MilliporeSigma

Empower your lab

EMSURE® | EMPARTA® | EMPLURA®
Inorganics & Solvents for classical analysis

MilliporeSigma is the U.S. and Canada Life Science business of Merck KGaA, Darmstadt, Germany.

Supelco®
Analytical Products

precision Made simple

At MilliporeSigma our goal is to make your daily lab work safer, more efficient, and more reliable. With