy



- Synonyms: Basic blue 17, Toluidine blue O
- $C_{15}H_{16}ClN_2S$
- $M = 305,83 \text{ g/mol}$
- CAS [92-31-9]
- EINECS-No.: 202-146-2
- Solub. in water: (25 °C): 30 g/l
- Tariff number: 3204 13 00 90
- Applications: indicator (microscopy), manufacture of dyes.

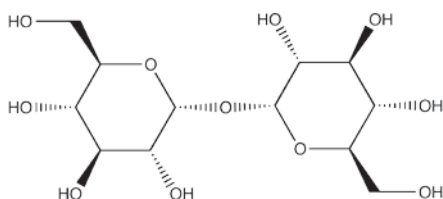
#### Specifications:

Absorption maximum  $\lambda$  (in  $H_2O$ ) . . . . . 630 - 635 nm  
Absorptivity (A1%/1 cm;  $\lambda$  max.) . . . . . 750 - 1000 related substances (TLC) . . . . . passes test  
loss on drying (135 °C) . . . . . max. 10 %

Art. No.	Volume	Container
AZ02350005	5 g	
AZ02350025	25 g	
AZ02351000	1 kg	

## D-Trehalose

### TR0030 D-Trehalose, for bacteriology



- Synonyms: Mycose,  $\alpha$ -D-Glucopyranosyl- $\alpha$ -D-glucopyranoside
- $C_{12}H_{22}O_{11}$
- $M = 342,30 \text{ g/mol}$
- CAS [99-20-7]
- EINECS-No.: 202-739-6
- Solub. in water: (20 °C): 100 g/l
- Melting point: 203 °C
- Tariff number: 2940 00 00 80
- Applications: in biochemistry, for microbiology.

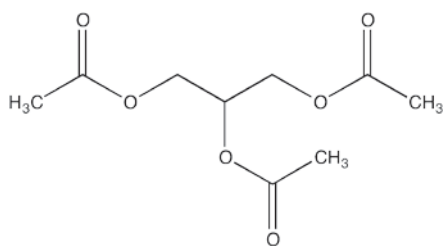
#### Specifications:

glucose (C.C.F.) . . . . . max. 0,1 %  
identity (IR-spectrum) . . . . . passes test  
specific rotation ( $[\alpha]_{20}^{20} / D, c = 5, H_2O$ ) referred to dried sample) . . . . . + 197 ° - + 200 °  
heavy metals (as Pb) . . . . . max. 0,001 %  
water (K.F.) . . . . . max. 1 %

Art. No.	Volume	Container
TR00300005	5 g	

## Triacetin

### TR0080 Triacetin, 99%, extra pure



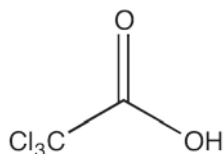
- Synonyms: Glycerol triacetate
- $C_9H_{14}O_6$
- $M = 218,23 \text{ g/mol}$
- CAS [102-76-1]
- EINECS-No.: 203-051-9
- Density: 1,16 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 64 g/l
- Melting point: 4 °C
- Boiling point: 258 °C
- Flash pt. 138 °C
- Ignition temp.: 433 °C
- Vapour pressure: (20 °C) < 0,1 hPa
- LD 50 (oral, rat): 3000 mg/kg
- Tariff number: 2915 39 30 00
- Applications: in biochemistry, solvents, perfumery, photography, cosmetics.

#### Specifications:

assay (acidimetric, on dried sample) . . . . . 97 - 100,5 %  
identity (IR-spectrum) . . . . . passes test  
density (20°/20°) . . . . . 1,159 - 1,164  
refractive index  $n_{20} / D$  . . . . . 1,429 - 1,432  
appearance of solution . . . . . passes test  
acidity . . . . . passes test  
residue on ignition . . . . . max. 0,005 %  
water (K.F.) . . . . . max. 0,2 %

Art. No.	Volume	Container
TR00801000	1 l	

## Trichloroacetic acid



- Synonyms: TCA
- $CCl_3COOH$
- $M = 163,39 \text{ g/mol}$
- CAS [76-03-9]
- EINECS-No.: 200-927-2
- Solub. in water: (20 °C): soluble
- Melting point: 54 - 58 °C
- Boiling point: 197 °C
- Vapour pressure: (20 °C) 1 hPa
- LD 50 (oral, rat): 3320 mg/kg
- EC-Index-No.: 607-004-00-7

- ADR: 8 C4 II UN 1839
- IMDG: 8 II UN 1839
- IATA/ICAO: 8 II UN 1839
- GHS-signal word: Danger
- GHS-H sentences: H314 - H410
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 40 00 90
- Applications: analytical chemistry, laboratory reagent, herbicide, precipitant for: proteins, fixative in microscopy.

### AC3130 Trichloroacetic acid, extra pure, Pharmpur®, Ph Eur, BP

assay (acidimetric) . . . . . 98 - 100,5 %  
identity (IR-spectrum) . . . . . passes test  
appearance of solution . . . . . passes test  
insoluble in water . . . . . max. 0,01 %  
chlorides (Cl) . . . . . max. 0,01 %

residue on ignition . . . . . max. 0,1 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC31300250	250 g	
AC31301000	1 kg	
AC3130005P	5 kg	

### AC3132 Trichloroacetic acid, reagent grade, ACS

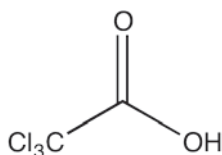
assay (acidimetric) . . . . . min. 99,5 %  
identity (IR-spectrum) . . . . . passes test  
appearance of solution . . . . . passes test  
insoluble in water . . . . . max. 0,003 %  
chlorides (Cl) . . . . . max. 0,002 %  
nitrates ( $NO_3$ ) . . . . . max. 0,002 %  
phosphates (as  $PO_4$ ) . . . . . max. 0,0005 %  
sulfates ( $SO_4$ ) . . . . . max. 0,02 %

copper (Cu) . . . . . max. 0,0005 %  
heavy metals (as Pb) . . . . . max. 0,002 %  
iron (Fe) . . . . . max. 0,001 %  
lead (Pb) . . . . . max. 0,002 %  
acetaldehyde ( $CH_3CHO$ ) . . . . . max. 0,005 %  
substances reducing  $KMnO_4$  . . . . . passes test  
substances darkened by  $H_2SO_4$  . . . . . passes test  
residue on ignition . . . . . max. 0,03 %

Art. No.	Volume	Container
AC31320100	100 g	
AC31320250	250 g	
AC31321000	1 kg	
AC3132005P	5 kg	
AC3132025P	25 kg	

## Trichloroacetic acid, solution 20%

## AC3134 Trichloroacetic acid, solution 20% w/v, extra pure



- Synonyms: TCA
- $\text{CCl}_3\text{COOH}$
- $M = 163,39 \text{ g/mol}$
- CAS [76-03-9]
- EINECS-No.: 200-927-2
- Density:  $1,10 \text{ g/cm}^3$
- EC-Index-No.: 607-004-00-7
- ADR: 8 C3 II UN 2564
- IMDG: 8 II UN 2564
- IATA/ICAO: 8 II UN 2564
- GHS-signal word: Danger
- GHS-H sentences: H314 - H335 - H411
- GHS-P sentences: P260 - P303 + P361 + P533 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 40 00 90

- Applications: analytical chemistry, laboratory reagent, herbicide, precipitant for: proteins, fixative in microscopy.

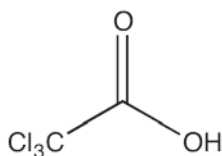
**Specifications:**

assay (acidimetric) . . . . .	approx. 20 %
chlorides (Cl) . . . . .	max. 0,005 %
nitrates ( $\text{NO}_3$ ) . . . . .	max. 0,02 %
sulfates ( $\text{SO}_4$ ) . . . . .	max. 0,05 %
copper (Cu) . . . . .	max. 0,003 %
iron (Fe) . . . . .	max. 0,002 %
lead (Pb) . . . . .	max. 0,003 %
nickel (Ni) . . . . .	max. 0,003 %

Art. No.	Volume	Container
AC31341000	1 l	Ø

## Trichloroacetic acid, solution 3%

## AC3133 Trichloroacetic acid, solution 3% w/v, extra pure



- Synonyms: TCA
- $\text{CCl}_3\text{COOH}$
- $M = 163,39 \text{ g/mol}$
- CAS [76-03-9]
- EINECS-No.: 200-927-2
- Density:  $1,012 \text{ g/cm}^3$
- EC-Index-No.: 607-004-00-7
- ADR: 8 C3 III UN 2564
- IMDG: 8 III UN 2564
- IATA/ICAO: 8 III UN 2564
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H335 - H411
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2915 40 00 90

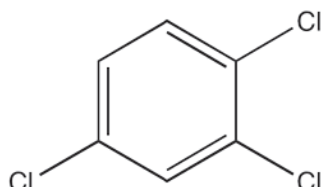
- Applications: analytical chemistry, laboratory reagent, herbicide, precipitant for: proteins.

**Specifications:**

assay (acidimetric) . . . . .	approx. 3 %
chlorides (Cl) . . . . .	max. 0,003 %
nitrates ( $\text{NO}_3$ ) . . . . .	max. 0,02 %
sulfates ( $\text{SO}_4$ ) . . . . .	max. 0,05 %
copper (Cu) . . . . .	max. 0,003 %
iron (Fe) . . . . .	max. 0,002 %
lead (Pb) . . . . .	max. 0,003 %
nickel (Ni) . . . . .	max. 0,003 %

Art. No.	Volume	Container
AC31331000	1 l	Ø

## 1,2,4-Trichlorobenzene



- $\text{C}_6\text{H}_3\text{Cl}_3$
- $M = 181,45 \text{ g/mol}$
- CAS [120-82-1]
- EINECS-No.: 204-428-0
- Density:  $1,45 \text{ g/cm}^3$
- Solub. in water: (20 °C): 0,049 g/l
- Melting point: 17 °C
- Boiling point: 213,5 °C
- Flash pt. 99 °C
- Ignition temp.: 571 °C
- Vapour pressure: (20 °C) 1,3 hPa
- LD 50 (oral, rat): 756 mg/kg

- ADR: 6.1 T1 III UN 2321
- IMDG: 6.1 III UN 2321
- IATA/ICAO: 6.1 III UN 2321
- GHS-signal word: Warning
- GHS-H sentences: H410 - H302 - H315
- GHS-P sentences: P280 - P273 - P321 - P362 - P301 + P312 - P501a
- Tariff number: 2903 99 99 90
- Applications: analytical chemistry, chromatography, synthesis of organic products.
- Appearance: Colourless liquid

## TR0119 1,2,4-Trichlorobenzene, reagent grade



assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 density (20°/4°) . . . . .1,453 - 1,455  
 colour (Hazen) . . . . .max. 10

acidity . . . . .max. 0,0002 meq/g  
 alkalinity . . . . .max. 0,0002 meq/g  
 residue on ignition . . . . .max. 0,0005 %  
 water (K.F.) . . . . .max. 0,015 %

Art. No.	Volume	Container
TR01191000	1 l	Ø

## TR0120 1,2,4-Trichlorobenzene, HPLC grade



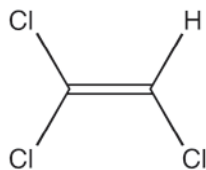
assay (G.C.) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 acidity . . . . .max. 0,0002 meq/g  
 alkalinity . . . . .max. 0,0002 meq/g  
 residue on ignition . . . . .max. 0,0003 %  
 water (K.F.) . . . . .max. 0,01 %

min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength: T(%) A (AU)  
 315 nm. . . . .50 % 0,301 AU  
 320 nm. . . . .80 % 0,097 AU  
 385 nm. . . . .98 % 0,009 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
TR01201000	1 l	Ø
TR01202500	2,5 l	Ø

# Trichl

## Trichloroethene



- Synonyms: Ethinyl trichloride, Trichloroethylene, Ethylene trichloride
- $C_2HCl_3$
- $M = 131,79$  g/mol
- CAS [79-01-6]
- EINECS-No.: 201-167-4
- Density: 1,46 g/cm<sup>3</sup>
- Solub. in water: (20 °C): almost non-miscible
- Melting point: -86 °C
- Boiling point: 87 °C
- Ignition temp.: 410 °C
- Vapour pressure: (20 °C) 77 hPa
- Dielectric const.: (16 °C) 3,4
- LD 50 (oral, rat): 4920 mg/kg

- EC-Index-No.: 602-027-00-9
- ADR: 6.1 T1 III UN 1710
- IMDG: 6.1 III UN 1710
- IATA/ICAO: 6.1 III UN 1710
- GHS-signal word: Danger
- GHS-H sentences: H350 - H341 - H315 - H319 - H336 - H412
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P405 - P501a
- Tariff number: 2903 22 00 00
- Applications: analytical chemistry, solvents, chromatography, synthesis of organic products, in the textile industry.

### TR0149 Trichloroethene, synthesis grade, stabilized with ethanol

assay (G.C.) . . . . .	min. 98,5 %	residue on evaporation . . . . .	max. 0,003 %
identity (IR-spectrum) . . . . .	.passes test	water (K.F.) . . . . .	max. 0,02 %
density (20°/20°) . . . . .	1,458 - 1,468		
ethanol (G.C.) . . . . .	max. 0,5 %		

Art. No.	Volume	Container
TR0149005P	5 l	
TR0149025A	25 l	

### TR0150 Trichloroethene, extra pure, stabilized with ethanol

assay (G.C.) . . . . .	min. 99,5 %	residue on evaporation . . . . .	max. 0,001 %
identity (IR-spectrum) . . . . .	.passes test	water (K.F.) . . . . .	max. 0,01 %
density (20°/20°) . . . . .	1,458 - 1,468		
free alkali (as NH <sub>3</sub> ) . . . . .	max. 0,001 %		
ethanol (G.C.) . . . . .	max. 0,5 %		
chlorides (Cl) . . . . .	max. 0,0001 %		

Art. No.	Volume	Container
TR01501000	1 l	
TR01502500	2,5 l	
TR0150005P	5 l	
TR0150025A	25 l	

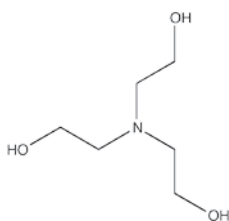
### TR0151 Trichloroethene, reagent grade, ACS, stabilized with ethanol

assay (G.C.) . . . . .	min. 99,5 %	cadmium (Cd) . . . . .	max. 0,000005 %
identity (IR-spectrum) . . . . .	.passes test	calcium (Ca) . . . . .	max. 0,00005 %
density (20°/20°) . . . . .	1,458 - 1,468	chromium (Cr) . . . . .	max. 0,000002 %
colour (Hazen) . . . . .	max. 10	cobalt (Co) . . . . .	max. 0,000002 %
acidity . . . . .	max. 0,0001 meq/g	copper (Cu) . . . . .	max. 0,000002 %
alkalinity . . . . .	max. 0,0003 meq/g	heavy metals (as Pb) . . . . .	max. 0,0001 %
ethanol (G.C.) . . . . .	max. 0,5 %	iron (Fe) . . . . .	max. 0,00001 %
free halogens . . . . .	.passes test	lead (Pb) . . . . .	max. 0,00001 %
aluminium (Al) . . . . .	max. 0,00005 %	magnesium (Mg) . . . . .	max. 0,00001 %
barium (Ba) . . . . .	max. 0,00001 %	manganese (Mn) . . . . .	max. 0,000002 %
boron (B) . . . . .	max. 0,000002 %	nickel (Ni) . . . . .	max. 0,000002 %

tin (Sn) . . . . .	max. 0,00001 %
zinc (Zn) . . . . .	max. 0,00001 %
residue on evaporation . . . . .	max. 0,0005 %
water (K.F.) . . . . .	max. 0,005 %

Art. No.	Volume	Container
TR01511000	1 l	
TR01512500	2,5 l	

## Triethanolamine



- Synonyms: Tris (2-hydroxyethyl)amine, 2,2',2''-Trihydroxytriethylamine, TEA
- $C_6H_{15}NO_3$
- $M = 149,19$  g/mol
- CAS [102-71-6]
- EINECS-No.: 203-049-8
- Density: 1,12 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 21,2 °C
- Boiling point: (hPa) 208 °C

- Flash pt. 190 °C
- Ignition temp.: 325 °C
- Vapour pressure: (20 °C) 0,01 hPa
- LD 50 (oral, rat): > 5000 mg/kg
- Tariff number: 2922 13 10 00
- Applications: corrosion inhibitor, cosmetics, emulsifier, in the textile industry, herbicide, manufacturing of synthetic resins, in building materials, manufacture of dyes, in lubricant compositions, in the pharmaceuticals industry, in pharma industry.

### TR0200 Triethanolamine, synthesis grade

assay (acidimetric) . . . . .	min. 98 %	residue on ignition . . . . .	max. 0,1 %
identity (IR-spectrum) . . . . .	.passes test	water (K.F.) . . . . .	max. 0,3 %
density (25°/25°) . . . . .	1,120 - 1,128		
mono + diethanolamine (G.C.) . . . . .	max. 2 %		

Art. No.	Volume	Container
TR02001000	1 l	
TR02002500	2,5 l	

### TR0202 Triethanolamine, extra pure, Pharmpur®, Ph Eur, NF

assay (acidimetric, on dried sample) . . . . .	99 - 103 %	related substances . . . . .	.passes test
identification . . . . .	.passes test	impurity C . . . . .	max. 24 ppb
density (25°/25°) . . . . .	1,120 - 1,128	residue on ignition . . . . .	max. 0,05 %
n <sub>20°/D</sub> . . . . .	1,481 - 1,486	water (K.F.) . . . . .	max. 0,5 %
appearance of solution . . . . .	.passes test	Residual solvents are analysed according to guideline CPMP/ICH/283/95.	
heavy metals (as Pb) . . . . .	max. 0,001 %		

Art. No.	Volume	Container
TR02021000	1 l	
TR0202025P	25 l	

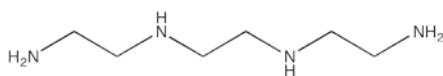




# Trieth

## Triethylenetetramine

### TR0260 Triethylenetetramine, synthesis grade



- Synonyms: N,N'-Bis(2-aminoethyl)-1,2-ethanediamine
- $C_6H_{18}N_4$
- $M = 146,24$  g/mol
- CAS [112-24-3]
- EINECS-No.: 203-950-6
- Density: 0,98 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 12 °C
- Boiling point: (13 hPa) 144 - 147 °C
- Flash pt. 129 °C
- Ignition temp.: 335 °C
- Vapour pressure: (20 °C) < 0,01 hPa
- Refraction index: (n 20 °C/D) 1,4971
- LD 50 (oral, rat): 2500 mg/kg
- EC-Index-No.: 612-059-00-5
- ADR: 8 C7 II UN 2259
- IMDG: 8 II UN 2259
- IATA/ICAO: 8 II UN 2259

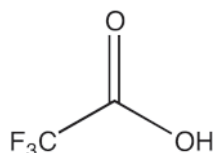
- GHS-signal word: Danger
- GHS-H sentences: H314 - H312 - H317 - H412
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2921 29 00 90
- Applications: synthesis of organic products, manufacturing of synthetic resins, in lubricant compositions, analytical chemistry, for the detection of: copper and nickel.

#### Specifications:

assay (G.C.) .....min. 60 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....0,977 - 0,982

Art. No.	Volume	Container
TR02600250	250 ml	0

## Trifluoroacetic acid



- Synonyms: Perfluoroacetic acid, TFA
- $CF_3COOH$
- $M = 114,02$  g/mol
- CAS [76-05-1]
- EINECS-No.: 200-929-3
- Density: 1,48 g/cm<sup>3</sup>
- Solub. in water: (20 °C): freely miscible
- Melting point: -15 °C
- Boiling point: 72 °C
- Vapour pressure: (20 °C) 11 hPa
- Dielectric const.: (25 °C) 42,1

- EC-Index-No.: 607-091-00-1
- ADR: 8 C3 I UN 2699
- IMDG: 8 I UN 2699
- IATA/ICAO: 8 I UN 2699
- GHS-signal word: Danger
- GHS-H sentences: H314 - H332 - H412
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2915 90 70 90
- Applications: analytical chemistry, for nuclear magnetic resonance spectroscopy.

### AC3141 Trifluoroacetic acid, synthesis grade



assay (acidimetric) .....min. 99,5 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....1,487 - 1,489  
 residue on evaporation .....max. 0,01 %  
 water (K.F.) .....max. 0,3 %

Art. No.	Volume	Container
AC31410100	100 ml	0
AC31411000	1 l	0
AC3141025A	25 l	0

### AC3143 Trifluoroacetic acid, buffer substance, HPLC grade



assay (acidimetric) .....min. 99,5 %  
 gradient elution .....passes test  
 water (K.F.) .....max. 0,05 %  
 max. absorbance in a 1,0 cm cell at wavelength: absorbance:  
 260 nm .....0,9 AU  
 270 nm .....0,1 AU

280 nm .....0,05 AU  
 290 nm .....0,04 AU  
 300 nm .....0,03 AU  
 320 nm .....0,025 AU

Art. No.	Volume	Container
AC31430100	100 ml	0

### AC3144 Trifluoroacetic acid, eluent additive for LC-MS



assay (acidimetric) .....min. 99 %  
 aluminium (Al) .....max. 0,000005 %  
 barium (Ba) .....max. 0,000005 %  
 cadmium (Cd) .....max. 0,000005 %  
 calcium (Ca) .....max. 0,00002 %  
 chromium (Cr) .....max. 0,000005 %  
 cobalt (Co) .....max. 0,000002 %  
 copper (Cu) .....max. 0,000002 %  
 iron (Fe) .....max. 0,00002 %  
 lead (Pb) .....max. 0,00001 %  
 lithium (Li) .....max. 0,000002 %  
 magnesium (Mg) .....max. 0,00005 %  
 manganese (Mn) .....max. 0,000005 %  
 molybdenum (Mo) .....max. 0,000002 %  
 nickel (Ni) .....max. 0,000005 %  
 potassium (K) .....max. 0,00001 %  
 sodium (Na) .....max. 0,00005 %  
 strontium (Sr) .....max. 0,000002 %  
 thallium (Tl) .....max. 0,000005 %  
 zinc (Zn) .....max. 0,00001 %  
 water (K.F.) .....max. 0,05 %  
 suitability for use in LC-MS .....passes test

max. absorbance in a 1,0 cm cell at wavelength: A (AU)  
 260 nm .....0,90 AU  
 270 nm .....0,10 AU  
 280 nm .....0,05 AU  
 290 nm .....0,04 AU  
 300 nm .....0,03 AU  
 320 nm .....0,025 AU

Art. No.	Volume	Container
AC31440050	50 ml	0

### AC3142 Trifluoroacetic acid, peptide synthesis grade

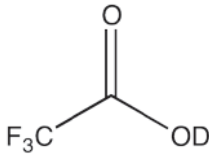


assay (acidimetric) .....min. 99,5 %  
 identity (IR-spectrum) .....passes test  
 density (20°/4°) .....1,487 - 1,489  
 chlorides (Cl) .....max. 0,001 %  
 fluorides (F) .....max. 0,005 %  
 sulfates (SO<sub>4</sub>) .....max. 0,001 %  
 residue on ignition (as SO<sub>4</sub>) .....max. 0,001 %  
 water (K.F.) .....max. 0,05 %

Art. No.	Volume	Container
AC31420100	100 ml	0
AC31421000	1 l	0

Trifluoroacetic acid-d

AC3140 Trifluoroacetic acid-d, deuteration degree min. 99,5%, NMR spectroscopy grade, Spectrosol®



- CF<sub>3</sub>COOD
- M = 115,03 g/mol
- CAS [599-00-8]
- EINECS-No.: 209-961-2
- Density: 1,50 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: -15 °C
- Boiling point: 71 °C
- Vapour pressure: (20 °C) 11 hPa
- ADR: 8 C3 I UN 2699
- IMDG: 8 I UN 2699
- IATA/ICAO: 8 I UN 2699
- GHS-signal word: Danger
- GHS-H sentences: H314 - H332

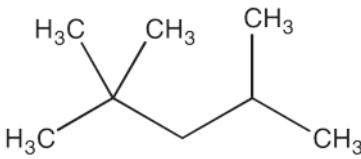
- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2845 90 10 00
- Applications: for protein synthesizing, synthesis of organic products.

Specifications:

deuteration degree . . . . . min. 99,5 %  
 water (K.F., H<sub>2</sub>O + D<sub>2</sub>O) . . . . . max. 0,05 %  
 performance test  
 (NMR-spectrum) . . . . . passes test

Art. No.	Volume	Container
AC3140.750	x10x0,75ml	↓

2,2,4-Trimethylpentane



- Synonyms: Isooctane, Isobutyltrimethylmethane, iso-Octane
- C<sub>8</sub>H<sub>18</sub>
- M = 114,26 g/mol
- CAS [540-84-1]
- EINECS-No.: 208-759-1
- Density: 0,69 g/cm<sup>3</sup>
- Solub. in water: (25 °C): 0,56 mg/l
- Melting point: -107 °C
- Boiling point: 99 °C
- Flash pt. -12 °C
- Ignition temp.: 410 °C
- Vapour pressure: (20 °C) 51 hPa
- Dielectric const.: (20 °C) 1,9

- LD 50 (oral, rat): > 2000 mg/kg
- EC-Index-No.: 601-009-00-8
- ADR: 3 F1 II UN 1262
- IMDG: 3 II UN 1262
- IATA/ICAO: 3 II UN 1262
- GHS-signal word: Danger
- GHS-H sentences: H225 - H304 - H410 - H315 - H336
- GHS-P sentences: P210 - P241 - P301 + P310 - P303 + P361 + P353 - P405 - P501a
- Tariff number: 2901 10 00 00
- Applications: analytical chemistry, solvent for fat and oil extractions; in determining octane numbers of fuels.

IS0153 2,2,4-Trimethylpentane, extra pure



assay (G.C.) . . . . . min. 99 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,691 - 0,693  
 acidity. . . . . max. 0,001 meq/g  
 copper (Cu) . . . . . max. 0,00002 %  
 iron (Fe) . . . . . max. 0,00005 %

lead (Pb) . . . . . max. 0,00002 %  
 nickel (Ni) . . . . . max. 0,00002 %  
 sulfur compounds (as S) . . . . . max. 0,002 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,02 %

Art. No.	Volume	Container
IS01531000	1 l	0
IS01532500	2,5 l	0
IS0153005P	5 l	0
IS0153025A	25 l	0

IS0154 2,2,4-Trimethylpentane, reagent grade, ACS, Reag. Ph Eur



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/20°) . . . . . 0,691 - 0,696  
 boiling range (min. 95 %) . . . . . 98 - 100 °C  
 colour (Hazen) . . . . . max. 10  
 refractive index n<sub>20</sub>/D . . . . . 1,391 - 1,393  
 acidity. . . . . max. 0,0003 meq/g  
 aluminium (Al) . . . . . max. 0,00005 %  
 barium (Ba) . . . . . max. 0,00001 %  
 boron (B) . . . . . max. 0,000002 %  
 cadmium (Cd) . . . . . max. 0,000005 %

calcium (Ca) . . . . . max. 0,00005 %  
 chromium (Cr) . . . . . max. 0,000002 %  
 cobalt (Co) . . . . . max. 0,000002 %  
 copper (Cu) . . . . . max. 0,000002 %  
 iron (Fe) . . . . . max. 0,00001 %  
 lead (Pb) . . . . . max. 0,00001 %  
 magnesium (Mg) . . . . . max. 0,00001 %  
 manganese (Mn) . . . . . max. 0,000002 %  
 nickel (Ni) . . . . . max. 0,000002 %  
 tin (Sn) . . . . . max. 0,00001 %  
 zinc (Zn) . . . . . max. 0,00001 %  
 sulfur compounds (as S) . . . . . max. 0,005 %

substances darkened by H<sub>2</sub>SO<sub>4</sub> . . . . . passes test  
 min. transmission in a 1 cm cell  
 between 250 and 420 nm . . . . . 98 %  
 residue on evaporation . . . . . max. 0,001 %  
 water (K.F.) . . . . . max. 0,01 %

Art. No.	Volume	Container
IS01541000	1 l	0
IS01542500	2,5 l	0

IS0156 2,2,4-Trimethylpentane, HPLC grade



assay (G.C.) . . . . . min. 99,5 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,691 - 0,693  
 acidity. . . . . max. 0,0002 meq/g  
 alkalinity . . . . . max. 0,0002 meq/g  
 residue on evaporation . . . . . max. 0,0002 %  
 water (K.F.) . . . . . max. 0,01 %

min. transmission/max. absorbance in a 1,0 cm cell at  
 wavelength:  
 T(%) A (AU)  
 210 nm . . . . . 50 % 0,301 AU  
 220 nm . . . . . 80 % 0,097 AU  
 245 nm . . . . . 98 % 0,009 AU  
 Microfiltered through membranes of pore diameter  
 0,22 µm

Art. No.	Volume	Container
IS01561000	1 l	0
IS01562500	2,5 l	0

IS0157 2,2,4-Trimethylpentane, for GC residue analysis



assay (G.C.) . . . . . min. 99,8 %  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 0,691 - 0,693  
 residue on evaporation . . . . . max. 0,0001 %  
 water (K.F.) . . . . . max. 0,01 %

Suitable for organohalogenated pesticide and dioxins,  
 furans and PCBs residue analysis. ECD, from 1,2,4-tri-  
 chlorobenzene to decachlorobiphenyl, no peaks are  
 obtained greater than 3 pg/ml as lindane. No peaks  
 are obtained in vicinity of 2,4,5-trichlorobiphenyl. Suita-  
 ble for highly volatile halogenated hydrocarbons trace  
 analysis. ECD, from dichloromethane to 1,2,4-trichlo-  
 robenzene, no peaks are obtained greater than 1 ng/  
 ml as tetrachloromethane.

Suitable for pesticide and polycyclic aromatic  
 hydrocarbons residue analysis. FID, from 1-octanol  
 to 1-tetradecanol, no peaks are obtained greater than  
 5 ng/ml as 1-tetradecanol. No peaks are obtained in  
 vicinity of pyrene.

Art. No.	Volume	Container
IS01571000	1 l	0
IS01572500	2,5 l	0

# Trimet

## ISO161 2,2,4-Trimethylpentane, 99,5%, anhydrous (max. 0,003% H<sub>2</sub>O)



assay (G.C.)	min. 99,5 %
identity (IR-spectrum)	passes test
density (20°/20°)	0,691 - 0,696
colour (Hazen)	max. 10
acidity	max. 0,0003 meq/g
aluminium (Al)	max. 0,00005 %
barium (Ba)	max. 0,00001 %
boron (B)	max. 0,000002 %
cadmium (Cd)	max. 0,000005 %
calcium (Ca)	max. 0,00005 %

chromium (Cr)	max. 0,000002 %
cobalt (Co)	max. 0,000002 %
copper (Cu)	max. 0,000002 %
iron (Fe)	max. 0,00001 %
lead (Pb)	max. 0,00001 %
magnesium (Mg)	max. 0,00001 %
manganese (Mn)	max. 0,000002 %
nickel (Ni)	max. 0,000002 %
tin (Sn)	max. 0,00001 %
zinc (Zn)	max. 0,00001 %

sulfur compounds (as S)	max. 0,005 %
substances darkened by H <sub>2</sub> SO <sub>4</sub>	passes test
residue on evaporation	max. 0,0005 %
water (K.F.)	max. 0,003 %

Art. No.	Volume	Container
ISO1610100	100 ml	
ISO1611000	1 l	

## ISO160 2,2,4-Trimethylpentane, ASTM



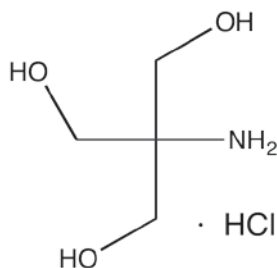
assay (G.C.)	min. 99,75 %
identity (IR-spectrum)	passes test
density (20°/4°)	0,691 - 0,693
n-heptane (G.C.)	max. 0,1 %

lead (Pb)	max. 0,002 g/gal
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Art. No.	Volume	Container
ISO160025A	25 l	
ISO160200L	200 l	

## TRIS-HCl

### TR0425 Tris-HCl, molecular biology grade



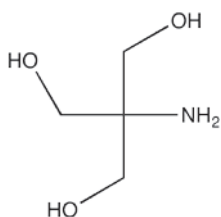
- Synonyms: Tris(hydroxymethyl)aminomethane hydrochloride
- C<sub>4</sub>H<sub>11</sub>NO<sub>3</sub>·HCl
- M = 157,60 g/mol
- CAS [1185-53-1]
- EINECS-No.: 214-684-5
- Solub. in water: (20 °C): freely soluble
- Melting point: 150 °C
- LD 50 (oral, rat): 5900 mg/kg (free substance)
- Tariff number: 2922 19 80 90
- Applications: analytical chemistry, for biology, in buffer solutions.

absorbance of an aqueous solution  
10 % in a 1 cm cell at 260 nm . . . . . max. 0,05 AU  
absorbance of an aqueous solution  
10 % in a 1 cm cell at 280 nm . . . . . max. 0,05 AU  
heavy metals (as Pb) . . . . . max. 0,0002 %  
water (K.F.) . . . . . max. 0,5 %  
DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
TR04250100	100 g	
TR04251000	1 kg	
TR0425005P	5 kg	

**Specifications:**  
assay (argentometric, on dried sample) . . . . . min. 99 %

## Tris-(hydroxymethyl)-aminomethane



- Synonyms: 2-Amino-2-(hydroxymethyl)-1,3-propanediol, Tromethamine, THAM, TRIS buffer
- C<sub>4</sub>H<sub>11</sub>NO<sub>3</sub>
- M = 121,14 g/mol
- CAS [77-86-1]
- EINECS-No.: 201-064-4
- Solub. in water: (20 °C): 800 g/l
- Melting point: 172 - 173 °C
- Boiling point: (13,3 hPa) 219 - 220 °C
- LD 50 (oral, rat): 5900 mg/kg

- GHS-signal word: Warning
- GHS-H sentences: H315 - H319
- GHS-P sentences: P280 - P305 + P351 + P338 - P321 - P362 - P332 + P313 - P337 + P313
- Tariff number: 2922 19 85 90
- Applications: analytical chemistry, in buffer solutions, in biochemistry, laboratory reagent, in the pharmaceuticals industry, emulsifier (cosmetics), for the synthesis of: tensoactives.

## TR0422 Tris-(hydroxymethyl)-aminomethane, extra pure, Pharmpur®, Ph Eur, BP



assay (acidimetric, on dried sample)	99 - 100,5 %
identity (IR-spectrum)	passes test
pH (5 %, H <sub>2</sub> O)	10,0 - 11,5
appearance of solution	clear and colourless
chlorides (Cl)	max. 0,01 %
heavy metals (as Pb)	max. 0,001 %

iron (Fe)	max. 0,001 %
related substances	passes test
residue on ignition	max. 0,1 %
loss on drying (105 °C)	max. 0,5 %
Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
TR04220250	250 g	
TR04221000	1 kg	
TR0422005P	5 kg	
TR0422025P	25 kg	

## TR0423 Tris-(hydroxymethyl)-aminomethane, buffer substance, reagent grade, ACS, Reag. Ph Eur



assay (acidimetric, on dried sample)	99,8 - 100,1 %
identity	passes test
appearance of solution	clear
insoluble in water	max. 0,003 %
pH (5 %, H <sub>2</sub> O)	10,3 - 10,9
chlorides (Cl)	max. 0,0005 %
sulfates (SO <sub>4</sub> )	max. 0,0005 %
arsenic (As)	max. 0,00002 %
cadmium (Cd)	max. 0,00001 %
calcium (Ca)	max. 0,0001 %
copper (Cu)	max. 0,00001 %

heavy metals (as Pb)	max. 0,0005%
iron (Fe)	max. 0,00002 %
lead (Pb)	max. 0,00001 %
magnesium (Mg)	max. 0,00003 %
potassium (K)	max. 0,00003 %
sodium (Na)	max. 0,0001 %
zinc (Zn)	max. 0,00001 %
related substances (TLC)	passes test
loss on drying (105 °C)	max. 0,5 %
residue on ignition	max. 0,01 %
water (K.F.)	max. 0,1 %

absorbance (40 %, 1 cm, H<sub>2</sub>O): at wavelength :  
290 nm . . . . . max. 0,2 AU

Art. No.	Volume	Container
TR04230100	100 g	
TR04230250	250 g	
TR04230500	500 g	
TR04231000	1 kg	
TR0423005P	5 kg	

## TR0427 Tris-(hydroxymethyl)-aminomethane, secondary standard for volumetric titrations, Titrasure®



assay (on dried sample)	99,8 - 100,1 %
absorbance	passes test
insoluble in water	max. 0,005 %
uncertainty	0,05%

Drying: Dry at room temperature for 24h in a vacuum desiccator over anhydrous magnesium perchlorate or equivalent  
heavy metals (as Pb) . . . . . max. 0,0005 %  
iron (Fe) . . . . . max. 0,0005 %

water (K.F.)	max. 2 %
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Art. No.	Volume	Container
TR04270080	80 g	

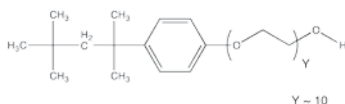
## TR0424 Tris-(hydroxymethyl)-aminomethane, molecular biology grade

assay (acidimetric, on dried sample) .....min. 99 %  
absorbance of an aqueous solution 10 % in a 1 cm cell at 260 nm .....max. 0,03 AU  
absorbance of an aqueous solution 10 % in a 1 cm cell at 280 nm .....max. 0,02 AU

heavy metals (as Pb) .....max. 0,0002 %  
water (K.F.) .....max. 0,3 %  
DNases, RNases, Proteases ..... non detected

Art. No.	Volume	Container
TR04240100	100 g	P
TR04240500	500 g	P
TR04241000	1 kg	P
TR0424005P	5 kg	P

## Triton® X-100



C34H62O11

- Synonyms: Octylphenol decaethylene glycol ether, Polyethylene glycol mono [p-(1,1,3,3-tetramethylbutyl) phenyl] ether, Deca (ethylene glycol) monoocetylphenyl ether, Octoxynol
- $C_{34}H_{62}O_x$  ( $x \sim 11$ )
- M = 646,37 g/mol
- CAS [9002-93-1]
- Density: 1,07 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Melting point: 6 °C
- Boiling point: 270 °C
- Flash pt. 251 °C

- Vapour pressure: (20 °C) < 0,01 hPa
- LD 50 (oral, rat): 707 mg/kg
- GHS-signal word: Danger
- GHS-H sentences: H318 - H302
- GHS-P sentences: P280 - P264 - P305 + P351 + P338 - P310 - P301 + P312 - P501a
- Tariff number: 3402 13 00 90
- Applications: analytical chemistry, chromatography, tensioactive substances, detergent, emulsifier, for cellular membranes solubilisation.
- Appearance: Colourless to yellowish

## TR0444 Triton® X-100, extra pure

assay (iodometric) .....min. 98 %  
identity (IR-spectrum) .....passes test  
copper (Cu) .....max. 0,003 %  
iron (Fe) .....max. 0,003 %

lead (Pb) .....max. 0,003 %  
residue on ignition .....max. 0,5 %  
nickel (Ni) .....max. 0,003 %

Art. No.	Volume	Container
TR04441000	1 l	O
TR0444005P	5 l	P

## TR0447 Triton® X-100, molecular biology grade

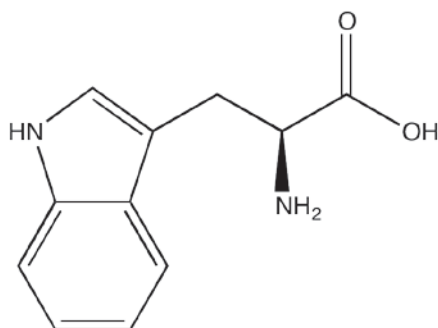
assay (iodometric) .....min. 98 %  
identity (IR-spectrum) .....passes test  
pH (1 %, H<sub>2</sub>O) .....6,0 - 8,0

DNases, RNases, Proteases ..... non detected

Art. No.	Volume	Container
TR04470050	50 ml	O

## L-Tryptophan

## TR0400 L-Tryptophan, extra pure, Pharpur®, Ph Eur, BP, USP



- Synonyms: (S)- $\alpha$ -Amino-1H-indole-3-propanoic acid
- $C_{11}H_{12}N_2O_2$
- M = 204,23 g/mol
- CAS [73-22-3]
- EINECS-No.: 200-795-6
- Solub. in water: (20 °C): 10 g/l
- Melting point: 290 °C (decomposes)
- LD 50 (oral, rat): 16000 mg/kg
- Tariff number: 2933 99 80 90
- Applications: in biochemistry, for pharmaceuticals synthesizing, for determination of proteins, in pharma industry.

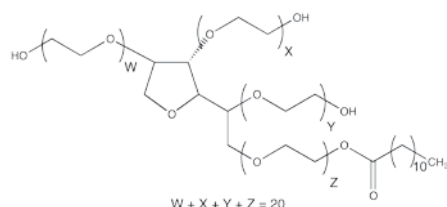
## Specifications:

assay (titr. with HClO<sub>4</sub>, referred to dried sample) .....98,5 - 101,5 %  
identity (IR-spectrum) .....passes test  
appearance of solution .....passes test  
specific rotation ( $[\alpha]_{20}^D$ , c = 5,

H<sub>2</sub>O, referred to dried sample) ..... - 29,4 ° - - 33°  
pH (1 %, H<sub>2</sub>O) .....5,5 - 7  
chlorides (Cl) .....max. 0,05 %  
sulfates (SO<sub>4</sub>) .....max. 0,03 %  
ammonium (NH<sub>4</sub>) .....max. 0,02 %  
heavy metals (as Pb) .....max. 0,0015 %  
iron (Fe) .....max. 0,003 %  
ninhydrin-positive substances .....max. 0,5 %  
1,1'- Ethylidenebstryptophan and other related sustances .....passes test  
residue on ignition .....max. 0,1 %  
loss on drying (105 °C) .....max. 0,5 %  
Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
TR04000025	25 g	O
TR04000100	100 g	O

## Tween® 20



W + X + Y + Z = 20

- Synonyms: Polysorbate
- $C_{58}H_{114}O_{26}$
- M = 1227,72 g/mol
- CAS [9005-64-5]
- EINECS-No.: 500-018-3
- Density: 1,11 g/cm<sup>3</sup>
- Solub. in water: (25 °C): 100 g/l
- Boiling point: > 100 °C
- Flash pt. > 150 °C

- Vapour pressure: (20 °C) < 1,4 hPa
- LD 50 (oral, rat): 38900 mg/kg
- Tariff number: 3402 13 00 90
- Applications: laboratory reagent, synthesis of organic products, in food industry (E 432), emulsifier, stabilizer.

## TW0020 Tween® 20, synthesis grade

identity (IR-spectrum) .....passes test  
density (20°/4°) .....1,095 - 1,105  
acidity index .....max. 3  
hydroxyl number .....96 - 108  
saponification index .....40 - 50  
residue on ignition .....max. 0,5 %

Art. No.	Volume	Container
TW00200250	250 ml	O
TW00201000	1 l	O
TW0020005P	5 l	P
TW0020025P	25 l	P

# Tween®

## TW0022 Tween® 20, molecular biology grade

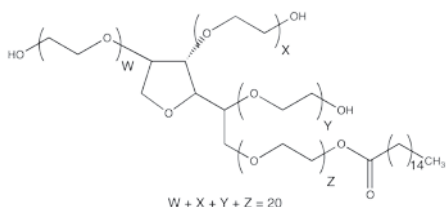
identity (IR-spectrum) . . . . . passes test  
 hydroxyl index . . . . . 96 - 108  
 saponification index . . . . . 40 - 50

DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
TW00220100	100 ml	0

## Tween® 40

### TW0040 Tween® 40, extra pure



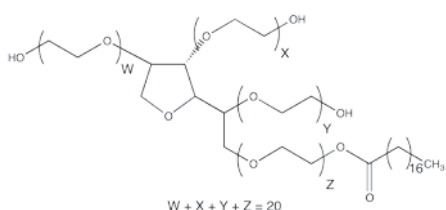
- Synonyms: Polysorbate
- C<sub>62</sub>H<sub>122</sub>O<sub>26</sub>
- CAS [9005-66-7]
- Density: 1,09 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- LD 50 (oral, rat): 38000 mg/kg
- Tariff number: 3402 13 00 90
- Applications: synthesis of organic products, emulsifier, in pesticide compositions.

**Specifications:**  
 hydroxyl number. . . . . 90-105  
 identity (IR-spectrum) . . . . . passes test  
 saponification index . . . . . 41 - 52

Art. No.	Volume	Container
TW00400250	250 ml	0
TW00401000	1 l	0

## Tween® 60

### TW0060 Tween® 60, synthesis grade



- Synonyms: Polysorbate
- C<sub>64</sub>H<sub>126</sub>O<sub>26</sub>
- CAS [9005-67-8]
- EINECS-No.: 500-020-4
- Density: 1,08 g/cm<sup>3</sup>
- Solub. in water: (25 °C): miscible
- Boiling point: > 100 °C
- Flash pt. > 149 °C
- Vapour pressure: (20 °C) 38000 mg/kg
- Tariff number: 3402 13 00 90
- Applications: laboratory reagent, synthesis of organic products, cosmetics, emulsifier, in pesticide compositions.

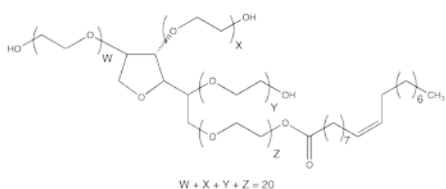
• Appearance: Viscous liquid

**Specifications:**  
 hydroxyl number. . . . . 81 - 96  
 saponification index . . . . . 45 - 55

Art. No.	Volume	Container
TW00600250	250 ml	0
TW00601000	1 l	0

## Tween® 80

### TW0080 Tween® 80, synthesis grade



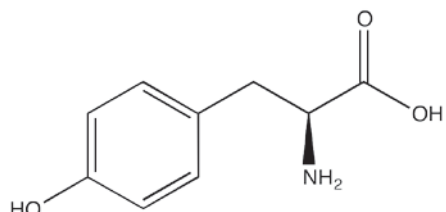
- Synonyms: Polysorbate
- C<sub>64</sub>H<sub>124</sub>O<sub>26</sub>
- CAS [9005-65-6]
- EINECS-No.: 500-019-9
- Density: (25 °C) 1,07 g/cm<sup>3</sup>
- Solub. in water: (25 °C): miscible
- Boiling point: > 100 °C
- Flash pt. > 149 °C
- Ignition temp.: > 180 °C
- Vapour pressure: (20 °C) 38000 mg/kg
- Tariff number: 3402 13 00 90
- Applications: synthesis of organic products, for pharmaceuticals synthesizing, cosmetics, emulsifier (in food industry), in pesticide compositions.

**Specifications:**  
 identity (IR-spectrum) . . . . . passes test  
 density (20°/4°) . . . . . 1,073 - 1,083  
 arsenic (As) . . . . . max. 0,0001 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 acidity index . . . . . 3  
 hydroxyl number. . . . . 65 - 80  
 iodine index . . . . . 18 - 24  
 saponification index . . . . . 45 - 55  
 residue on ignition . . . . . max. 0,2 %

Art. No.	Volume	Container
TW00800100	100 ml	0
TW00800250	250 ml	0
TW00801000	1 l	0

## L-Tyrosine

### TI0325 L-Tyrosine, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms: 3-(4-Hydroxyphenyl)-L-alanine
- C<sub>9</sub>H<sub>11</sub>NO<sub>3</sub>
- M = 181,19 g/mol
- CAS [60-18-4]
- EINECS-No.: 200-460-4
- Solub. in water: (20 °C): 0,38 g/l
- Melting point: 297 - 298 °C (decomposes)
- LD 50 (oral, rat): > 5110 mg/kg
- Tariff number: 2922 50 00 90
- Applications: in biochemistry, synthesis of organic products, for pharmaceuticals synthesizing, for determination of proteins, in pharma industry.

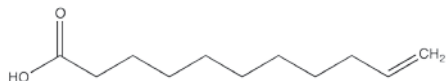
specific rotation ([α]<sub>20</sub><sup>D</sup>, c = 5, HCl 1 mol/l) . . . . . - 9,8 ° - 12,3 °  
 chlorides (Cl) . . . . . max. 0,02 %  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,03 %  
 ammonium (NH<sub>4</sub>) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,001 %  
 iron (Fe) . . . . . max. 0,003 %  
 ninhydrin-positive substances. . . . . max. 0,5 %  
 residue on ignition . . . . . max. 0,4 %  
 loss on drying (105 °C) . . . . . max. 0,5 %  
 related substances . . . . . max. 2,0 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

**Specifications:**  
 assay (titration with HClO<sub>4</sub> on dried sample) . . . . . 99 - 101 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . passes test

Art. No.	Volume	Container
TI03250100	100 g	0

## 10-Undecylenic acid

## AC3195 Undecylenic acid, extra pure, Pharmpur®, Ph Eur, BP, USP



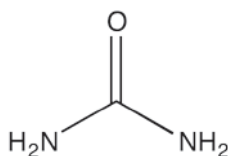
- Synonyms: 10-Undecenoic acid
- $C_{11}H_{20}O_2$
- M = 184,28 g/mol
- CAS [112-38-9]
- EINECS-No.: 203-965-8
- Density: 0,91 g/cm<sup>3</sup>
- Solub. in water: (20 °C): non-miscible
- Melting point: 24 °C
- Boiling point: 275 °C
- Flash pt. 146 °C
- LD 50 (oral, rat): 2500 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H315 - H319 - H412
- GHS-P sentences: P280 - P273 - P305 + P351 + P338 - P321 - P362 - P501a
- Tariff number: 2916 19 10 00
- Applications: laboratory reagent, synthesis of organic products, in pharma industry.

## Specifications:

assay (acidimetric) . . . . .	97 - 100,5 %
identification . . . . .	.passes test
density (25°/25°) . . . . .	0,910 - 0,913
water-soluble acids . . . . .	.passes test
refractive index n <sub>20</sub> /D . . . . .	1,447 - 1,448
degree of unsaturation . . . . .	.passes test
freezing point . . . . .	not lower than 21 °C
heavy metals (as Pb) . . . . .	max. 0,001 %
fixed and mineral oils . . . . .	.passes test
iodine value . . . . .	131 - 138
peroxide index . . . . .	max. 10
residue on ignition . . . . .	max. 0,1 %
Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
AC31950250	250 ml	

## Urea



- Synonyms: Carbamide, Carbonyldiamide
- $CH_4N_2O$
- M = 60,06 g/mol
- CAS [57-13-6]
- EINECS-No.: 200-315-5
- Solub. in water: (20 °C): 590 g/l
- Melting point: 132,5 - 134,5 °C
- Vapour pressure: (75 °C) ~ 0,002 hPa
- LD 50 (oral, rat): 8471 mg/kg

- Tariff number: 3102 10 10 00
- Applications: laboratory reagent, in biochemistry, in fertilizer compositions, manufacturing of synthetic resins, in the plastics industry, for reversible denaturation of proteins.

## UR0130 Urea, synthesis grade

assay (DSC) . . . . .min. 99 %  
 identity (IR-spectrum) . . . . .passes test  
 residue on ignition . . . . .max. 0,1 %

Art. No.	Volume	Container
UR01300500	500 g	
UR01301000	1 kg	

## UR0131 Urea, reagent grade, ACS

assay (titration with HClO<sub>4</sub>) . . . . . 99 - 100,5 %  
 identity (IR-spectrum) . . . . .passes test  
 melting point . . . . . 132 - 135 °C  
 insoluble in water . . . . .max. 0,005 %  
 acidity (as HCl) . . . . .max. 0,002 %  
 alkalinity (as NaOH) . . . . .max. 0,01 %  
 chlorides (Cl) . . . . .max. 0,0005 %

sulfates (SO<sub>4</sub>) . . . . .max. 0,001 %  
 copper (Cu) . . . . .max. 0,0002 %  
 heavy metals (as Pb) . . . . .max. 0,0004 %  
 iron (Fe) . . . . .max. 0,0001 %  
 nickel (Ni) . . . . .max. 0,0002 %  
 biuret . . . . .max. 0,1 %  
 residue on ignition . . . . .max. 0,01 %

Art. No.	Volume	Container
UR01310500	500 g	
UR01311000	1 kg	
UR0131005P	5 kg	

## UR0133 Urea, molecular biology grade

assay (DSC) . . . . .min. 99,5 %  
 identity (IR-spectrum) . . . . .passes test  
 appearance . . . . .passes test  
 appearance of solution . . . . .passes test  
 absorbance of an aqueous solution  
 8 M in a 1 cm cell at 260 nm . . . . .max. 0,1 AU  
 absorbance of an aqueous solution  
 8 M in a 1 cm cell at 280 nm . . . . .max. 0,1 AU

chlorides (Cl) . . . . .max. 0,0005 %  
 cyanides (CN) . . . . .max. 0,000001 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,001 %  
 ammonium (NH<sub>4</sub>) . . . . .max. 0,00001 %  
 heavy metals (as Pb) . . . . .max. 0,0004 %  
 iron (Fe) . . . . .max. 0,00002 %  
 biuret . . . . .max. 0,05 %  
 residue on ignition (800 °C) . . . . .max. 0,01 %

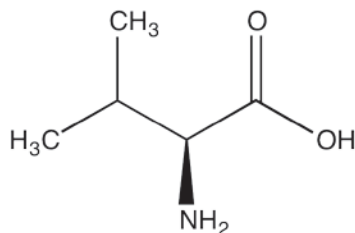
DNases, RNases, Proteases . . . . . non detected

Art. No.	Volume	Container
UR01330100	100 g	
UR01330500	500 g	
UR01332500	2,5 kg	
UR0133005P	5 kg	

# Valine

## L-Valine

### VA0055 L-Valine, extra pure, Pharmapur®, Ph Eur, BP, USP



- Synonyms: 2-Aminoisovaleric acid, (S)-2-Amino-3-methylbutanoic acid
- $C_5H_{11}NO_2$
- $M = 117,15 \text{ g/mol}$
- CAS [72-18-4]
- EINECS-No.: 200-773-6
- Solub. in water: (20 °C): 85 g/l
- Melting point: ~ 315 °C
- Tariff number: 2922 49 95 90
- Applications: in biochemistry, synthesis of organic products, for pharmaceuticals synthesizing, in pharma industry.

#### Specifications:

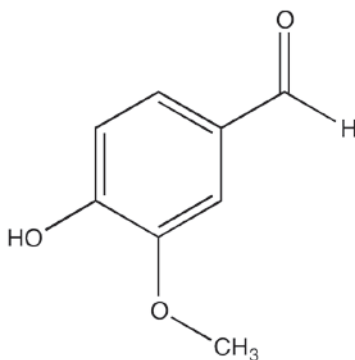
assay (titration with  $HClO_4$ , on dried sample) . . . . . 98,5 - 101 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution . . . . . passes test  
 specific rotation ( $[\alpha]_{20}^D$ ,  $c = 8$ ,  $HCl$

6 mol/l) . . . . . + 26,5 ° - + 29 °  
 pH (5 %,  $H_2O$ ) . . . . . 5,5 - 7  
 chlorides (Cl) . . . . . max. 0,05 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,03 %  
 ammonium ( $NH_4$ ) . . . . . max. 0,02 %  
 heavy metals (as Pb) . . . . . max. 0,0015 %  
 iron (Fe) . . . . . max. 0,003 %  
 ninhydrin-positive substances . . . . . max. 0,5 %  
 related substances . . . . . max. 2,0 %  
 residue on ignition . . . . . max. 0,1 %  
 loss on drying (105 °C) . . . . . max. 0,3 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
VA00550025	25 g	⊖
VA00550100	100 g	⊖

## Vanillin

### VA0025 Vanillin, extra pure



- Synonyms: 4-Hydroxy-3-methoxybenzaldehyde
- $C_8H_8O_3$
- $M = 152,15 \text{ g/mol}$
- CAS [121-33-5]
- EINECS-No.: 204-465-2
- Solub. in water: (25 °C): 10 g/l
- Melting point: ~ 82 °C
- Boiling point: (13 hPa) ~ 154 °C
- Flash pt. 153 °C
- Ignition temp.: > 400 °C
- Vapour pressure: (65 °C) 0,17 hPa
- LD 50 (oral, rat): 3978 mg/kg
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2912 41 00 00

- Applications: synthesis of organic products, in food industry, in the pharmaceuticals industry, cosmetics, perfumery.

#### Specifications:

assay (acidimetric, on dried sample) . . . . . 99 - 101 %  
 identity (IR-spectrum) . . . . . passes test  
 appearance of solution (5%, ethanol 96 %) . . . . . passes test  
 melting range . . . . . 81 - 83 °C  
 reaction to  $H_2SO_4$  . . . . . passes test  
 residue on ignition . . . . . max. 0,05 %  
 loss on drying . . . . . max. 1 %

Art. No.	Volume	Container
VA00250100	100 g	⊖
VA00250250	250 g	⊖
VA00251000	1 kg	⊖

## Vaseline

### VA0150 Vaseline, white, synthesis grade

- CAS [8009-03-8]
- EINECS-No.: 295-456-2
- Solub. in water: (20 °C): insoluble
- Melting point: 40 - 60 °C
- Flash pt. 243 °C
- Refraction index: ( $n_{60}^D$ ) 1,460 - 1,474
- Tariff number: 2712 10 90 00
- Applications: analytical chemistry, cosmetics, in the pharmaceuticals industry.

#### Specifications:

melting range . . . . . 38 - 60 °C  
 acidity or alkalinity . . . . . passes test  
 oils, fats, resins . . . . . passes test  
 organic acid . . . . . max. 0,001 %  
 residue on ignition . . . . . max. 0,01 %

Art. No.	Volume	Container
VA01500250	250 g	⊖
VA01501000	1 kg	⊖
VA0150005P	5 kg	⊖
VA0150025P	25 kg	⊖

## Vaseline oil

### AC0030 Vaseline oil, extra pure, Pharmapur®, Ph Eur, BP, USP

- Synonyms: Paraffin liquid, White Oil
- CAS [8012-95-1]
- EINECS-No.: 232-384-2
- Density: 0,86 - 0,87  $g/cm^3$
- Solub. in water: (20 °C): non-miscible
- Melting point: ~ -12 °C
- Flash pt. > 240 °C
- Refraction index: 1,4742
- LD 50 (oral, rat): > 5000 mg/kg
- Tariff number: 2710 19 85 00

- Applications: in lubricant compositions, cosmetics, protective agent, laxative, for heating baths, in pharma industry.

#### Specifications:

identification . . . . . passes test  
 density (20°/20°) . . . . . 0,827 - 0,890  
 acidity or alkalinity . . . . . passes test  
 polycyclic aromatic hydrocarbons . . . . . passes test  
 solid paraffin . . . . . passes test  
 substances darkened by  $H_2SO_4$  . . . . . passes test

viscosity . . . . . 110 - 230 mPaS  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
AC00301000	1 l	⊖
AC00302500	2,5 l	⊖
AC0030005P	5 l	⊖
AC0030025P	25 l	⊖



## Vermiculite

## VE0200 Vermiculite

- Synonyms: Hydrated magnesium-aluminum-iron silicate
- CAS [1318-00-9]
- Melting point: ~1300 °C
- Tariff number: 2842 10 00 00
- Applications: absorbent for: liquids; in building materials, in the ceramics industry, catalyst.

**Specifications:**

Universal absorbent composed of laminated mineral hydrates (silicates of aluminium, iron and magnesium) According to ASTM C-332 (fine grade)

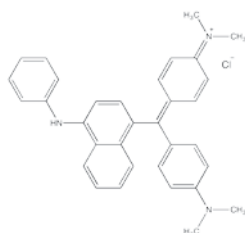
grain size . . . . . 0,2 - 1 mm  
 bulk density . . . . . 120 - 140 Kg/m<sup>3</sup>  
 softening temperature . . . . . approx. 1260 °C  
 melting point . . . . . approx. 1300 °C

spec. heat . . . . . 0,2  
 pH: 7 (but due to the presence of certain components, reaction can be alkaline)

Art. No.	Volume	Container
VE0200025P	25 l	
VE0200005P	5 l	

## Victoria blue B, C.I. 44045

## AZ0345 Victoria blue B, C.I. 44045, for microscopy



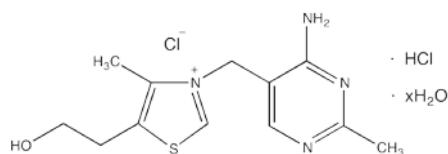
- Synonyms: Basic blue 26
- C<sub>33</sub>H<sub>32</sub>ClN<sub>3</sub>
- M = 506,09 g/mol
- CAS [2580-56-5]
- EINECS-No.: 219-943-6
- Melting point: 206 °C
- GHS-signal word: Warning
- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 3204 13 00 90
- Applications: laboratory reagent, indicator, microscopy.

**Specifications:**

Absorption maximum λ (in ethanol 50 %) . . . . . 612 - 617 nm  
 Absorptivity (A1%/1 cm; λ max.) . . . . . >1375  
 related substances (TLC) . . . . . passes test  
 loss on drying (135 °C) . . . . . max. 10 %

Art. No.	Volume	Container
AZ03450010	10 g	
AZ03450025	25 g	

## Vitamin B1 hydrochloride

VI0150 Vitamin B<sub>1</sub> hydrochloride, Pharmpur®, Ph Eur, BP, USP

- Synonyms: Thiamine hydrochloride, Aneurine hydrochloride
- C<sub>12</sub>H<sub>17</sub>ClN<sub>4</sub>OS·HCl·xH<sub>2</sub>O
- M = 337,27 g/mol
- CAS [67-03-8]
- EINECS-No.: 200-641-8
- Solub. in water: (20 °C): soluble
- Melting point: ~ 248 °C
- LD 50 (oral, rat): 3710 mg/kg
- Tariff number: 2936 22 00 00
- Applications: in the pharmaceuticals industry, vitamin, in food industry, in pharma industry.

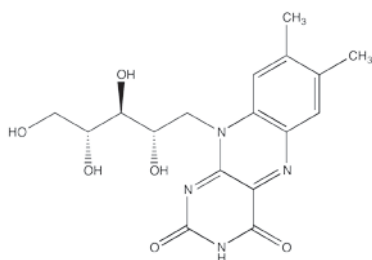
pH . . . . . 2,7 - 3,4  
 absorbance of an aqueous solution (10 %) in a 1 cm cell at 400 nm . . . . . max. 0,025 AU  
 nitrates (NO<sub>3</sub>) . . . . . passes test  
 sulfates (SO<sub>4</sub>) . . . . . max. 0,03 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 related substances . . . . . passes test  
 residue on ignition . . . . . max. 0,2 %  
 water content . . . . . max. 5,0 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

**Specifications:**

assay (titr. with HClO<sub>4</sub>, referred on dried sample) . . . . . 98,5 - 102,0 %

Art. No.	Volume	Container
VI01500025	25 g	

## Vitamin B2

VI0160 Vitamin B<sub>2</sub>, extra pure, Pharmpur®, Ph Eur, USP

- Synonyms: Lactoflavine, Riboflavine
- C<sub>17</sub>H<sub>20</sub>N<sub>4</sub>O<sub>6</sub>
- M = 376,37 g/mol
- CAS [83-88-5]
- EINECS-No.: 201-507-1
- Solub. in water: (20 °C): 0,065 g/l
- Melting point: ~ 280 °C (decomposes)
- LD 50 (oral, rat): > 10000 mg/kg
- Tariff number: 2936 23 00 00
- Applications: in food industry (E 101), in the pharmaceuticals industry, vitamin B<sub>2</sub>, in pharma industry.

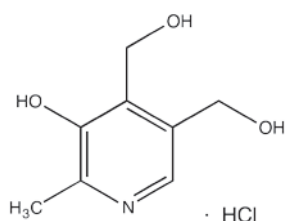
specific rotation ([α]<sub>D</sub><sup>20</sup>/D, c = 0,5; NaOH 0,05 mol/l) . . . . . - 115 ° - - 135 °  
 absorbance ratio 373/267 nm . . . . . 0,31 - 0,33  
 absorbance ratio 444/267 nm . . . . . 0,36 - 0,39  
 related substances . . . . . max. 0,5 %  
 lumiflavin . . . . . max. 0,025 AU  
 residue on ignition . . . . . max. 0,3 %  
 loss on drying (105 °C) . . . . . max. 1,5 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

**Specifications:**

assay (spectrophotometric) . . . . . 97 - 103 %

Art. No.	Volume	Container
VI01600100	100 g	

## Vitamin B6 hydrochloride

VI0180 Vitamin B<sub>6</sub> hydrochloride

- Synonyms: Adermine hydrochloride, Pyridoxine hydrochloride
- C<sub>8</sub>H<sub>11</sub>NO<sub>3</sub>·HCl
- M = 205,64 g/mol
- CAS [58-56-0]
- EINECS-No.: 200-386-2
- Solub. in water: (20 °C): ~ 220 g/l
- Melting point: 202 - 206 °C
- LD 50 (oral, rat): 4000 mg/kg
- Tariff number: 2936 25 00 00
- Applications: in the pharmaceuticals industry, vitamin, in food industry.

**Specifications:**

assay (titr. with HClO<sub>4</sub>, referred on dried sample) . . . . . min. 99,5 %  
 heavy metals (as Pb) . . . . . max. 0,002 %  
 loss on drying (105 °C) . . . . . max. 0,2 %

Art. No.	Volume	Container
VI01800010	10 g	

# Waterd

## Water

- H<sub>2</sub>O
- M = 18,02 g/mol
- CAS [7732-18-5]
- EINECS-No.: 231-791-2

- Density: 1,00 g/cm<sup>3</sup>
- Melting point: 0 °C
- Boiling point: 100 °C
- Vapour pressure: (20 °C) 23 hPa

- Dielectric const.: (20 °C) 80,2
- Tariff number: 2853 00 10 00
- Applications: solvents, analytical chemistry.

### AG0003 Water, deionized, extra pure

chlorides (Cl) . . . . .max. 0,005 %  
 phosphates (as PO<sub>4</sub>) . . . . .max. 0,005 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,005 %

Art. No.	Volume	Container
AG0003005P	5 l	P
AG0003010C	10 l	C
AG0003025P	25 l	P
AG0003060P	60 l	P

### AG0002 Water, reagent grade

conductivity (25 °C) . . . . .max. 1 µS/cm  
 chlorides (Cl) . . . . .max. 0,0001 %  
 nitrates (NO<sub>3</sub>) . . . . .max. 0,00003 %  
 phosphates (as PO<sub>4</sub>) . . . . .max. 0,00001 %  
 silicates (SiO<sub>2</sub>) . . . . .max. 0,000001 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,0001 %  
 aluminium (Al) . . . . .max. 0,00002 %  
 ammonium (NH<sub>4</sub>) . . . . .max. 0,00001 %  
 barium (Ba) . . . . .max. 0,00001 %  
 cadmium (Cd) . . . . .max. 0,00001 %  
 calcium (Ca) . . . . .max. 0,00003 %

chromium (Cr) . . . . .max. 0,00002 %  
 copper (Cu) . . . . .max. 0,00001 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00002 %  
 magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,00001 %  
 nickel (Ni) . . . . .max. 0,00001 %  
 potassium (K) . . . . .max. 0,00005 %  
 sodium (Na) . . . . .max. 0,00005 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 substances reducing KMnO<sub>4</sub> . . . . .passes test

residue on evaporation . . . . .max. 0,0001 %

Art. No.	Volume	Container
AG00021000	1 l	P
AG00022500	2,5 l	P
AG0002005P	5 l	P
AG0002010C	10 l	C
AG0002025P	25 l	P

### AG0001 Water, gradient HPLC grade

conductivity (25 °C) . . . . .max. 1 µS/cm  
 chlorides (Cl) . . . . .max. 0,00002 %  
 nitrates (NO<sub>3</sub>) . . . . .max. 0,00003 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,0001 %  
 residue on evaporation . . . . .max. 0,0001 %  
 lead (Pb) . . . . .max. 0,00001 %  
 colony count . . . . .max. 25 UFC/g

microbiological test . . . . .passes test  
 gradient elution: maximum absorption of the largest eluted peaks:  
 at 210 nm . . . . .0,01 AU  
 at 254 nm . . . . .0,001 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
AG00011000	1 l	P
AG00012500	2,5 l	P
AG00014000	4 l	P

### AG0015 Water, UHPLC-MS

conductivity (25 °C) . . . . .max. 1 µS/cm  
 chlorides (Cl) . . . . .max. 0,000001 %  
 fluorides (F) . . . . .max. 0,000001 %  
 nitrates (NO<sub>3</sub>) . . . . .max. 0,00001 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,00001 %  
 aluminium (Al) . . . . .max. 0,000002 %  
 barium (Ba) . . . . .max. 0,000002 %  
 cadmium (Cd) . . . . .max. 0,000002 %  
 calcium (Ca) . . . . .max. 0,00001 %  
 chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000001 %  
 iron (Fe) . . . . .max. 0,000002 %  
 lead (Pb) . . . . .max. 0,000002 %

magnesium (Mg) . . . . .max. 0,000002 %  
 manganese (Mn) . . . . .max. 0,000001 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 potassium (K) . . . . .max. 0,000005 %  
 silver (Ag) . . . . .max. 0,00001 %  
 sodium (Na) . . . . .max. 0,00001 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,000002 %  
 residue on evaporation . . . . .max. 0,0001 %  
 suitability for use in UHPLC-MS . . . . .passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 200 nm . . . . .95 % 0,022 AU  
 230 nm . . . . .99 % 0,004 AU

230 nm . . . . .99 % 0,004 AU  
 gradient grade (210 nm) maximum peak absorbance: 0,005 AU  
 gradient grade (254 nm) maximum peak absorbance: 0,001 AU  
 UHPLC-MS test ESI+ . . . . .max. 5 ppb Reserpin  
 UHPLC-MS test ESI- . . . . .max. 20 ppb Digoxin  
 Microfiltered through membranes of pore diameter 0,1 µm

Art. No.	Volume	Container
AG00151000	1 l	P
AG00152500	2,5 l	P

### AG0006 Water, LC-MS

conductivity (25 °C) . . . . .max. 1 µS/cm  
 chlorides (Cl) . . . . .max. 0,000001 %  
 fluorides (F) . . . . .max. 0,000001 %  
 nitrates (NO<sub>3</sub>) . . . . .max. 0,00001 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,00001 %  
 aluminium (Al) . . . . .max. 0,00005 %  
 barium (Ba) . . . . .max. 0,00001 %  
 cadmium (Cd) . . . . .max. 0,000005 %  
 calcium (Ca) . . . . .max. 0,00001 %  
 chromium (Cr) . . . . .max. 0,000002 %  
 cobalt (Co) . . . . .max. 0,000002 %  
 copper (Cu) . . . . .max. 0,000002 %  
 iron (Fe) . . . . .max. 0,00001 %  
 lead (Pb) . . . . .max. 0,00001 %

magnesium (Mg) . . . . .max. 0,00001 %  
 manganese (Mn) . . . . .max. 0,000002 %  
 nickel (Ni) . . . . .max. 0,000002 %  
 potassium (K) . . . . .max. 0,00001 %  
 silver (Ag) . . . . .max. 0,00001 %  
 sodium (Na) . . . . .max. 0,00001 %  
 tin (Sn) . . . . .max. 0,00001 %  
 zinc (Zn) . . . . .max. 0,00001 %  
 residue on evaporation . . . . .max. 0,0001 %  
 suitability for use in LC-MS . . . . .passes test  
 min. transmission/max. absorbance in a 1,0 cm cell at wavelength:  
 200 nm . . . . .95 % 0,022 AU  
 230 nm . . . . .99 % 0,004 AU

gradient grade (210 nm) maximum peak absorbance: max. 0,005 AU  
 gradient grade (254 nm) maximum peak absorbance: max. 0,001 AU  
 Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
AG00061000	1 l	P
AG00062500	2,5 l	P

### AG0014 Water, GC head space grade

conductivity (25 °C) . . . . .max. 1 µS/cm  
 Packed under inert gas. Suitable for residual solvents analysis Residual solvents are analysed according to guideline CPMP/ICH/283/95. Class 1 solvents excluded by production process. Class 2 and class 3 solvents likely to be present below following limits:  
 tert-Butyl methyl ether . . . . .1 mg/l

acetone . . . . .1 mg/l  
 methanol . . . . .1 mg/l  
 tetrahydrofuran . . . . .0,7 mg/l  
 ethanol . . . . .1 mg/l  
 acetonitrile . . . . .0,4 mg/l  
 2-propanol . . . . .1 mg/l  
 n-Propanol . . . . .1 mg/l

1,4-Dioxane . . . . .0,4 mg/l  
 pyridine . . . . .1 mg/l

Art. No.	Volume	Container
AG00141000	1 l	P

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z

## AG0016 Water, ppt-trace analysis grade, Ultratrace®

colour (Hazen) . . . . . max. 10	gold (Au) . . . . . max. 10 ppt	samarium (Sm) . . . . . max. 10 ppt
chlorides (Cl) . . . . . max. 1 ppb	hafnium (Hf) . . . . . max. 1 ppt	scandium (Sc) . . . . . max. 10 ppt
phosphates (as PO <sub>4</sub> ) . . . . . max. 1 ppb	holmium (Ho) . . . . . max. 1 ppt	selenium (Se) . . . . . max. 50 ppt
sulfates (SO <sub>4</sub> ) . . . . . max. 1 ppb	indium (In) . . . . . max. 1 ppt	silver (Ag) . . . . . max. 10 ppt
aluminium (Al) . . . . . max. 20 ppt	iron (Fe) . . . . . max. 10 ppt	sodium (Na) . . . . . max. 10 ppt
antimony (Sb) . . . . . max. 10 ppt	lanthanum (La) . . . . . max. 1 ppt	strontium (Sr) . . . . . max. 10 ppt
arsenic (As) . . . . . max. 10 ppt	lead (Pb) . . . . . max. 10 ppt	tantalum (Ta) . . . . . max. 10 ppt
barium (Ba) . . . . . max. 10 ppt	lithium (Li) . . . . . max. 10 ppt	tellurium (Te) . . . . . max. 1 ppt
beryllium (Be) . . . . . max. 10 ppt	lutetium (Lu) . . . . . max. 1 ppt	terbium (Tb) . . . . . max. 10 ppt
bismuth (Bi) . . . . . max. 10 ppt	magnesium (Mg) . . . . . max. 10 ppt	thallium (Tl) . . . . . max. 10 ppt
boron (B) . . . . . max. 20 ppt	manganese (Mn) . . . . . max. 10 ppt	thorium (Th) . . . . . max. 1 ppt
cadmium (Cd) . . . . . max. 10 ppt	mercury (Hg) . . . . . max. 20 ppt	thulium (Tm) . . . . . max. 10 ppt
calcium (Ca) . . . . . max. 10 ppt	molybdenum (Mo) . . . . . max. 10 ppt	tin (Sn) . . . . . max. 10 ppt
cerium (Ce) . . . . . max. 10 ppt	neodymium (Nd) . . . . . max. 1 ppt	titanium (Ti) . . . . . max. 10 ppt
cesium (Cs) . . . . . max. 10 ppt	nickel (Ni) . . . . . max. 10 ppt	tungsten (W) . . . . . max. 10 ppt
chromium (Cr) . . . . . max. 10 ppt	niobium (Nb) . . . . . max. 10 ppt	uranium (U) . . . . . max. 1 ppt
cobalt (Co) . . . . . max. 10 ppt	palladium (Pd) . . . . . max. 10 ppt	vanadium (V) . . . . . max. 10 ppt
copper (Cu) . . . . . max. 10 ppt	platinum (Pt) . . . . . max. 10 ppt	ytterbium (Yb) . . . . . max. 10 ppt
dysprosium (Dy) . . . . . max. 1 ppt	potassium (K) . . . . . max. 10 ppt	yttrium (Y) . . . . . max. 1 ppt
erbium (Er) . . . . . max. 1 ppt	praseodymium (Pr) . . . . . max. 10 ppt	zinc (Zn) . . . . . max. 10 ppt
europium (Eu) . . . . . max. 1 ppt	rhenium (Re) . . . . . max. 10 ppt	zirconium (Zr) . . . . . max. 10 ppt
gadolinium (Gd) . . . . . max. 1 ppt	rhodium (Rh) . . . . . max. 10 ppt	
gallium (Ga) . . . . . max. 10 ppt	rubidium (Rb) . . . . . max. 10 ppt	
germanium (Ge) . . . . . max. 10 ppt	ruthenium (Ru) . . . . . max. 10 ppt	

Art. No.	Volume	Container
AG00161000	1 l	☐

## Water with 0,1% acetic acid

### AG0009 Water with 0,1% acetic acid, LC-MS

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, chromatography.

#### Specifications:

acetic acid content (v/v) . . . . .	0,093 - 0,107 %
pH (20 °C) . . . . .	3,2 - 3,4
calcium (Ca) . . . . .	max. 0,00005 %
magnesium (Mg) . . . . .	max. 0,00005 %

potassium (K) . . . . .	max. 0,00005 %
sodium (Na) . . . . .	max. 0,0002 %
suitability for use in LC-MS . . . . .	.passes test
gradient grade (210 nm) maximum peak absorbance:-	max. 0,05 AU
gradient grade (254 nm) maximum peak absorbance: max. 0,01 AU	min. transmission/max. absorbance in a 1,0 cm cell at wavelength:
	T(%) A (AU)
210 nm. . . . .	20 % 0,699 AU
230 nm. . . . .	75 % 0,125 AU

254 nm. . . . . 99 % 0,004 AU  
Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
AG00091000	1 l	☐

## Water with 0,1% ammonium acetate

### AG0010 Water with 0,1% ammonium acetate, LC-MS

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, chromatography.

#### Specifications:

ammonium acetate content (w/v) . . . . .	0,093 - 0,107 %
pH (20 °C) . . . . .	6,8 - 7,2
calcium (Ca) . . . . .	max. 0,00005 %
magnesium (Mg) . . . . .	max. 0,00005 %

potassium (K) . . . . .	max. 0,00005 %
sodium (Na) . . . . .	max. 0,0002 %
suitability for use in LC-MS . . . . .	.passes test
gradient grade (210 nm) maximum peak absorbance: max. 0,01 AU	gradient grade (254 nm) maximum peak absorbance: max. 0,01 AU
min. transmission/max. absorbance in a 1,0 cm cell at wavelength:	T(%) A (AU)
210 nm. . . . .	20 % 0,699 AU

230 nm. . . . . 90 % 0,046 AU  
254 nm. . . . . 99 % 0,004 AU  
Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
AG00101000	1 l	☐

## Water with 0,1% formic acid

### AG0008 Water with 0,1% formic acid, LC-MS

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, chromatography.

#### Specifications:

formic acid content (v/v) . . . . .	0,093 - 0,107 %
pH (20 °C) . . . . .	2,6 - 2,8
calcium (Ca) . . . . .	max. 0,00005 %
magnesium (Mg) . . . . .	max. 0,00005 %

potassium (K) . . . . .	max. 0,00005 %
sodium (Na) . . . . .	max. 0,0002 %
suitability for use in LC-MS . . . . .	.passes test
gradient grade (210 nm) maximum peak absorbance: max. 0,05 AU	gradient grade (254 nm) maximum peak absorbance: max. 0,01 AU
min. transmission/max. absorbance in a 1,0 cm cell at wavelength:	T(%) A (AU)
210 nm. . . . .	5 % 1,301 AU

230 nm. . . . . 45 % 0,347 AU  
254 nm. . . . . 99 % 0,004 AU  
Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
AG00081000	1 l	☐

## Water with 0,1% trifluoroacetic acid

### AG0007 Water with 0,1% trifluoroacetic acid, LC-MS

- Density: ~ 1,00 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, chromatography.

#### Specifications:

trifluoroacetic acid content (v/v) . . . . .	0,093 - 0,107 %
pH (20 °C) . . . . .	1,8 - 2,0
calcium (Ca) . . . . .	max. 0,00005 %

magnesium (Mg) . . . . .	max. 0,00005 %
potassium (K) . . . . .	max. 0,00005 %
sodium (Na) . . . . .	max. 0,0002 %
suitability for use in LC-MS . . . . .	.passes test
gradient grade (210 nm) maximum peak absorbance: max. 0,05 AU	gradient grade (254 nm) maximum peak absorbance: max. 0,01 AU
min. transmission/max. absorbance in a 1,0 cm cell at wavelength:	T(%) A (AU)

210 nm. . . . . 25 % 0,602 AU  
230 nm. . . . . 85 % 0,071 AU  
254 nm. . . . . 99 % 0,004 AU  
Microfiltered through membranes of pore diameter 0,22 µm

Art. No.	Volume	Container
AG00071000	1 l	☐

## Wijss solution

RE0070 Wijss solution, ICI solution 0,1 mol/l (0,2 N)



- ICI
- Density: 1,06 g/cm<sup>3</sup>
- Solub. in water: (20 °C): miscible (decomposes)
- Flash pt. 40 °C
- LD 50 (oral, rat): 3310 mg/kg (chief component)
- ADR: 8 CF1 II UN 2920
- IMDG: 8 II UN 2920
- IATA/ICAO: 8 II UN 2920

- GHS-signal word: Danger
- GHS-H sentences: H314 - H226
- GHS-P sentences: P210 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, for determination of iodine index.
- Appearance: Brown liquid

### Specifications:

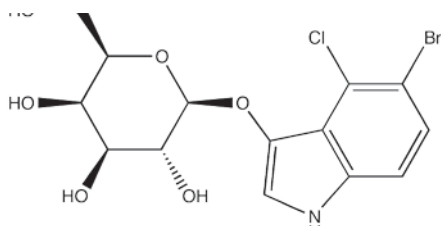
suitability for det. of iodine  
index .....passes test

Art. No.	Volume	Container
RE00700500	500 ml	0
RE00701000	1 l	0

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z

X-Gal

XG0010 X-Gal, for biochemical purposes



- Synonyms: 5-Bromo-4-chloro-3-indolyl-β-D-galactopyranoside
- C<sub>14</sub>H<sub>15</sub>BrClNO<sub>6</sub>
- M = 408,64 g/mol
- CAS [7240-90-6]
- EINECS-No.: 230-640-8
- Melting point: 230 °C
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332
- GHS-P sentences: P261 - P280 - P322 - P301 + P312 - P304 + P340 - P501a

- Tariff number: 2940 00 00 80
- Applications: in biochemistry.

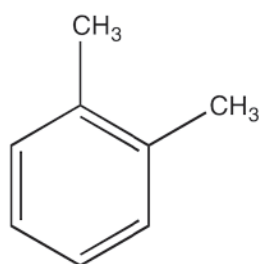
Specifications:

assay (HPLC) .....min. 99 %  
 Absorptivity (A1%/1 cm; 0,001%;  
 methanol, 233 nm) .....830 - 880

Art. No.	Volume	Container
XG0010.100	100 mg	♻️

o-Xylene

XI0025 o-Xylene, extra pure, Reag. Ph Eur



- Synonyms: 1,2-Dimethylbenzene
- C<sub>8</sub>H<sub>10</sub>
- M = 106,17 g/mol
- CAS [95-47-6]
- EINECS-No.: 202-422-2
- Density: 0,88 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,18 g/l
- Melting point: -25 °C
- Boiling point: 144,4 °C
- Flash pt. 30 °C
- Ignition temp.: 465 °C
- Vapour pressure: (20 °C) 6,7 hPa
- Dielectric const.: (30 °C) 2,5
- LD 50 (oral, rat): 3609 mg/kg
- EC-Index-No.: 601-022-00-9 [1]
- ADR: 3 F1 III UN 1307
- IMDG: 3 III UN 1307
- IATA/ICAO: 3 III UN 1307
- GHS-signal word: Warning
- GHS-H sentences: H226 - H312 - H332 - H315
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P321 - P501a
- Tariff number: 2902 41 00 00

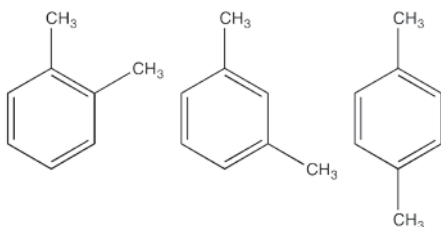
- Applications: synthesis of organic products, solvents, manufacture of dyes.

Specifications:

assay (G.C.) .....min. 99 %  
 identity (IR-spectrum) .....passes test  
 density (20°/20°) .....0,880 - 0,884  
 acidity .....max. 0,0003 meq/g  
 alkalinity .....max. 0,00025 meq/g  
 iron (Fe) .....max. 0,00005 %  
 copper (Cu) .....max. 0,00002 %  
 lead (Pb) .....max. 0,00002 %  
 nickel (Ni) .....max. 0,00002 %  
 (m + p)-xylene (G.C.) .....max. 1 %  
 thiophene (G.C.) .....max. 0,0005 %  
 sulfur compounds (as S) .....max. 0,003 %  
 residue on evaporation .....max. 0,001 %  
 water (K.F.) .....max. 0,03 %

Art. No.	Volume	Container
XI00251000	1 l	♻️
XI00252500	2,5 l	♻️

Xylene, mixture of isomers



- Synonyms: Dimethylbenzene, Xylol
- C<sub>8</sub>H<sub>10</sub>
- M = 106,17 g/mol
- CAS [1330-20-7]
- EINECS-No.: 215-535-7
- Density: 0,86 g/cm<sup>3</sup>
- Solub. in water: (20 °C): 0,2 g/l
- Melting point: > -34 °C
- Boiling point: 137 - 143 °C
- Flash pt. 25 °C
- Ignition temp.: ~ 465 °C
- Vapour pressure: (20 °C) 10 hPa
- Dielectric const.: (25 °C) 2,4

- LD 50 (oral, rat): 2840 mg/kg
- EC-Index-No.: 601-022-00-9 [4]
- ADR: 3 F1 III UN 1307
- IMDG: 3 III UN 1307
- IATA/ICAO: 3 III UN 1307
- GHS-signal word: Warning
- GHS-H sentences: H226 - H312 - H332 - H315
- GHS-P sentences: P210 - P241 - P261 - P303 + P361 + P353 - P321 - P501a
- Tariff number: 2902 44 00 00
- Applications: synthesis of organic products, solvents, manufacture of dyes.

XI0050 Xylene, mixture of isomers, synthesis grade



total isomer content (G.C.) .....min. 99 %  
 density (20°/4°) .....0,863 - 0,865  
 residue on evaporation .....max. 0,003 %  
 water (K.F.) .....max. 0,05 %

Art. No.	Volume	Container
XI00501000	1 l	♻️
XI00502500	2,5 l	♻️
XI0050005P	5 l	♻️
XI0050025P	25 l	♻️

XI0051 Xylene, mixture of isomers, extra pure



total isomer content (G.C.) .....min. 98 %  
 density (20°/4°) .....0,863 - 0,865  
 acidity .....max. 0,0003 meq/g  
 alkalinity .....max. 0,00025 meq/g  
 copper (Cu) .....max. 0,00002 %  
 iron (Fe) .....max. 0,00005 %

lead (Pb) .....max. 0,00002 %  
 nickel (Ni) .....max. 0,00002 %  
 thiophene (G.C.) .....max. 0,0005 %  
 substances darkened by H<sub>2</sub>SO<sub>4</sub> .....passes test  
 residue on evaporation .....max. 0,001 %  
 water (K.F.) .....max. 0,05 %

Art. No.	Volume	Container
XI00511000	1 l	♻️
XI00512500	2,5 l	♻️
XI0051005L	5 l	♻️
XI0051025A	25 l	♻️

# Xylene

## XI0055 Xylene, mixture of isomers, reagent grade, ACS, Reag. Ph Eur



total content of C <sub>8</sub> H <sub>10</sub> isomers (G.C.)	min. 99 %	cobalt (Co)	max. 0,00002 %
density (20°/20°)	0,865 - 0,867	copper (Cu)	max. 0,00002 %
density (20°/4°)	0,863 - 0,865	iron (Fe)	max. 0,00001 %
refractive index n <sub>20</sub> /D	1,495 - 1,499	lead (Pb)	max. 0,00001 %
appearance	clear	magnesium (Mg)	max. 0,00001 %
colour (Hazen)	max. 10	manganese (Mn)	max. 0,00002 %
boiling range (min. 95 %)	137 - 142 °C	nickel (Ni)	max. 0,00002 %
acidity	max. 0,00025 meq/g	tin (Sn)	max. 0,00001 %
alkalinity	max. 0,00025 meq/g	zinc (Zn)	max. 0,00001 %
aluminium (Al)	max. 0,00005 %	benzene (G.C.)	max. 0,1 %
barium (Ba)	max. 0,00001 %	ethylbenzene (G.C.)	max. 25 %
boron (B)	max. 0,000002 %	thiophene (G.C.)	max. 0,0001 %
cadmium (Cd)	max. 0,000005 %	toluene (G.C.)	max. 0,4 %
calcium (Ca)	max. 0,00005 %	sulfur compounds (as S)	max. 0,003 %
chromium (Cr)	max. 0,000002 %	substances darkened by H <sub>2</sub> SO <sub>4</sub>	passes test

residue on evaporation	max. 0,0005 %
water (K.F.)	max. 0,02 %

Art. No.	Volume	Container
XI00551000	1 l	
XI00552500	2,5 l	
XI0055005L	5 l	
XI0055025A	25 l	
XI0055200L	200 l	

## XI0059 Xylene, mixture of isomers, Multisolvent® ACS



total content of C <sub>8</sub> H <sub>10</sub> isomers (G.C.)	min. 99 %	cobalt (Co)	max. 0,000002 %
density (20°/4°)	0,863 - 0,865	copper (Cu)	max. 0,000002 %
appearance	clear	iron (Fe)	max. 0,000002 %
colour (Hazen)	max. 10	lead (Pb)	max. 0,00001 %
acidity	max. 0,00025 meq/g	magnesium (Mg)	max. 0,00001 %
alkalinity	max. 0,00025 meq/g	manganese (Mn)	max. 0,000001 %
aluminium (Al)	max. 0,00001 %	nickel (Ni)	max. 0,000002 %
barium (Ba)	max. 0,000001 %	tin (Sn)	max. 0,00001 %
boron (B)	max. 0,000002 %	zinc (Zn)	max. 0,000001 %
cadmium (Cd)	max. 0,000001 %	benzene (G.C.)	max. 0,1 %
calcium (Ca)	max. 0,00003 %	ethylbenzene (G.C.)	max. 25 %
chromium (Cr)	max. 0,000002 %	thiophene (G.C.)	max. 0,0001 %

toluene (G.C.)	max. 0,4 %
sulfur compounds (as S)	max. 0,003 %
substances darkened by H <sub>2</sub> SO <sub>4</sub>	passes test
residue on evaporation	max. 0,0003 %
water (K.F.)	max. 0,01 %

Art. No.	Volume	Container
XI00591000	1 l	
XI00592500	2,5 l	

## XI0052 Xylene, mixture of isomers, for histology



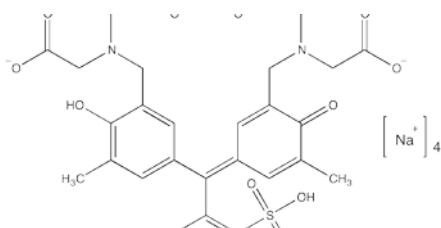
total content of C <sub>8</sub> H <sub>10</sub> isomers (G.C.)	min. 99 %	copper (Cu)	max. 0,000005 %
density (20°/4°)	0,863 - 0,865	iron (Fe)	max. 0,00002 %
colour (Hazen)	max. 10	lead (Pb)	max. 0,00002 %
acidity	max. 0,00025 meq/g	magnesium (Mg)	max. 0,00002 %
alkalinity	max. 0,00025 meq/g	manganese (Mn)	max. 0,000005 %
aluminium (Al)	max. 0,00005 %	nickel (Ni)	max. 0,000005 %
barium (Ba)	max. 0,00002 %	tin (Sn)	max. 0,00002 %
boron (B)	max. 0,000005 %	zinc (Zn)	max. 0,00002 %
cadmium (Cd)	max. 0,00001 %	benzene (G.C.)	max. 0,1 %
calcium (Ca)	max. 0,0001 %	ethylbenzene (G.C.)	max. 25 %
chromium (Cr)	max. 0,000005 %	thiophene (G.C.)	max. 0,0005 %
cobalt (Co)	max. 0,00001 %	toluene (G.C.)	max. 0,4 %

sulfur compounds (as S)	max. 0,003 %
substances darkened by H <sub>2</sub> SO <sub>4</sub>	passes test
residue on evaporation	max. 0,001 %
water (K.F.)	max. 0,03 %

Art. No.	Volume	Container
XI00521000	1 l	
XI00522500	2,5 l	
XI0052005L	5 l	

## Xylenol orange, tetrasodium salt

### AN0090 Xylenol orange, tetrasodium salt, indicator for metal titration, ACS



- Synonyms: 3',3"-Bis[bis(carboxymethyl)-aminoethyl] cresol sulfone phthrate sodium salt
- C<sub>31</sub>H<sub>28</sub>N<sub>2</sub>Na<sub>4</sub>O<sub>13</sub>S
- M = 760,60 g/mol
- CAS [3618-43-7]
- EINECS-No.: 222-805-8
- Solub. in water: (20 °C): ~ 510 g/l
- Tariff number: 2934 99 90 90
- Applications: analytical chemistry, indicator, for metals titration.

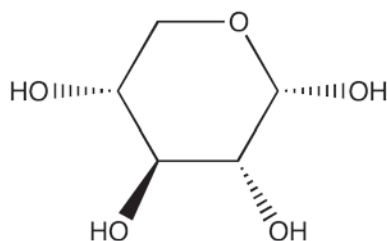
#### Specifications:

Absorption maximum λ (pH 14,0)	582 - 585 nm
Absorptivity (A1%/1 cm; λ max, pH 14,0 on dried sample)	600 - 650
suitability as indicator for metal	
loss on drying (110 °C)	max. 7 %
titration	passes test

Art. No.	Volume	Container
AN00900001	1 g	
AN00900005	5 g	

## D(+)-Xylose

### XI0080 D(+) -Xylose, extra pure, Pharmpur®, Ph Eur, BP



- Synonyms: Wood sugar
- C<sub>5</sub>H<sub>10</sub>O<sub>5</sub>
- M = 150,13 g/mol
- CAS [58-86-6]
- EINECS-No.: 200-400-7
- Solub. in water: (20 °C): freely soluble
- Melting point: 154 °C
- Tariff number: 2940 00 00 20
- Applications: cosmetics, manufacture of dyes, in food industry, in pharma industry.

#### Specifications:

assay	min. 99 %
identity (IR-spectrum)	passes test
appearance of solution (10 %, H <sub>2</sub> O)	clear and colourless

specific rotation ([α] <sub>20</sub> <sup>D</sup> , c = 5, H <sub>2</sub> O)	+ 18,5° - + 19,5°
acidity or alkalinity	passes test
chlorides (Cl)	max. 0,033 %
heavy metals (as Pb)	max. 0,002 %
residue on ignition	max. 0,1 %
loss on drying (105 °C)	max. 0,5 %
Residual solvents are analysed according to guideline CPMP/ICH/283/95.	

Art. No.	Volume	Container
XI00800100	100 g	
XI00800250	250 g	
XI00801000	1 kg	

## Zinc

## CI0145 Zinc, powder, extra pure



- Zn
- M = 65,38 g/mol
- CAS [7440-66-6]
- EINECS-No.: 231-175-3
- Solub. in water: (20 °C): hydrolysis reaction
- Melting point: 420 °C
- Boiling point: 908 °C
- Ignition temp.: 460 °C
- Vapour pressure: (487 °C) 1,33 hPa
- EC-Index-No.: 030-001-00-1
- ADR: 4.3 WS III UN 1436
- IMDG: 4.3 III UN 1436
- IATA/ICAO: 4.3 III UN 1436

- GHS-signal word: Danger
- GHS-H sentences: H250 - H260 - H410
- GHS-P sentences: P210 - P222 - P231 + P232 - P280 - P422a - P501a
- Tariff number: 7903 90 00 00
- Applications: analytical chemistry, laboratory reagent, electrical conductor, in galvanotechnia (corrosion inhibitor), electrolyte for batteries, metal alloys, reducing agent.
- Appearance: Grey powder

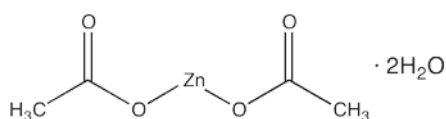
insoluble in HCl .....max. 0,05 %  
 arsenic (As) .....max. 0,00001 %  
 cadmium (Cd) .....max. 0,05 %  
 iron (Fe) .....max. 0,005 %  
 lead (Pb) .....max. 0,01 %

Art. No.	Volume	Container
CI01450500	500 g	
CI01451000	1 kg	
CI0145005P	5 kg	

**Specifications:**

assay (complexometric) .....min. 97 %

## Zinc acetate dihydrate



- Synonyms: Acetic acid zinc salt dihydrate
- $Zn(CH_3COO)_2 \cdot 2H_2O$
- M = 219,49 g/mol
- CAS [5970-45-6]
- EINECS-No.: 209-170-2
- Solub. in water: (20 °C): 430 g/l
- Melting point: ~ 100 °C
- LD 50 (oral, rat): 794 mg/kg
- GHS-signal word: Warning

- GHS-H sentences: H302
- GHS-P sentences: P264 - P270 - P301 + P312 - P330 - P501a
- Tariff number: 2915 29 00 90
- Applications: analytical chemistry, laboratory reagent, for the detection of: urobilin.

## CI0150 Zinc acetate dihydrate, extra pure, Pharmpur®, Ph Eur, BP, USP



assay (complexometric) .....99 - 101 %  
 identification .....passes test  
 appearance of solution .....clear and colourless  
 insoluble matter .....max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) .....6 - 7  
 chlorides (Cl) .....max. 0,005 %  
 sulfates (SO<sub>4</sub>) .....max. 0,01 %  
 aluminium (Al) .....max. 0,0005 %  
 arsenic (As) .....max. 0,0002 %

cadmium (Cd) .....max. 0,0002 %  
 copper (Cu) .....max. 0,005 %  
 iron (Fe) .....max. 0,005 %  
 lead (Pb) .....max. 0,001 %  
 alkali and alkaline-earth salts .....passes test  
 reducing substances .....passes test  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
CI01500500	500 g	
CI01501000	1 kg	
CI0150005P	5 kg	
CI0150025P	25 kg	

## CI0151 Zinc acetate dihydrate, reagent grade, ACS, Reag. Ph Eur



assay (complexometric) .....99 - 101 %  
 insoluble in water .....max. 0,005 %  
 pH (5 %, H<sub>2</sub>O) .....6,0 - 7,0  
 chlorides (Cl) .....max. 0,0005 %  
 sulfates (SO<sub>4</sub>) .....max. 0,005 %  
 total nitrogen (as N) .....max. 0,002 %  
 cadmium (Cd) .....max. 0,0005 %  
 calcium (Ca) .....max. 0,001 %

copper (Cu) .....max. 0,0005 %  
 iron (Fe) .....max. 0,0005 %  
 lead (Pb) .....max. 0,0005 %  
 magnesium (Mg) .....max. 0,005 %  
 manganese (Mn) .....max. 0,0005 %  
 potassium (K) .....max. 0,01 %  
 sodium (Na) .....max. 0,001 %

Art. No.	Volume	Container
CI01510500	500 g	
CI01511000	1 kg	
CI0151005P	5 kg	
CI0151025P	25 kg	

## Zinc chloride

- ZnCl<sub>2</sub>
- M = 136,28 g/mol
- CAS [7646-85-7]
- EINECS-No.: 231-592-0
- Solub. in water: (20 °C): soluble
- Melting point: 318 °C
- Boiling point: 730 °C

- LD 50 (oral, rat): 350 mg/kg
- EC-Index-No.: 030-003-00-2
- ADR: 8 C2 III UN 2331
- IMDG: 8 III UN 2331
- IATA/ICAO: 8 III UN 2331
- GHS-signal word: Danger
- GHS-H sentences: H314 - H410 - H302

- GHS-P sentences: P260 - P303 + P361 + P353 - P305 + P351 + P338 - P310 - P405 - P501a
- Tariff number: 2827 39 85 90
- Applications: analytical chemistry, laboratory reagent, catalyst, synthesis of organic products.
- Appearance: White crystalline powder

## CI0159 Zinc chloride, synthesis grade



assay (complexometric) .....min. 97 %  
 pH (10 %, H<sub>2</sub>O) .....4,6 - 5,5  
 sulfates (SO<sub>4</sub>) .....max. 0,05 %

iron (Fe) .....max. 0,005 %

Art. No.	Volume	Container
CI01592500	2,5 kg	

## CI0160 Zinc chloride, extra pure, Pharmpur®, Ph Eur, BP, USP



assay (complexometric) .....97 - 100,5 %  
 identification .....passes test  
 pH (10 %, H<sub>2</sub>O) .....4,6 - 5,5  
 sulfates (SO<sub>4</sub>) .....max. 0,02 %  
 oxychlorides .....passes test  
 alkali and alkaline-earth

salts .....passes test  
 aluminium, calcium, heavy metals,  
 iron, magnesium .....passes test  
 ammonium (NH<sub>4</sub>) .....max. 0,04 %  
 Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
CI01600500	500 g	
CI01601000	1 kg	
CI0160005P	5 kg	
CI0160025P	25 kg	

# Zincch

## CI0162 Zinc chloride, reagent grade, ACS, ISO, Reag. Ph Eur



assay (complexometric) . . . . .min. 98 %  
 insoluble matter . . . . .max. 0,005 %  
 pH (10 %, H<sub>2</sub>O) . . . . .4,6 - 5,5  
 nitrates (NO<sub>3</sub>) . . . . .max. 0,003 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,002 %  
 oxichloride (acidimetric, as ZnO) . . . . .max. 1,2 %  
 total nitrogen (as N) . . . . .max. 0,001 %

ammonium (NH<sub>4</sub>) . . . . .max. 0,005 %  
 cadmium (Cd) . . . . .max. 0,0005 %  
 calcium (Ca) . . . . .max. 0,001 %  
 copper (Cu) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,0005 %  
 lead (Pb) . . . . .max. 0,001 %  
 magnesium (Mg) . . . . .max. 0,001 %  
 potassium (K) . . . . .max. 0,02 %

sodium (Na) . . . . .max. 0,005 %

Art. No.	Volume	Container
CI01620250	250 g	P
CI01621000	1 kg	P

## CI0155 Zinc chloride, molecular biology grade



assay (complexometric) . . . . .min. 98 %  
 iron (Fe) . . . . .max. 0,0005 %  
 lead (Pb) . . . . .max. 0,001 %

magnesium (Mg) . . . . .max. 0,001 %  
 DNases, RNases, Proteases . . . . .passes test

Art. No.	Volume	Container
CI01550050	50 g	P

## Zinc nitrate hexahydrate

### CI0185 Zinc nitrate hexahydrate, reagent grade



- Synonyms: Nitric acid zinc salt hexahydrate
- Zn(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O
- M = 297,51 g/mol
- CAS [10196-18-6]
- EINECS-No.: 231-943-8
- Solub. in water: (20 °C): soluble
- Melting point: ~ 36 °C
- LD 50 (oral, rat): 1190 mg/kg
- ADR: 5.1 O2 II UN 1514
- IMDG: 5.1 II UN 1514
- IATA/ICAO: 5.1 II UN 1514
- GHS-signal word: Danger
- GHS-H sentences: H272

- GHS-P sentences: P221 - P210 - P220 - P280 - P370 + P378a - P501a
- Tariff number: 2834 29 80 00
- Applications: analytical chemistry, laboratory reagent, oxidizing agent, catalyst, mordant/corrosive.

copper (Cu) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,001 %  
 lead (Pb) . . . . .max. 0,005 %  
 magnesium (Mg) . . . . .max. 0,002 %  
 nickel (Ni) . . . . .max. 0,0005 %

#### Specifications:

assay (complexometric) . . . . .98,5 - 102 %  
 insoluble in water . . . . .max. 0,005 %  
 free acid (as HNO<sub>3</sub>) . . . . .max. 0,02 %  
 chlorides (Cl) . . . . .max. 0,002 %  
 sulfates (SO<sub>4</sub>) . . . . .max. 0,01 %  
 ammonia (NH<sub>3</sub>) . . . . .max. 0,01 %  
 calcium (Ca) . . . . .max. 0,001 %

Art. No.	Volume	Container
CI01850500	500 g	P
CI01851000	1 kg	P
CI0185005P	5 kg	P
CI0185025P	25 kg	P

## Zinc oxide

- ZnO
- M = 81,37 g/mol
- CAS [1314-13-2]
- EINECS-No.: 215-222-5
- Solub. in water: (20 °C): insoluble
- Melting point: ~ 1970 °C

- LD 50 (oral, rat): > 5000 mg/kg
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Warning
- GHS-H sentences: H410

- GHS-P sentences: P273 - P391 - P501a
- Tariff number: 2817 00 00 00
- Applications: analytical chemistry, laboratory reagent, reference material, in the pharmaceuticals industry, in food industry, cosmetics.

## CI0195 Zinc oxide, extra pure, Pharmpur®, Ph Eur, BP, USP



assay (on ignited sample) . . . . .99 - 100,5 %  
 identification . . . . .passes test  
 alkalinity . . . . .passes test  
 insoluble in acids and carbonates . . . . .passes test  
 carbonate and colour of solution . . . . .passes test

arsenic (As) . . . . .max. 0,0005 %  
 cadmium (Cd) . . . . .max. 0,001 %  
 iron (Fe) . . . . .max. 0,02 %  
 iron and other heavy metals . . . . .passes test  
 lead (Pb) . . . . .max. 0,005 %  
 residue on ignition (500 °C) . . . . .max. 1 %

Residual solvents are analysed according to guideline CPMP/ICH/283/95.

Art. No.	Volume	Container
CI01951000	1 kg	P
CI0195005P	5 kg	P

## CI0200 Zinc oxide, reagent grade, ACS, Reag. Ph Eur



assay (complexometric) . . . . .min. 99,0 %  
 identity . . . . .passes test  
 insoluble in diluted H<sub>2</sub>SO<sub>4</sub> . . . . .max. 0,01 %  
 alkalinity . . . . .passes test  
 chlorides (Cl) . . . . .max. 0,001 %  
 nitrates (NO<sub>3</sub>) . . . . .max. 0,003 %  
 phosphates (as PO<sub>4</sub>) . . . . .max. 0,0005 %  
 total nitrogen (as N) . . . . .max. 0,0005 %  
 arsenic (As) . . . . .max. 0,0001 %

cadmium (Cd) . . . . .max. 0,0005 %  
 calcium (Ca) . . . . .max. 0,001 %  
 copper (Cu) . . . . .max. 0,0005 %  
 iron (Fe) . . . . .max. 0,0005 %  
 lead (Pb) . . . . .max. 0,002 %  
 magnesium (Mg) . . . . .max. 0,005 %  
 manganese (Mn) . . . . .max. 0,0005 %  
 potassium (K) . . . . .max. 0,01 %  
 sodium (Na) . . . . .max. 0,001 %

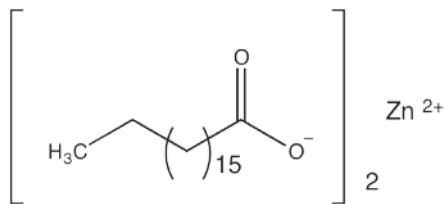
sulphur compounds (as SO<sub>2</sub>) . . . . .max. 0,01 %  
 substances reducing KMnO<sub>4</sub> . . . . .passes test  
 loss on ignition (500 °C) . . . . .max. 1 %

Art. No.	Volume	Container
CI02000500	500 g	P
CI02001000	1 kg	P
CI0200005P	5 kg	P



## Zinc stearate

## CI0180 Zinc stearate, extra pure, Pharmpur®, Ph Eur, BP, USP



- Synonyms: Stearic acid zinc salt
- $C_{58}H_{110}O_2Zn$
- M = 632,33 g/mol
- CAS [557-05-1]
- EINECS-No.: 209-151-9
- Solub. in water: (20 °C): insoluble
- Melting point: 120 - 122 °C
- Ignition temp.: 435 °C
- LD 50 (oral, rat): > 5000 mg/kg
- Tariff number: 2915 70 30 00
- Applications: for pharmaceuticals synthesizing, cosmetics, in lubricant compositions, antiseptic, in pharma industry.

**Specifications:**

assay (complexometric, as Zn) . . . . . 10 - 12 %  
 identification . . . . . passes test  
 appearance of solution of  
 fatty acids . . . . . passes test

acidity or alkalinity . . . . . passes test  
 acid value of the fatty acids . . . . . 195 - 210  
 chlorides (Cl) . . . . . max. 0,025 %  
 alkali and alkaline earth  
 metals . . . . . max. 1 %  
 sulfates ( $SO_4$ ) . . . . . max. 0,6 %  
 arsenic (As) . . . . . max. 0,00015 %  
 cadmium (Cd) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,0025 %  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.

Art. No.	Volume	Container
CI01800500	500 g	P
CI01801000	1 kg	F
CI0180005P	5 kg	F
CI0180020P	20 kg	V

## Zinc sulfate heptahydrate

- Synonyms: Sulfuric acid zinc salt heptahydrate, Zinc vitriol
- $ZnSO_4 \cdot 7H_2O$
- M = 287,54 g/mol
- CAS [7446-20-0]
- EINECS-No.: 231-793-3
- Solub. in water: (20 °C): 960 g/l

- Melting point: ~ 40 °C (decomposes)
- LD 50 (oral, rat): 2150 mg/kg
- EC-Index-No.: 030-006-00-9
- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Danger

- GHS-H sentences: H318 - H410 - H302
- GHS-P sentences: P280 - P273 - P305 + P351 + P338 - P310 - P301 + P312 - P501a
- Tariff number: 2833 29 20 00
- Applications: analytical chemistry, laboratory reagent, in galvanotechnia, for deproteinating blood and urine.

## CI0206 Zinc sulfate heptahydrate, extra pure, Pharmpur®, Ph Eur, BP, USP

assay (complexometric) . . . . . 99 - 104 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 acidity . . . . . passes test  
 pH (5 %,  $H_2O$ ) . . . . . 4,4 - 5,6  
 chlorides (Cl) . . . . . max. 0,03 %

iron (Fe) . . . . . max. 0,001 %  
 Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.

Art. No.	Volume	Container
CI02060500	500 g	P
CI02061000	1 kg	P
CI0206005P	5 kg	F
CI0206025P	25 kg	F

## CI0208 Zinc sulfate heptahydrate, crystallized, Pharmpur®, Ph Eur, GMP, suitable for use as excipient,

assay (complexometric) . . . . . 99 - 104 %  
 identification . . . . . passes test  
 appearance of solution . . . . . clear and colourless  
 pH (5 %,  $H_2O$ ) . . . . . 4,4 - 5,6  
 chlorides . . . . . max. 0,003 %  
 iron (Fe) . . . . . max. 0,001 %

Residual solvents are analysed according to guideline  
 CPMP/ICH/283/95.  
 Suitable for use as excipient according to require-  
 ments of GMP.

Art. No.	Volume	Container
CI02081000	1 kg	P
CI0208025P	25 kg	F

## CI0207 Zinc sulfate heptahydrate, reagent grade, ACS, ISO, Reag. Ph Eur

assay (complexometric) . . . . . 99,5 - 103,0 %  
 identity . . . . . passes test  
 appearance of solution . . . . . clear  
 insoluble in water . . . . . max. 0,01 %  
 pH (5 %,  $H_2O$ ) . . . . . 4,4 - 6,0  
 chlorides (Cl) . . . . . max. 0,0005 %  
 nitrates ( $NO_3$ ) . . . . . max. 0,002 %  
 total nitrogen (as N) . . . . . max. 0,0005 %  
 ammonium ( $NH_4$ ) . . . . . max. 0,001 %

arsenic (As) . . . . . max. 0,00005 %  
 cadmium (Cd) . . . . . max. 0,0005 %  
 calcium (Ca) . . . . . max. 0,001 %  
 copper (Cu) . . . . . max. 0,0005 %  
 iron (Fe) . . . . . max. 0,0005 %  
 lead (Pb) . . . . . max. 0,001 %  
 magnesium (Mg) . . . . . max. 0,001 %  
 manganese (Mn) . . . . . max. 0,0003 %  
 potassium (K) . . . . . max. 0,001 %

sodium (Na) . . . . . max. 0,001 %

Art. No.	Volume	Container
CI02070500	500 g	P
CI02071000	1 kg	P
CI0207005P	5 kg	F

## Zinc sulfate monohydrate

## CI0205 Zinc sulfate monohydrate, synthesis grade

- Synonyms: Sulfuric acid zinc salt monohydrate
- $ZnSO_4 \cdot H_2O$
- M = 179,45 g/mol
- CAS [7446-19-7]
- EINECS-No.: 231-793-3
- Solub. in water: (20 °C): ~ 350 g/l
- Melting point: ~ 740 °C (anhydrous substance)
- LD 50 (oral, rat): 2150 mg/kg (heptahydrate substance)
- EC-Index-No.: 030-006-00-9
- ADR: 9 M7 III UN 3077

- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Danger
- GHS-H sentences: H318 - H410 - H302
- GHS-P sentences: P280 - P273 - P305 + P351 + P338 - P310 - P301 + P312 - P501a
- Tariff number: 2833 29 20 00
- Applications: synthesis of organic products, in the pharmaceuticals industry, analytical chemistry, laboratory reagent, in galvanotechnia.

**Specifications:**

assay (complexometric) . . . . . min. 98 %  
 pH (5 %,  $H_2O$ ) . . . . . 4,4 - 6,0

Art. No.	Volume	Container
CI02051000	1 kg	P

# Zincsu

## Zinc sulfate, volumetric solutions

### CI0231 Zinc sulfate, solution 0,1 mol/l



- $ZnSO_4 \cdot 7H_2O$
- M = 287,54 g/mol
- CAS [7446-20-0]
- EINECS-No.: 231-793-3
- Density: 1,01 g/cm<sup>3</sup>
- EC-Index-No.: 030-006-00-9
- GHS-signal word: Warning
- GHS-H sentences: H319 - H412
- GHS-P sentences: P280 - P273 - P264 - P305 + P351 + P338 - P337 + P313 - P501a
- Tariff number: 2833 29 20 00

- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

#### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,01614 g  $ZnSO_4$ . This volumetric solution was checked by means of potentiometric methods using an EDTA disodium salt standard solution, that was also checked against Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
CI02311000	1 l	Ⓟ

### CI0230 Zinc sulfate, solution 0,05 mol/l

- $ZnSO_4 \cdot 7H_2O$
- M = 287,54 g/mol
- CAS [7446-20-0]
- EINECS-No.: 231-793-3
- Density: 1,00 g/cm<sup>3</sup>
- EC-Index-No.: 030-006-00-9
- GHS-H sentences: H412
- GHS-P sentences: P273 - P501a
- Tariff number: 2833 29 20 00
- Applications: analytical chemistry, laboratory reagent, titrant in volumetric analysis.

#### Specifications:

factor . . . . . 0,999 - 1,001  
uncertainty ± 0,001

1 ml = 0,00807 g  $ZnSO_4$ . This volumetric solution was checked by means of potentiometric methods using an EDTA disodium salt standard solution, that was also checked against Scharlau's calcium carbonate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).

Art. No.	Volume	Container
CI02301000	1 l	Ⓟ

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z

# Chemicals and Reagents

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ART. NO.	DESCRIPTION	PAGE
AC0050	Acetamide, extra pure	71
AC0065	Acetanilide, extra pure	71
AC0343	Acetic acid glacial, synthesis grade	71
AC0342	Acetic acid glacial, extra pure, Pharmapur®, Ph Eur, BP, USP	71
AC0344	Acetic acid glacial, reagent grade, ACS, ISO, Reag. Ph Eur	72
AC0345	Acetic acid glacial, min. 99,8%, reagent grade, according to Wijs	72
AC0353	Acetic acid glacial, reagent grade, ACS, ISO, packed in HDPE bottles	72
AC0346	Acetic acid glacial, HPLC grade	72
AC0347	Acetic acid glacial, eluent additive for LC-MS	72
AC0358	Acetic acid glacial, ppb-trace analysis grade, Ultratrace®	73
AC0359	Acetic acid glacial, ppt-trace analysis grade, Ultratrace®	73
AC0354	Acetic acid, solution 96% v/v, reagent grade	74
AC0351	Acetic acid, solution 80% v/v, extra pure	74
AC0349	Acetic acid, solution 60% v/v, extra pure	75
AC0350	Acetic acid, solution 50% v/v, extra pure	75
AC0365	Acetic acid, solution 1 mol/l (1 N)	75
AC0364	Acetic acid, solution 0,1 mol/l (0,1 N)	75
AN0154	Acetic anhydride, extra pure	76
AN0155	Acetic anhydride, reagent grade, ACS, ISO, Reag. Ph Eur	76
AC0306	Acetone, synthesis grade	76
AC0312	Acetone, extra pure, Pharmapur®, Ph Eur, BP, NF	76
AC0314	Acetone, reagent grade, ACS, ISO, Reag. Ph Eur	77
AC0316	Acetone, dried (max. 0,01% H <sub>2</sub> O), reagent grade	77
AC0310	Acetone, Multisolvant® HPLC grade ACS ISO UV-VIS	77
AC0308	Acetone, for GC residue analysis	77
AC0309	Acetone, GC ultra-trace analysis grade	78
AC0319	Acetone, 99,8%, anhydrous (max. 0,005% H <sub>2</sub> O)	78
AC0320	Acetone, VLSI grade	78
AC0322	Acetone-d <sub>6</sub> , deuteration degree min. 99,8%, NMR spectroscopy grade, Spectrosol®	78
AC0333	Acetonitrile, Multisolvant® HPLC grade ACS UV-VIS, Reag. Ph Eur	79
AC0329	Acetonitrile, gradient 240nm/ far UV HPLC grade	79
AC0331	Acetonitrile, supragradient HPLC grade	79
AC0391	Acetonitrile, UHPLC-MS	79
AC0371	Acetonitrile, LC-MS	79
AC0338	Acetonitrile, for GC residue analysis, suitable for QuEChERS	80
AC0326	Acetonitrile, 99,9%, anhydrous (max. 0,001% H <sub>2</sub> O)	80
AC0370	Acetonitrile, 99,7%, anhydrous (max. 0,005% H <sub>2</sub> O), with molecular sieves	80
AC0336	Acetonitrile, max. 0,003% H <sub>2</sub> O, DNA synthesis grade	80
AC0332	Acetonitrile-d <sub>3</sub> , deuteration degree min. 99,8%, NMR spectroscopy grade, Spectrosol®	80
AC0374	Acetonitrile with 0,1% acetic acid, LC-MS	80
AC0373	Acetonitrile with 0,1% formic acid, LC-MS	81
AC0372	Acetonitrile with 0,1% trifluoroacetic acid, LC-MS	81
AC0300	Acetophenone, extra pure	81
AC0220	Acetylacetone, synthesis grade	81
CL0230	Acetyl chloride, synthesis grade	82
CL0232	Acetyl chloride, reagent grade, ACS	82
AC0355	Acetylsalicylic acid, extra pure, Pharmapur®, Ph Eur, BP, USP	82
RE0025	Acid detergent fibre reagent, ADF according to Van Soest	82
AN0040	Acridine orange, C.I. 46005, for microscopy	82
AC3343	Acrylamide, molecular biology grade	83
AC3345	Acrylamide, electrophoresis grade	83
AC0375	Adipic acid, synthesis grade	83
AG0020	Agar-agar, powder, for bacteriology	83
AG0019	Agar-agar, food grade	83
AG0030	Agarose Low EEO, electrophoresis grade	83
AG0031	Agarose Medium EEO, electrophoresis grade	84
AG0032	Agarose High EEO, electrophoresis grade	84
AG0034	Agarose Low Melt, electrophoresis grade	84
AG0033	Agarose High Gelling Temperature, electrophoresis grade	84
AG0036	Agarose High Resolution, electrophoresis grade	84
AL0030	L-Alanine, extra pure, Pharmapur®, Ph Eur, BP, USP	84
AL0035	b-Alanine, extra pure	84
AL0025	DL-Alanine, extra pure	85
RO0070	Alizarin red S, C.I. 58005, reagent grade	85
RO0071	Alizarin red S, solution 0,1%	85
AM0025	Alizarin yellow GG, C.I. 14025, indicator	85
AL0760	Aluminium, powder, synthesis grade	86
AL0740	Aluminium ammonium sulfate dodecahydrate, extra pure, Pharmapur®, USP	86
AL0770	Aluminium chloride hexahydrate, extra pure, Pharmapur®, Ph Eur, BP, USP	86
AL0795	Aluminium hydroxide, extra pure	86
AL0850	Aluminium nitrate nonahydrate, extra pure	86
AL0820	Aluminium nitrate nonahydrate, reagent grade, ACS	87
AL0830	Aluminium oxide, synthesis grade	87
AL0835	Aluminium oxide activated, neutral, for column chromatography (activity degree 1)	87
AL0836	Aluminium oxide activated, acid, for column chromatography (activity degree 1)	87
AL0837	Aluminium oxide activated, basic, for column chromatography (activity degree 1)	87
AL0745	Aluminium potassium sulfate dodecahydrate, extra pure, Pharmapur®, Ph Eur, BP, USP	87
AL0746	Aluminium potassium sulfate dodecahydrate, reagent grade, ACS, Reag. Ph Eur	87
AL0855	Aluminium sulfate 18-hydrate, extra pure, Pharmapur®, Ph Eur, BP	88

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ART. NO.	DESCRIPTION	PAGE
AL0860	Aluminon, reagent for aluminium, reagent grade, ACS	88
NE0025	Amido black 10 B, C.I. 20470	88
AC0415	4-Aminobenzoic acid, synthesis grade	88
AM0210	2-Aminophenol, technical grade	88
AM0251	Ammonia, solution 32% w/w, extra pure	89
AM0256	Ammonia, solution 28% w/w, reagent grade, Pharpur®, Ph Eur	89
AM0257	Ammonia, solution 25% w/w, synthesis grade	89
AM0250	Ammonia, solution 25% w/w, extra pure, Pharpur®, Ph Eur	89
AM0249	Ammonia, solution 25% w/w, reagent grade, Reag. Ph Eur	90
AM0258	Ammonia, solution 25%, eluent additive for LC-MS	90
AM0247	Ammonia, solution 20% w/w, extra pure	90
AM0248	Ammonia, solution 20% w/w, reagent grade	90
AM0269	Ammonia, solution 20 - 22%, ppb-trace analysis grade, Ultratrace®	91
AM0272	Ammonia, solution 20 - 22%, ppt-trace analysis grade, Ultratrace®	91
AM0253	Ammonium acetate, extra pure	91
AM0254	Ammonium acetate, reagent grade, ACS, Reag. Ph Eur	91
AM0255	Ammonium acetate, HPLC grade	92
AM0259	Ammonium acetate, eluent additive for LC-MS	92
AM0271	Ammonium acetate, molecular biology grade	92
AM0230	Ammonium acetate, solution 1 mol/l, buffered at pH = 7	92
AM0262	Ammonium acetate, solution 10 mmol/l in water, buffered at pH = 7, LC-MS	92
AM0395	Ammonium amidosulfonate, reagent grade, ACS, for determination of sulfonamides in blood	92
AM0265	Ammonium bromide, extra pure, Pharpur®, Ph Eur, BP	93
AM0266	Ammonium bromide, reagent grade, ACS	93
AM0268	Ammonium carbonate, reagent grade, ACS	93
AM0267	Ammonium carbonate, HPLC grade	93
CE0050	Ammonium cerium(IV) nitrate, synthesis grade	93
CE0060	Ammonium cerium(IV) sulfate dihydrate, synthesis grade	93
AM0270	Ammonium chloride, extra pure, Pharpur®, Ph Eur, BP, USP	94
AM0273	Ammonium chloride, reagent grade, ACS, ISO, Reag. Ph Eur	94
AM0274	Ammonium chloride, molecular biology grade	94
AM0276	Ammonium dichromate, moistened with 0,5 - 3% H <sub>2</sub> O, extra pure	94
AM0334	Ammonium dihydrogen phosphate, extra pure	94
AM0335	Ammonium dihydrogen phosphate, reagent grade, ACS, Reag. Ph Eur	94
AM0320	Ammonium formate, eluent additive for LC-MS	95
AM0349	Ammonium heptamolybdate tetrahydrate, extra pure, Pharpur®, USP	95
AM0350	Ammonium heptamolybdate tetrahydrate, reagent grade, ACS, ISO, Reag. Ph Eur	95
AM0330	Ammonium hydrogen carbonate, reagent grade, Reag. Ph Eur	95
AM0332	di-Ammonium hydrogen citrate, reagent grade, ACS	96
AM0310	di-Ammonium hydrogen phosphate, extra pure, Pharpur®, NF	96
AM0312	di-Ammonium hydrogen phosphate, reagent grade, ACS	96
AM0480	Ammonium iodide, extra pure	96
HI0314	Ammonium iron(II) sulfate hexahydrate, extra pure	96
HI0316	Ammonium iron(II) sulfate hexahydrate, reagent grade, ACS, ISO, Reag. Ph Eur	97
HI0318	Ammonium iron(II) sulfate, solution ~ 0,12 mol/l (0,12 N), for COD determination, according to ISO 6060	97
HI0312	Ammonium iron(III) sulfate dodecahydrate, extra pure	97
HI0315	Ammonium iron(III) sulfate dodecahydrate, reagent grade, ACS, ISO	97
HI0319	Ammonium iron(III) sulfate, saturated solution	97
HI0317	Ammonium iron(III) sulfate, solution 0,1 mol/l (0,1 N)	97
AM0465	Ammonium monovanadate, synthesis grade	98
AM0467	Ammonium monovanadate, reagent grade, ACS	98
AM0364	di-Ammonium oxalate monohydrate, extra pure	98
AM0365	di-Ammonium oxalate monohydrate, reagent grade, ACS, ISO, Reag. Ph Eur	98
AM0370	Ammonium peroxodisulfate, extra pure, Reag. Ph Eur	98
AM0371	Ammonium peroxodisulfate, molecular biology grade	99
AM0398	Ammonium sulfate, extra pure	99
AM0400	Ammonium sulfate, reagent grade, ACS, ISO, Reag. Ph Eur	99
AM0401	Ammonium sulfate, molecular biology grade	99
AM0410	di-Ammonium tartrate, reagent grade	99
AM0419	Ammonium thiocyanate, reagent grade, ACS, ISO	99
AM0421	Ammonium thiocyanate, solution 1 mol/l (1 N)	100
AM0420	Ammonium thiocyanate, solution 0,1 mol/l (0,1 N)	100
AM0418	Ammonium thiocyanate, concentrated solution to prepare 1 l of solution 0,1 mol/l (0,1 N)	100
AM0468	Ampicilline, sodium salt, for biochemical purposes	100
AC0075	Amyl acetate, mixture of isomers, synthesis grade	100
AL0127	n-Amyl alcohol, synthesis grade	101
AL0128	n-Amyl alcohol, reagent grade	101
AN0345	Aniline, synthesis grade	101
AN0347	Aniline, reagent grade, ACS	101
AZ0100	Aniline blue, C.I. 42755, for microscopy	102
AN0400	Anisole, synthesis grade	102
AN0530	Antraquinone, synthesis grade	102
AN0420	Antimony, granulated, extra pure	102
AN0450	Antimony(III) oxide, synthesis grade	102
AR0050	D(-)-Arabinose, for biochemistry	103
AR0120	L-Arginine, extra pure, Pharpur®, Ph Eur, BP, USP	103
AR0125	L-Arginine monohydrochloride, extra pure, Pharpur®, Ph Eur, BP, USP	103
AC0515	L(+)-Ascorbic acid, reagent grade, ACS, ISO	104
AS0015	L-Asparagine monohydrate, extra pure, Pharpur®, Ph Eur, BP	104

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AC0529	L-Aspartic acid, extra pure, Pharmapur®, Ph Eur, BP, USP	104
AZ0365	Azure II, C.I. 52010/52015, for microscopy	105
AZ0390	Azur eosin methylene blue dye, according to Giemsa	105
AZ0391	Azur eosin methylene blue solution (in methanol), according to Giemsa, modified, for microscopy	105
BA0040	Barium acetate, reagent grade, ACS	106
BA0053	Barium chloride dihydrate, extra pure	106
BA0055	Barium chloride dihydrate, reagent grade, ACS, ISO, Reag. Ph Eur	106
BA0056	Barium chloride, solution 10% w/v	106
BA0063	Barium hydroxide octahydrate, extra pure	107
BA0065	Barium hydroxide octahydrate, reagent grade, ACS, ISO, Reag. Ph Eur	107
BA0073	Barium nitrate, extra pure	107
BA0075	Barium nitrate, reagent grade, ACS, Reag. Ph Eur	107
BA0080	Barium sulfate, extra pure, Pharmapur®, Ph Eur, BP	107
RE0100	Barritt's reagent, for microbiology	107
RE0001	Benedict's reagent, for qualitative determination of sugar	108
RE0002	Benedict's reagent, for quantitative determination of sugar	108
BE0160	Benzaldehyde, synthesis grade	108
BE0155	Benzalkonium chloride, synthesis grade	108
BE0030	Benzene, synthesis grade	109
BE0031	Benzene, extra pure	109
BE0033	Benzene, reagent grade, ACS, ISO, Reag. Ph Eur	109
BE0034	Benzene, dried (max. 0.01% H <sub>2</sub> O), reagent grade	109
BE0041	Benzene, Multisolvent® HPLC grade ACS ISO UV-VIS	109
BE0032	Benzene, 99.7%, anhydrous (max. 0.005% H <sub>2</sub> O)	109
BE0037	Benzene, for liquid scintillation, Normascint®	109
BE0040	Benzene-d <sub>6</sub> , deuteration degree min. 99.5%, NMR spectroscopy grade, Spectrosol®	110
AC0563	Benzoic acid, synthesis grade	110
AC0565	Benzoic acid, reagent grade, ACS	110
AC0566	Benzoic acid, secondary standard for volumetric titrations, Titrasure®	110
BE0270	Benzoin, synthesis grade	110
BE0245	Benzophenone, synthesis grade	111
CL0270	Benzoyl chloride, synthesis grade	111
PE0165	Benzoyl peroxide, moistened with 25% H <sub>2</sub> O, synthesis grade	111
PE0160	Benzoyl peroxide, moistened with 25% H <sub>2</sub> O, extra pure, Pharmapur®, Ph Eur, BP	111
AC0080	Benzyl acetate, synthesis grade	112
AL0160	Benzyl alcohol, synthesis grade	112
AL0162	Benzyl alcohol, extra pure, Pharmapur®, Ph Eur, BP, NF	112
AL0161	Benzyl alcohol, reagent grade, Reag. Ph Eur	112
AL0163	Benzyl alcohol, 99.5%, anhydrous (max. 0.01% H <sub>2</sub> O)	112
BE0075	Benzylamine, synthesis grade	113
BE0185	Benzyl benzoate, extra pure, Pharmapur®, Ph Eur, BP, USP	113
CL0250	Benzyl chloride, synthesis grade	113
BI0033	Biphenyl, synthesis grade	114
PA0150	Bismarck brown R, C.I. 21010, for microscopy	114
BI0225	Bismuth(III) hydroxide nitrate, extra pure, Pharmapur®, Ph Eur, BP, USP	114
BI0200	Bismuth oxide, synthesis grade	114
RE0003	Biuret's reagent, for determination of proteins	114
DE0010	Bleaching agent, solution according to Gram	115
AZ0220	Blue tetrazolium, for microscopy	115
AC0577	Boric acid, extra pure, Pharmapur®, Ph Eur, BP, NF	115
AC0582	Boric acid, powder, Pharmapur®, Ph Eur, GMP, suitable for use as excipient	115
AC0578	Boric acid, reagent grade, ACS, ISO, Reag. Ph Eur	115
AC0580	Boric acid, molecular biology grade	115
AC0579	Boric acid, solution 4% w/v	116
AC0581	Boric acid, solution 4% w/v, with indicator, for Kjeldahl	116
BR0017	Brij® 35 (Brij is a trademark of ICI America Inc.)	116
VE0060	Brilliant green, C.I. 42040, for microscopy	116
BR0070	Bromide-bromate, solution 0,05 mol/l (0,1 N), according to ASTM D5776-99	116
ME0736	Bromine index solution, according to ASTM D5776-99	117
AG0005	Bromine water, saturated solution	117
BR0030	p-Bromoacetanilide, extra pure	117
BR0060	Bromobenzene, synthesis grade	117
VE0070	Bromocresol green, indicator	117
VE0075	Bromocresol green, solution 0,04%, indicator	118
PU0020	Bromocresol purple, indicator	118
AZ0125	Bromophenol blue, indicator, ACS	118
AZ0126	Bromophenol blue, solution 0,04%, indicator	118
BR0120	N-Bromosuccinimide, extra pure	118
AZ0130	Bromothymol blue, indicator, ACS	119
BR0269	Brucine, synthesis grade	119
BR0270	Brucine dihydrate, reagent grade	119
BR0275	Brucine sulfate hydrate, reagent grade	119
SO1013	Buffer solution for complexometry, pH = 10 (ammonium chloride/ammonia)	120
AC0601	1-Butane sulfonic acid, sodium salt, HPLC grade	120
AL0170	1-Butanol, extra pure, Pharmapur®, NF	120
AL0173	1-Butanol, reagent grade, ACS, ISO, Reag. Ph Eur	120
AL0175	1-Butanol, HPLC grade	120
AL0176	2-Butanol, synthesis grade	121
AL0177	2-Butanol, reagent grade	121

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AL0180	tert-Butanol, synthesis grade	121
AL0183	tert-Butanol, reagent grade, ACS	121
AC0090	n-Butyl acetate, synthesis grade	122
AC0093	n-Butyl acetate, reagent grade, ACS	122
BU0020	n-Butylamine, synthesis grade	122
BU0022	n-Butylamine, reagent grade	122
ME0550	tert-Butyl methyl ether, extra pure	123
ME0551	tert-Butyl methyl ether, reagent grade, Reag. Ph Eur	123
ME0552	tert-Butyl methyl ether, HPLC grade	123
ME0553	tert-Butyl methyl ether, for GC residue analysis	123
ME0555	tert-Butyl methyl ether, 99,5%, anhydrous (max. 0,005% H <sub>2</sub> O)	123
CA0080	Cadmium, metal, extra pure, Reag. Ph Eur	124
CA0048	Cadmium acetate dihydrate, extra pure	124
CA0050	Cadmium acetate dihydrate, reagent grade	124
CA0060	Cadmium chloride 2.5-hydrate, extra pure	124
CA0075	Cadmium hydroxide, extra pure	124
CA0135	Cadmium iodide, extra pure	125
CA0097	Cadmium nitrate tetrahydrate, extra pure	125
CA0100	Cadmium nitrate tetrahydrate, reagent grade	125
CA0110	Cadmium oxide, extra pure	125
CA0150	Caffeine anhydrous, extra pure, Pharpur®, Ph Eur, BP, USP	126
CA0165	Calcein, indicator for metal titration	126
CA0180	Calcium L(+)-ascorbate, extra pure, Pharpur®, USP	126
CA0182	Calcium carbonate, precipitated, extra pure, Pharpur®, Ph Eur, BP, USP	126
CA0187	Calcium carbonate, precipitated, powder, Pharpur®, Ph Eur, GMP, suitable for use as excipient	127
CA0184	Calcium carbonate, precipitated, reagent grade, Reag. Ph Eur	127
CA0185	Calcium carbonate, secondary standard for volumetric titrations, Titrasure®	127
CA0190	Calcium chloride anhydrous, granulated, extra pure	127
CA0197	Calcium chloride anhydrous, powder, extra pure	127
CA0192	Calcium chloride anhydrous, powder, reagent grade	127
CA0193	Calcium chloride dihydrate, powder, extra pure, Pharpur®, Ph Eur, BP, USP	128
CA0199	Calcium chloride dihydrate, sheets, extra pure	128
CA0194	Calcium chloride dihydrate, powder, reagent grade, ACS	128
CA0198	Calcium chloride dihydrate, molecular biology grade	128
CA0195	Calcium chloride, solution 1 mol/l	128
CA0203	tri-Calcium dicitrate tetrahydrate, powder, extra pure, Pharpur®, USP	128
CA0211	Calcium bis-(dihydrogen phosphate) monohydrate, extra pure	129
CA0210	Calcium hydrogen phosphate dihydrate, extra pure, Pharpur®, Ph Eur, BP, USP	129
CA0215	Calcium hydroxide, 90%, synthesis grade	129
CA0216	Calcium hydroxide, powder, extra pure, Pharpur®, Ph Eur, BP, USP	129
CA0225	Calcium lactate pentahydrate, extra pure, Pharpur®, Ph Eur, BP, USP	129
CA0230	Calcium nitrate tetrahydrate, extra pure	130
CA0231	Calcium nitrate tetrahydrate, reagent grade, ACS	130
CA0260	Calcium oxide, natural, blocks	130
CA0205	tri-Calcium phosphate anhydrous, extra pure, Pharpur®, Ph Eur, BP	130
CA0200	Calcium stearate, extra pure	131
CA0284	Calcium sulfate dihydrate, extra pure, Pharpur®, Ph Eur, BP, NF	131
CA0285	Calcium sulfate dihydrate, reagent grade, ACS	131
AC0635	Calconcarboxylic acid, indicator for metal titration	131
AL0070	DL-Camphor, synthetic, extra pure	132
BA0030	Canada balsam, for microscopy	132
SU0170	Carbon disulfide, extra pure	132
SU0171	Carbon disulfide, reagent grade, ACS, Reag. Ph Eur	132
CA0380	Carmin, C.I. 75470, for microscopy	133
RE0016	Carrez's Reagent I	133
RE0017	Carrez's Reagent II	133
AC0020	Cedar wood oil, thickened	133
CE0080	Cerium(III) nitrate hexahydrate, extra pure, Reag. Ph Eur	133
CE0090	Cerium(IV) oxide, synthesis grade	133
CE0102	Cerium(IV) sulfate, solution 0,1 mol/l (0,1 N)	134
CE0101	Cerium(IV) sulfate, solution 0,05 mol/l (0,05 N)	134
CE0110	Cesium chloride, reagent grade	134
CE0121	Cesium chloride, molecular biology grade	134
AL0190	Cetyl alcohol, extra pure	134
CA0346	Charcoal activated, granulated	134
CA0350	Charcoal, animal, powder, extra pure	135
CA0351	Charcoal activated, powder, extra pure	135
CA0352	Charcoal activated, powder, reagent grade	135
CL0010	Chloral hydrate, extra pure	135
CL0020	Chloramine T trihydrate, reagent grade, ACS	135
CL0025	Chloramphenicol, for biochemical purposes	136
AC0747	Chloroacetic acid, extra pure	136
AC0750	Chloroacetic acid, reagent grade, ACS	136
CL0110	Chlorobenzene, extra pure	136
CL0111	Chlorobenzene, reagent grade, ACS	137
AC0765	2-Chlorobenzoic acid, extra pure	137
CL0119	1-Chlorobutane, reagent grade	137
CL0120	1-Chlorobutane, HPLC grade	137
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SO0345	di-Sodium hydrogen phosphate dihydrate, HPLC grade	359
SO0336	di-Sodium hydrogen phosphate dodecahydrate, extra pure, Pharmapur®, Ph Eur, BP	359
SO0343	di-Sodium hydrogen phosphate dodecahydrate, reagent grade, ISO	359
SO0346	di-Sodium hydrogen phosphate heptahydrate, crystallized, Pharmapur®, USP, GMP, suitable for use as excipient	359
SO0160	Sodium hydrogen selenite, for microbiology	359
SO0150	Sodium hydrogen sulfate anhydrous, extra pure	360
SO0417	Sodium hydrogen sulfite, solution 40%, extra pure	360
SO0419	Sodium hydrogen tartrate monohydrate, reagent grade	360
SO0418	Sodium hydroxide, granulated, synthesis grade	360
SO0420	Sodium hydroxide, pellets, extra pure, Pharmapur®, Ph Eur, BP, NF	360
SO0475	Sodium hydroxide, pellets, Pharmapur®, Ph Eur, GMP, suitable for use as excipient	361
SO0425	Sodium hydroxide, pellets, reagent grade, ACS, ISO, Reag. Ph Eur	361
SO0424	Sodium hydroxide, solution 50% w/v, extra pure	361
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SO0433	Sodium hydroxide, solution 25% w/v, extra pure	362
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SO0455	Sodium hydroxide, solution 5 mol/l (5 N)	363
SO0440	Sodium hydroxide, solution 2 mol/l (2 N)	363
SO0430	Sodium hydroxide, solution 1,66 mol/l (1,66 N)	363
SO0441	Sodium hydroxide, solution 1 mol/l (1 N)	363
SO0442	Sodium hydroxide, solution 0,5 mol/l (0,5 N)	363
SO0452	Sodium hydroxide, solution 0,4 mol/l (0,4 N)	364
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SO0464	Sodium hydroxide, solution 1/4,9 mol/l (1/4,9 N)	364
SO0445	Sodium hydroxide, solution 0,2 mol/l (0,2 N)	364
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SO0443	Sodium hydroxide, solution 0,1 mol/l (0,1 N)	365
SO0453	Sodium hydroxide, solution 0,05 mol/l (0,05 N)	365
SO0447	Sodium hydroxide, solution 0,025 mol/l (0,025 N)	365
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SO0448	Sodium hydroxide, solution 0,02 mol/l (0,02 N)	365
SO0439	Sodium hydroxide, solution 0,01 mol/l (0,01 N)	366
SO0428	Sodium hydroxide, concentrated solution to prepare 1 l of solution 1 mol/l (1 N)	366
SO0434	Sodium hydroxide, concentrated solution to prepare 1 l of solution 0,5 mol/l (0,5 N)	366
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SO0438	Sodium hydroxide, concentrated solution to prepare 1 l of solution 0,01 mol/l (0,01 N)	366
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SO0431	Sodium hypochlorite, solution 5% w/v, extra pure	367
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SO0837	Sodium iodide, reagent grade, ACS, Reag. Ph Eur	367
SO0460	Sodium lactate, solution 50% w/w, extra pure, Pharmapur®, Ph Eur, BP, USP	368
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SO0565	Sodium metaperiodate, reagent grade, ACS, Reag. Ph Eur	369
SO0820	Sodium metavanadate, synthesis grade	369
SO0489	Sodium molybdate dihydrate, extra pure, Pharmapur®, Ph Eur, BP	369
SO0490	Sodium molybdate dihydrate, reagent grade, ACS, Reag. Ph Eur	369
SO0500	Sodium nitrate, extra pure	370
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SO0529	di-Sodium oxalate, extra pure	371
SO0530	di-Sodium oxalate, reagent grade, ACS, Reag. Ph Eur	371
SO0531	di-Sodium oxalate, secondary standard for volumetric titrations, Titrasure®	371
SO0535	Sodium perchlorate monohydrate, extra pure, Reag. Ph Eur	371
SO0555	Sodium peroxide, extra pure	372
SO0540	Sodium peroxodisulfate, extra pure	372
SO1151	Sodium peroxodisulfate solution 14% w/v + ortho-Phosphoric acid 0,73% w/v in water	372
SO0342	tri-Sodium phosphate anhydrous, extra pure	372
SO0340	tri-Sodium phosphate dodecahydrate, reagent grade, ACS	372
SO0341	tri-Sodium phosphate monohydrate, extra pure	373
SO0435	Sodium phosphinate monohydrate, extra pure, Reag. Ph Eur	373
SO0590	Sodium pyruvate, for microbiology	373
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SO0633	Sodium salicylate, reagent grade	374
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SO0665	Sodium sulfate anhydrous, powder, extra pure, Pharmapur®, Ph Eur	374
SO0664	Sodium sulfate anhydrous, powder, reagent grade, ACS, ISO, Reag. Ph Eur	374
SO0667	Sodium sulfate anhydrous, granulated, reagent grade, ACS, ISO	374
SO0670	Sodium sulfate anhydrous, for GC residue analysis	375
SO0671	Sodium sulfate decahydrate, extra pure, Pharmapur®, Ph Eur, BP, USP	375
SO0673	Sodium sulfide hydrate, synthesis grade	375
SO0672	Sodium sulfite, extra pure, Pharmapur®, Ph Eur, BP	375
SO0669	Sodium sulfite, reagent grade, ACS, Reag. Ph Eur	375
SO0701	di-Sodium tartrate, anhydrous, reagent grade	376
SO0700	di-Sodium tartrate dihydrate, reagent grade, ACS	376
SO0704	di-Sodium tetraborate anhydrous, extra pure	376
SO0705	di-Sodium tetraborate decahydrate, extra pure, Pharmapur®, Ph Eur, BP, NF	376
SO0708	di-Sodium tetraborate decahydrate, crystallized, Pharmapur®, Ph Eur, GMP, suitable for use as excipient	377
SO0707	di-Sodium tetraborate decahydrate, reagent grade, ACS, ISO	377
OR0060	Sodium tetrachloroaurate(III) dihydrate, extra pure	377
SO0675	Sodium thiocyanate, reagent grade, ACS	377
SO0720	Sodium thiosulfate anhydrous, extra pure	377
SO0725	Sodium thiosulfate pentahydrate, extra pure, Pharmapur®, Ph Eur, BP, USP	377
SO0727	Sodium thiosulfate pentahydrate, reagent grade, ACS, ISO, Reag. Ph Eur	378
SO0730	Sodium thiosulfate, solution 1 mol/l (1 N)	378
SO0729	Sodium thiosulfate, solution 0,5 mol/l (0,5 N)	378
SO0732	Sodium thiosulfate, solution 0,282 mol/l (0,282 N)	378
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SO0737	Sodium thiosulfate, solution 0,05 mol/l (0,05 N)	378
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SO0734	Sodium thiosulfate, solution 0,002 mol/l (0,002 N)	379
SO0728	Sodium thiosulfate, concentrated solution to prepare 1 l of solution 0,1 mol/l (0,1 N)	379
SO0738	Sodium thiosulfate, concentrated solution to prepare 1 l of solution 0,01mol/l (0,01N)	379
SO0755	Sodium p-toluensulfonate, synthesis grade	379
SO0780	Sodium tripolyphosphate anhydrous, synthesis grade	379
SO0795	Sodium tungstate dihydrate, reagent grade, ACS	380
AC2032	Sorbic acid, synthesis grade	380
SO0850	D(-)-Sorbitol, extra pure, Pharmapur®, Ph Eur, BP, NF	380
SO0865	L(-)-Sorbitol, extra pure	380
AL0755	Aluminium, standard solution 1000 mg/l Al for AA (Al(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2%)	381
AN0442	Antimony, standard solution 1000 mg/l Sb for AA (Sb in HCl 20%)	381
AR0152	Arsenic, standard solution 1000 mg/l As for AA (As <sub>2</sub> O <sub>3</sub> in HNO <sub>3</sub> 2%)	381
BA0011	Barium, standard solution 1000 mg/l Ba for AA (Ba(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2%)	381
BI0131	Bismuth, standard solution 1000 mg/l Bi for AA (Bi in HNO <sub>3</sub> 10%)	381
BO0014	Boron, standard solution 1000 mg/l B for AA (H <sub>3</sub> BO <sub>3</sub> in H <sub>2</sub> O)	381
CA0042	Cadmium, standard solution 1000 mg/l Cd for AA (Cd in HNO <sub>3</sub> 2%)	381
CA0177	Calcium, standard solution 1000 mg/l Ca for AA (CaCO <sub>3</sub> in HNO <sub>3</sub> 2%)	382
CR0223	Chromium, standard solution 1000 mg/l Cr for AA (Cr(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2%)	382
CO0016	Cobalt, standard solution 1000 mg/l Co for AA (Co in HNO <sub>3</sub> 2%)	382
CO0086	Copper, standard solution 1000 mg/l Cu for AA (Cu in HNO <sub>3</sub> 2%)	382
OR0058	Gold, standard solution 1000 mg/l Au for AA (Au in HCl 2%)	382
HI0305	Iron, standard solution 1000 mg/l Fe for AA (Fe(NO <sub>3</sub> ) <sub>3</sub> in HNO <sub>3</sub> 2%)	382
PL0106	Lead, standard solution 1000 mg/l Pb for AA (Pb(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2%)	382
LI0061	Lithium, standard solution 1000 mg/l Li for AA (Li <sub>2</sub> CO <sub>3</sub> in HNO <sub>3</sub> 2%)	383
MA0012	Magnesium, standard solution 1000 mg/l Mg for AA (Mg in HNO <sub>3</sub> 2%)	383
MA0112	Manganese, standard solution 1000 mg/l Mn for AA (Mn in HNO <sub>3</sub> 2%)	383
ME0112	Mercury, standard solution 1000 mg/l Hg for AA (Hg(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 10%)	383
MO0022	Molybdenum, standard solution 1000 mg/l Mo for AA ((NH <sub>4</sub> ) <sub>6</sub> Mo <sub>7</sub> O <sub>24</sub> in H <sub>2</sub> O)	383
NI0122	Nickel, standard solution 1000 mg/l Ni for AA (Ni in HNO <sub>3</sub> 2%)	383
PO0106	Potassium, standard solution 1000 mg/l K for AA (KNO <sub>3</sub> in HNO <sub>3</sub> 2%)	383
SE0012	Selenium, standard solution 1000 mg/l Se for AA (Se in HNO <sub>3</sub> 2%)	383
SI0013	Silicon, standard solution 1000 mg/l Si for AA ((NH <sub>4</sub> ) <sub>2</sub> SiF <sub>6</sub> in H <sub>2</sub> O)	384
PL0006	Silver, standard solution 1000 mg/l Ag for AA (Ag in HNO <sub>3</sub> 2%)	384
SO0006	Sodium, standard solution 1000 mg/l Na for AA (NaNO <sub>3</sub> in HNO <sub>3</sub> 2%)	384
ES0178	Strontium, standard solution 1000 mg/l Sr for AA (Sr(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 2%)	384
ES0062	Tin, standard solution 1000 mg/l Sn for AA (Sn in HCl 20%)	384
TI0365	Titanium, standard solution 1000 mg/l Ti for AA (Ti in HNO <sub>3</sub> 5% + HF 0,5%)	384

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TU0012	Tungsten, standard solution 1000 mg/l W for AA (W in HNO <sub>3</sub> 1% + HF 2%)	384
VA0072	Vanadium, standard solution 1000 mg/l V for AA (NH <sub>4</sub> VO <sub>3</sub> in HNO <sub>3</sub> 2%)	384
CI0127	Zinc, standard solution 1000 mg/l Zn for AA (Zn in HNO <sub>3</sub> 2%)	385
AL0751	Aluminium, standard solution 1000 mg/l Al for AA (aluminium nitrate nonahydrate in nitric acid 0,5 mol/l)	385
AN0440	Antimony, standard solution 1000 mg/l Sb for AA (antimony(III) chloride in hydrochloric acid 5 mol/l)	385
AR0151	Arsenic, standard solution 1000 mg/l As for AA (arsenic(III) oxide in nitric acid 0,5 mol/l)	385
BA0010	Barium, standard solution 1000 mg/l Ba for AA (barium nitrate in nitric acid 0,5 mol/l)	385
BI0130	Bismuth, standard solution 1000 mg/l Bi for AA (bismuth(III) nitrate in nitric acid 0,5 mol/l)	385
BO0013	Boron, standard solution 1000 mg/l B for AA (boric acid in water)	385
CA0041	Cadmium, standard solution 1000 mg/l Cd for AA (cadmium nitrate in nitric acid 0,5 mol/l)	386
CA0176	Calcium, standard solution 1000 mg/l Ca for AA (calcium nitrate in nitric acid 0,5 mol/l)	386
CR0222	Chromium, standard solution 1000 mg/l Cr for AA (chromium(III) nitrate in nitric acid 0,5 mol/l)	386
CO0012	Cobalt, standard solution 1000 mg/l Co for AA (cobalt nitrate in nitric acid 0,5 mol/l)	386
CO0085	Copper, standard solution 1000 mg/l Cu for AA (copper(II) nitrate in nitric acid 0,5 mol/l)	386
OR0057	Gold, standard solution 1000 mg/l Au for AA (Gold(III) trichloride acid in hydrochloric acid 2 mol/l)	386
HI0302	Iron, standard solution 1000 mg/l Fe for AA (iron(III) nitrate nonahydrate in nitric acid 0,5 mol/l)	386
PL0105	Lead, standard solution 1000 mg/l Pb for AA (lead(II) nitrate in nitric acid 0,5 mol/l)	387
LI0060	Lithium, standard solution 1000 mg/l Li for AA (lithium nitrate in nitric acid 0,5 mol/l)	387
MA0011	Magnesium, standard solution 1000 mg/l Mg for AA (magnesium nitrate in nitric acid 0,5 mol/l)	387
MA0111	Manganese, standard solution 1000 mg/l Mn for AA (manganese nitrate in nitric acid 0,5 mol/l)	387
ME0111	Mercury, standard solution 1000 mg/l Hg for AA (mercury(II) nitrate monohydrate in nitric acid 2 mol/l)	387
MO0021	Molybdenum, standard solution 1000 mg/l Mo for AA (ammonium heptamolybdate in water)	387
NI0121	Nickel, standard solution 1000 mg/l Ni for AA (nickel(II) nitrate in nitric acid 0,5 mol/l)	387
PO0105	Potassium, standard solution 1000 mg/l K for AA (potassium nitrate in nitric acid 0,5 mol/l)	388
SE0011	Selenium, standard solution 1000 mg/l Se for AA (selenium dioxide in nitric acid 0,5 mol/l)	388
SI0012	Silicon, standard solution 1000 mg/l Si for AA (ammonium hexafluorosilicate in water)	388
PL0005	Silver, standard solution 1000 mg/l Ag for AA (silver nitrate in nitric acid 0,5 mol/l)	388
SO0005	Sodium, standard solution 1000 mg/l Na for AA (sodium nitrate in nitric acid 0,5 mol/l)	388
ES0177	Strontium, standard solution 1000 mg/l Sr for AA (strontium nitrate in nitric acid 0,5 mol/l)	388
ES0061	Tin, standard solution 1000 mg/l Sn for AA (tin(IV) chloride in hydrochloric acid 5 mol/l)	388
TI0360	Titanium, standard solution 1000 mg/l Ti for AA (titanium(IV) chloride in hydrochloric acid 5 mol/l)	389
TU0011	Tungsten, standard solution 1000 mg/l W for AA (ammonium tungstate in water)	389
VA0071	Vanadium, standard solution 1000 mg/l V for AA (ammonium monovanadate in nitric acid 0,5 mol/l)	389
CI0126	Zinc, standard solution 1000 mg/l Zn for AA (zinc nitrate in nitric acid 0,5 mol/l)	389
SO1101	Buffer solution pH = 1,00 (20 °C) (Hydrochloric acid/Sodium chloride)	389
SO1022	Buffer solution pH = 2,00 (20 °C) (Citric acid/Sodium hydroxide/Hydrochloric acid)	389
SO1023	Buffer solution pH = 3,00 (20 °C) (ortho-Phosphoric acid/Sodium hydroxide)	390
SO1004	Buffer solution pH = 4,00 (20 °C) (Potassium hydrogen phthalate)	390
SO1005	Buffer solution pH = 4,01 (20 °C) (Potassium hydrogen phthalate)	390
SO1025	Buffer solution pH = 5,00 (20 °C) (Acetic acid/Potassium hydroxide)	390
SO1006	Buffer solution pH = 6,00 (20 °C) (Potassium dihydrogen phosphate/Sodium hydroxide)	390
SO1007	Buffer solution pH = 7,00 (20 °C) (Potassium dihydrogen phosphate/di-Sodium hydrogen phosphate)	391
SO1008	Buffer solution pH = 7,02 (20 °C) (Potassium dihydrogen phosphate/di-Sodium hydrogen phosphate)	391
SO1028	Buffer solution pH = 8,00 (20 °C) (Boric acid/Potassium chloride/Sodium hydroxide)	391
SO1009	Buffer solution pH = 9,00 (20 °C) (Boric acid/Potassium chloride/Sodium hydroxide)	391
SO1092	Buffer solution pH = 9,26 (20 °C) (di-Sodium tetraborate decahydrate)	391
SO1010	Buffer solution pH = 10,00 (20 °C) (Sodium carbonate/Sodium hydrogen carbonate)	392
SO1141	Buffer solution pH = 11,00 (20 °C) (Boric acid/Sodium hydroxide/Potassium chloride)	392
SO1142	Buffer solution pH = 12,00 (20 °C) (di-Sodium hydrogen phosphate/Sodium hydroxide)	392
SO1143	Buffer solution pH = 13,00 (20 °C) (Potassium chloride/Sodium hydroxide)	392
SO2004	Buffer solution pH = 4,00 (20 °C), red-coloured	392
SO3004	Buffer solution pH = 4,00 (25 °C), red-coloured	393
SO2007	Buffer solution pH = 7,00 (20 °C), yellow-coloured	393
SO3007	Buffer solution pH = 7,00 (25 °C), yellow-coloured	393
SO2010	Buffer solution pH = 10,00 (20 °C), blue-coloured	393
SO3010	Buffer solution pH = 10,00 (25 °C), blue-coloured	393
SO2040	Buffer solution pH = 4,00 (20 °C), red-coloured, MONOBUF®	393
SO2070	Buffer solution pH = 7,00 (20 °C), yellow-coloured, MONOBUF®	394
SO2100	Buffer solution pH = 10,00 (20 °C), blue-coloured, MONOBUF®	394
SO2200	Buffer solution pH = 4,00, 7,00, 10,00 (20 °C), MONOBUF® Mix	394
PA0100	Conductivity standard, 147 µS/cm (25 °C), KCl 0,001 mol/l	394
PA0101	Conductivity standard, 1413 µS/cm (25 °C), KCl 0,01 mol/l	394
PA0102	Conductivity standard, 12880 µS/cm (25 °C), KCl 0,1 mol/l	394
PA0103	Conductivity standard, 50000 µS/cm (25 °C), KCl aqueous solution	394
AM0236	Ammonium, standard solution 1000 mg/l NH <sub>4</sub> <sup>+</sup> for IC (NH <sub>4</sub> Cl in H <sub>2</sub> O)	395
BA0012	Barium, standard solution 1000 mg/l Ba <sub>2</sub> <sup>+</sup> for IC (BaCO <sub>3</sub> in H <sub>2</sub> O)	395
BR0131	Bromide, standard solution 1000 mg/l Br <sup>-</sup> for IC (KBr in H <sub>2</sub> O)	395
CA0178	Calcium, standard solution 1000 mg/l Ca <sub>2</sub> <sup>+</sup> for IC (CaCl <sub>2</sub> in H <sub>2</sub> O)	395
CL0229	Chloride, standard solution 1000 mg/l Cl <sup>-</sup> for IC (NaCl in H <sub>2</sub> O)	395
CR0186	Chromium, standard solution 1000 mg/l Cr <sub>6</sub> <sup>+</sup> for IC ((NH <sub>4</sub> ) <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> in H <sub>2</sub> O)	395
CI0021	Cyanide, standard solution 1000 mg/l CN <sup>-</sup> for IC (KCN in 0,1% KOH)	395
FL0141	Fluoride, standard solution 1000 mg/l F <sup>-</sup> for IC (NaF in H <sub>2</sub> O)	395
GL0131	Glycolate, standard solution 1000 mg/l C <sub>2</sub> H <sub>3</sub> O <sub>3</sub> <sup>-</sup> for IC (C <sub>2</sub> H <sub>4</sub> O <sub>3</sub> in H <sub>2</sub> O)	395
YO0077	Iodide, standard solution 1000 mg/l I <sup>-</sup> for IC (KI in H <sub>2</sub> O)	395
LA0048	Lactate, standard solution 1000 mg/l CH <sub>3</sub> CH(OH)COO <sup>-</sup> for IC (CH <sub>3</sub> CH(OH)COONa in H <sub>2</sub> O)	396
LI0062	Lithium, standard solution 1000 mg/l Li <sup>+</sup> for IC (Li <sub>2</sub> CO <sub>3</sub> in H <sub>2</sub> O)	396
MA0013	Magnesium, standard solution 1000 mg/l Mg <sub>2</sub> <sup>+</sup> for IC (MgCl <sub>2</sub> in H <sub>2</sub> O)	396
NI0192	Nitrate, standard solution 1000 mg/l NO <sub>3</sub> <sup>-</sup> for IC (NH <sub>4</sub> NO <sub>3</sub> in H <sub>2</sub> O)	396
NI0123	Nitrite, standard solution 1000 mg/l NO <sub>2</sub> <sup>-</sup> for IC (NaNO <sub>2</sub> in H <sub>2</sub> O)	396

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PO0321	Perchlorate, standard solution 1000 mg/l $\text{ClO}_4^-$ for IC ( $\text{KClO}_4$ in $\text{H}_2\text{O}$ )	396
FO0112	Phosphate, standard solution 1000 mg/l $\text{PO}_4^{3-}$ for IC ( $\text{NH}_4\text{H}_2\text{PO}_4$ in $\text{H}_2\text{O}$ )	396
PO0107	Potassium, standard solution 1000 mg/l K + for IC ( $\text{KCl}$ in $\text{H}_2\text{O}$ )	396
AC1895	Propionate, standard solution 1000 mg/l $\text{C}_3\text{H}_5\text{O}_2^-$ for IC ( $\text{C}_3\text{H}_5\text{NaO}_2$ in $\text{H}_2\text{O}$ )	396
SO0007	Sodium, standard solution 1000 mg/l Na + for IC ( $\text{NaCl}$ in $\text{H}_2\text{O}$ )	396
ES0182	Strontium, standard solution 1000 mg/l $\text{Sr}_2$ + for IC ( $\text{SrCO}_3$ in $\text{H}_2\text{O}$ )	397
SU0103	Sulfate, standard solution 1000 mg/l $\text{SO}_4^{2-}$ for IC ( $\text{Na}_2\text{SO}_4$ in $\text{H}_2\text{O}$ )	397
AL0754	Aluminium, standard solution 1000 mg/l for ICP (Al in $\text{HNO}_3$ 2%)	397
AN0445	Antimony, standard solution 1000 mg/l for ICP (Sb in $\text{HCl}$ 20%)	397
AR0156	Arsenic, standard solution 1000 mg/l for ICP ( $\text{As}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	397
BA0016	Barium, standard solution 1000 mg/l for ICP ( $\text{Ba}(\text{NO}_3)_2$ in $\text{HNO}_3$ 2%)	397
BE0346	Beryllium, standard solution 1000 mg/l for ICP ( $\text{Be}_2\text{O}(\text{C}_2\text{H}_3\text{O}_2)_6$ in $\text{HCl}$ 2%)	397
BI0136	Bismuth, standard solution 1000 mg/l for ICP (Bi in $\text{HNO}_3$ 5%)	397
BO0018	Boron, standard solution 1000 mg/l for ICP ( $\text{H}_3\text{BO}_3$ in $\text{H}_2\text{O}$ )	398
CA0045	Cadmium, standard solution 1000 mg/l for ICP (Cd in $\text{HNO}_3$ 2%)	398
CA0181	Calcium, standard solution 1000 mg/l for ICP ( $\text{CaCO}_3$ in $\text{HNO}_3$ 2%)	398
CE0038	Cerium, standard solution 1000 mg/l for ICP ( $\text{Ce}(\text{NO}_3)_3$ in $\text{HNO}_3$ 2%)	398
CE0108	Cesium, standard solution 1000 mg/l for ICP ( $\text{CsNO}_3$ in $\text{H}_2\text{O}$ )	398
CR0227	Chromium, standard solution 1000 mg/l for ICP ( $\text{Cr}(\text{NO}_3)_3$ in $\text{HNO}_3$ 2%)	398
CO0014	Cobalt, standard solution 1000 mg/l for ICP (Co in $\text{HNO}_3$ 2%)	398
CO0081	Copper, standard solution 1000 mg/l for ICP (Cu in $\text{HNO}_3$ 2%)	398
DI1301	Dysprosium, standard solution 1000 mg/l for ICP ( $\text{Dy}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	399
ER0031	Erbium, standard solution 1000 mg/l for ICP ( $\text{Er}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	399
EU0052	Europium, standard solution 1000 mg/l for ICP ( $\text{Eu}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	399
GA0011	Gadolinium, standard solution 1000 mg/l for ICP ( $\text{Gd}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	399
GA0036	Gallium, standard solution 1000 mg/l for ICP (Ga in $\text{HNO}_3$ 2%)	399
GE0072	Germanium, standard solution 1000 mg/l for ICP (Ge in $\text{HNO}_3$ 5% + $\text{HF}$ 1%)	399
OR0063	Gold, standard solution 1000 mg/l for ICP (Au in $\text{HCl}$ 2%)	399
HA0011	Hafnium, standard solution 1000 mg/l for ICP ( $\text{HfO}_2$ in $\text{HNO}_3$ 2% + $\text{HF}$ 1%)	399
IN0088	Indium, standard solution 1000 mg/l for ICP (In in $\text{HNO}_3$ 2%)	400
IR0011	Iridium, standard solution 1000 mg/l for ICP ( $\text{IrCl}_3$ in $\text{HCl}$ 10%)	400
HI0291	Iron, standard solution 1000 mg/l for ICP (Fe in $\text{HNO}_3$ 2%)	400
LA0081	Lanthanum, standard solution 1000 mg/l for ICP ( $\text{La}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	400
PL0108	Lead, standard solution 1000 mg/l for ICP ( $\text{Pb}(\text{NO}_3)_2$ in $\text{HNO}_3$ 2%)	400
LI0064	Lithium, standard solution 1000 mg/l for ICP ( $\text{Li}_2\text{CO}_3$ in $\text{HNO}_3$ 2%)	400
LU0016	Lutetium, standard solution 1000 mg/l for ICP ( $\text{Lu}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	400
MA0016	Magnesium, standard solution 1000 mg/l for ICP ( $\text{Mg}(\text{NO}_3)_2$ in $\text{HNO}_3$ 2%)	400
MA0116	Manganese, standard solution 1000 mg/l for ICP (Mn in $\text{HNO}_3$ 2%)	401
ME0116	Mercury, standard solution 1000 mg/l for ICP ( $\text{HgO}$ in $\text{HNO}_3$ 10%)	401
MO0024	Molybdenum, standard solution 1000 mg/l for ICP ( $\text{MoO}_3$ in $\text{NH}_3$ 4%)	401
NE0064	Neodymium, standard solution 1000 mg/l for ICP ( $\text{Nd}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	401
NI0126	Nickel, standard solution 1000 mg/l for ICP (Ni in $\text{HNO}_3$ 2%)	401
NI0071	Niobium, standard solution 1000 mg/l for ICP (Nb in $\text{HNO}_3$ 5% + $\text{HF}$ 1%)	401
OS0056	Osmium, standard solution 1000 mg/l for ICP ( $\text{OsCl}_3$ in $\text{HCl}$ 2%)	401
PA0066	Palladium, standard solution 1000 mg/l for ICP (Pd in $\text{HCl}$ 5%)	401
FO0036	Phosphorus, standard solution 1000 mg/l for ICP ( $\text{NH}_4\text{H}_2\text{PO}_4$ in $\text{H}_2\text{SO}_4$ 0,05%)	402
PT0006	Platinum, standard solution 1000 mg/l for ICP (Pt in $\text{HCl}$ 10%)	402
PO0111	Potassium, standard solution 1000 mg/l for ICP ( $\text{KNO}_3$ in $\text{H}_2\text{O}$ )	402
RE0078	Rhenium, standard solution 1000 mg/l for ICP (Re in $\text{H}_2\text{O}$ )	402
RO0023	Rhodium, standard solution 1000 mg/l for ICP ( $\text{RhCl}_3$ in $\text{HCl}$ 5%)	402
RU0021	Rubidium, standard solution 1000 mg/l for ICP ( $\text{RbNO}_3$ in $\text{H}_2\text{O}$ )	402
RU0063	Ruthenium, standard solution 1000 mg/l for ICP ( $\text{RuCl}_3$ in $\text{HCl}$ 5%)	402
SA0211	Samarium, standard solution 1000 mg/l for ICP ( $\text{Sm}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	402
ES0021	Scandium, standard solution 1000 mg/l for ICP ( $\text{Sc}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	402
SE0016	Selenium, standard solution 1000 mg/l for ICP (Se in $\text{HNO}_3$ 2%)	403
SI0016	Silicon, standard solution 1000 mg/l for ICP ( $(\text{NH}_4)_2\text{SiF}_6$ in $\text{H}_2\text{O}$ )	403
PL0008	Silver, standard solution 1000 mg/l for ICP ( $\text{AgNO}_3$ in $\text{HNO}_3$ 2%)	403
SO0009	Sodium, standard solution 1000 mg/l for ICP ( $\text{NaNO}_3$ in $\text{H}_2\text{O}$ )	403
ES0181	Strontium, standard solution 1000 mg/l for ICP ( $\text{Sr}(\text{NO}_3)_2$ in $\text{HNO}_3$ 2%)	403
SU0102	Sulfur, standard solution 1000 mg/l for ICP ( $(\text{NH}_4)_2\text{SO}_4$ in $\text{H}_2\text{O}$ )	403
TA0201	Tantalum, standard solution 1000 mg/l for ICP (Ta in $\text{HNO}_3$ 5% + $\text{HF}$ 1%)	403
TE0023	Tellurium, standard solution 1000 mg/l for ICP (Te in $\text{HCl}$ 20%)	403
TA0031	Thallium, standard solution 1000 mg/l for ICP (Tl in $\text{HNO}_3$ 2%)	403
ES0066	Tin, standard solution 1000 mg/l for ICP (Sn in $\text{HCl}$ 20%)	404
TI0366	Titanium, standard solution 1000 mg/l for ICP ( $(\text{NH}_4)_2\text{TiF}_6$ in $\text{HNO}_3$ 5% + $\text{HF}$ 0,5%)	404
TU0016	Tungsten, standard solution 1000 mg/l for ICP ( $\text{WO}_3$ in $\text{NH}_3$ 4%)	404
VA0076	Vanadium, standard solution 1000 mg/l for ICP ( $\text{V}_2\text{O}_5$ in $\text{HNO}_3$ 2%)	404
IT0004	Ytterbium, standard solution 1000 mg/l for ICP ( $\text{Yb}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	404
IT0011	Yttrium, standard solution 1000 mg/l for ICP ( $\text{Y}_2\text{O}_3$ in $\text{HNO}_3$ 2%)	404
CI0129	Zinc, standard solution 1000 mg/l for ICP (Zn in $\text{HNO}_3$ 2%)	404
CI0256	Zirconium, standard solution 1000 mg/l for ICP ( $\text{ZrO}(\text{NO}_3)_2$ in $\text{HNO}_3$ 5% + $\text{HF}$ 0,5%)	404
MU0114	ICP multielement calibration standard solution, 4 elements in $\text{HCl}$ 1%	405
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AZ0040	Sulfur flower, synthesis grade, washed	410
AZ0041	Sulfur flower, extra pure, Pharpur®, Ph Eur, BP	410
AC2065	Sulfuric acid, 95 - 97%, synthesis grade	410
AC2066	Sulfuric acid, 95 - 98%, extra pure, Pharpur®, Ph Eur, BP, NF, packed in HDPE bottles	410
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AC2069	Sulfuric acid, 95 - 97%, reagent grade, ISO	411
AC2071	Sulfuric acid, 96% ± 0,1%, reagent grade	411
AC2067	Sulfuric acid, 95 - 97%, reagent grade, ISO, Reag. Ph Eur, packed in HDPE bottles	411
AC2097	Sulfuric acid, 95 - 98%, reagent grade, ACS, ISO, max. 0,0000005% Hg	411
AC2114	Sulfuric acid, 96%, ppb-trace analysis grade, Ultratrace®	412
AC2115	Sulfuric acid, 96%, ppt-trace analysis grade, Ultratrace®	412
AC2064	Sulfuric acid, solution 90 - 91% w/w, for Gerber fat determination and testing nitrates in milk	412
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AC2076	Sulfuric acid, solution 0,025 mol/l (0,05 N)	416
AC2083	Sulfuric acid, solution 0,01 mol/l (0,02 N)	416
AC2073	Sulfuric acid, concentrated solution to prepare 1 l of solution 0,5 mol/l (1 N)	416
AC2072	Sulfuric acid, concentrated solution to prepare 1 l of solution 0,05 mol/l (0,1 N)	416
TA0010	TAE 10X buffer pH = 8,3, molecular biology grade	417
AC2090	Tannic acid, synthesis grade	417
AC3001	L(+)-Tartaric acid, reagent grade, ACS, ISO	417
TB0010	TBE 5X buffer pH = 8,3, molecular biology grade	417
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ME0515	Mixture T.B.N. : chlorobenzene/acetic acid, 2:1 v/v, according to ASTM D2896, reagent grade	418
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BR0200	Tetrabutylammonium bromide, HPLC grade	418
TE0120	Tetrabutylammonium hydrogen sulfate, for ion-pair chromatography	418
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TE0219	Tetrahydrofuran, synthesis grade, stabilized with 2,6-Di-tert-butyl-4-methylphenol (BHT)	420
TE0220	Tetrahydrofuran, extra pure, stabilized with 250 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)	420
TE0221	Tetrahydrofuran, reagent grade, ACS, Reag. Ph Eur, stabilized with 250 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)	421
TE0223	Tetrahydrofuran, dried (max. 0,005% H <sub>2</sub> O), reagent grade, stabilized with 250 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)	421
TE0228	Tetrahydrofuran, Multisolvent® GPC grade, ACS, stabilized with 250 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)	421
TE0225	Tetrahydrofuran, HPLC grade, without stabilizer	421
TE0222	Tetrahydrofuran, 99,8%, anhydrous (max. 0,005% H <sub>2</sub> O), stabilized with 250 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)	421
TE0229	Tetrahydrofuran, 99,5%, anhydrous (max. 0,005% H <sub>2</sub> O), with molecular sieves, stabilized with 2,6-Di-tert-butyl-4-methylphenol (BHT)	421
TE0230	Tetrahydrofuran-d <sub>8</sub> , deuteration degree min. 99,5%, NMR spectroscopy grade, Spectrosol®	422
TE0240	1,2,3,4-Tetrahydronaphthalene, pure	422
CL0355	Tetramethylammonium chloride, synthesis grade	422
SO0583	Tetrasodium diphosphate decahydrate, extra pure, Reag. Ph Eur	422
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TI0300	Thiourea, extra pure	424
TI0303	Thiourea, reagent grade, ACS	424
TI0080	Thymol, extra pure, Pharpur®, Ph Eur, BP, NF	424
AZ0225	Thymol blue, indicator, ACS	424
AZ0226	Thymol blue, solution 0,04%, indicator	424
TI0100	Thymolphthalein, indicator, reagent grade, ACS	425
ES0051	Tin, granulated (1 - 3 mm), extra pure, Reag. Ph Eur	425
ES0063	Tin(II) chloride dihydrate, extra pure, Pharpur®, Ph Eur, BP	425
ES0064	Tin(II) chloride dihydrate, reagent grade, ACS, ISO, Reag. Ph Eur	425
ES0065	Tin(IV) chloride, synthesis grade	425
ES0070	Tin(IV) oxide, extra pure	426
TI0329	TISAB III, for fluorides determination	426
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TO0072	Toluene, synthesis grade	427
TO0073	Toluene, extra pure	427
TO0075	Toluene, reagent grade, ACS, ISO, Reag. Ph Eur	427
TO0074	Toluene, dried (max. 0,0075% H <sub>2</sub> O), reagent grade, ACS, ISO	427
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TO0082	Toluene, GC ultra-trace analysis grade	428
TO0084	Toluene, 99,8%, anhydrous (max. 0,003% H <sub>2</sub> O)	428
TO0087	Toluene, 99,5%, anhydrous (max. 0,005% H <sub>2</sub> O), with molecular sieves	428
TO0086	Toluene, for histology	428
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TO0080	Toluene-d <sub>8</sub> , deuteration degree min. 99,5%, NMR spectroscopy grade, Spectrosol®	429
AC3120	Toluene-4-sulfonic acid monohydrate, synthesis grade	429
AC3123	Toluene-4-sulfonic acid monohydrate, reagent grade	429
TO0120	o-Toluidine, synthesis grade	429
AZ0235	Toluidine blue, C.I. 52040, for microscopy	430
TR0030	D-Trehalose, for bacteriology	430
TR0080	Triacetin, 99%, extra pure	430
AC3130	Trichloroacetic acid, extra pure, Pharpur®, Ph Eur, BP	430
AC3132	Trichloroacetic acid, reagent grade, ACS	430
AC3134	Trichloroacetic acid, solution 20% w/v, extra pure	431
AC3133	Trichloroacetic acid, solution 3% w/v, extra pure	431
TR0119	1,2,4-Trichlorobenzene, reagent grade	431
TR0120	1,2,4-Trichlorobenzene, HPLC grade	431
TR0149	Trichloroethene, synthesis grade, stabilized with ethanol	432
TR0150	Trichloroethene, extra pure, stabilized with ethanol	432
TR0151	Trichloroethene, reagent grade, ACS, stabilized with ethanol	432
TR0200	Triethanolamine, synthesis grade	432
TR0202	Triethanolamine, extra pure, Pharpur®, Ph Eur, NF	432
TR0215	Triethylamine, synthesis grade	433
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TR0240	Triethylene glycol, extra pure	433
TR0260	Triethylenetetramine, synthesis grade	434
AC3141	Trifluoroacetic acid, synthesis grade	434
AC3143	Trifluoroacetic acid, buffer substance, HPLC grade	434
AC3144	Trifluoroacetic acid, eluent additive for LC-MS	434
AC3142	Trifluoroacetic acid, peptide synthesis grade	434
AC3140	Trifluoroacetic acid-d, deuteration degree min. 99,5%, NMR spectroscopy grade, Spectrosol®	435
IS0153	2,2,4-Trimethylpentane, extra pure	435
IS0154	2,2,4-Trimethylpentane, reagent grade, ACS, Reag. Ph Eur	435
IS0156	2,2,4-Trimethylpentane, HPLC grade	435
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IS0161	2,2,4-Trimethylpentane, 99,5%, anhydrous (max. 0,003% H <sub>2</sub> O)	436
IS0160	2,2,4-Trimethylpentane, ASTM	436
TR0425	Tris-HCl, molecular biology grade	436
TR0422	Tris-(hydroxymethyl)-aminomethane, extra pure, Pharpur®, Ph Eur, BP	436
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TR0427	Tris-(hydroxymethyl)-aminomethane, secondary standard for volumetric titrations, Titrasure®	436
TR0424	Tris-(hydroxymethyl)-aminomethane, molecular biology grade	437
TR0444	Triton® X-100, extra pure	437
TR0447	Triton® X-100, molecular biology grade	437
TR0400	L-Tryptophan, extra pure, Pharpur®, Ph Eur, BP, USP	437
TW0020	Tween® 20, synthesis grade	437
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TW0040	Tween® 40, extra pure	438
TW0060	Tween® 60, synthesis grade	438
TW0080	Tween® 80, synthesis grade	438
TI0325	L-Tyrosine, extra pure, Pharpur®, Ph Eur, BP, USP	438
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VA0025	Vanillin, extra pure	440
VA0150	Vaseline, white, synthesis grade	440
AC0030	Vaseline oil, extra pure, Pharmapur®, Ph Eur, BP, USP	440
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AZ0345	Victoria blue B, C.I. 44045, for microscopy	441
VI0150	Vitamin B1 hydrochloride, Pharmapur®, Ph Eur, BP, USP	441
VI0160	Vitamin B2, extra pure, Pharmapur®, Ph Eur, USP	441
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AG0010	Water with 0,1% ammonium acetate, LC-MS	443
AG0008	Water with 0,1% formic acid, LC-MS	443
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RE0070	Wijs solution, ICl solution 0,1 mol/l (0,2 N)	444
XG0010	X-Gal, for biochemical purposes	445
XI0025	o-Xylene, extra pure, Reag. Ph Eur	445
XI0050	Xylene, mixture of isomers, synthesis grade	445
XI0051	Xylene, mixture of isomers, extra pure	445
XI0055	Xylene, mixture of isomers, reagent grade, ACS, Reag. Ph Eur	446
XI0059	Xylene, mixture of isomers, Multisolvent® ACS	446
XI0052	Xylene, mixture of isomers, for histology	446
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CI0160	Zinc chloride, extra pure, Pharmapur®, Ph Eur, BP, USP	447
CI0162	Zinc chloride, reagent grade, ACS, ISO, Reag. Ph Eur	448
CI0155	Zinc chloride, molecular biology grade	448
CI0185	Zinc nitrate hexahydrate, reagent grade	448
CI0195	Zinc oxide, extra pure, Pharmapur®, Ph Eur, BP, USP	448
CI0200	Zinc oxide, reagent grade, ACS, Reag. Ph Eur	448
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# Chemicals and Reagents

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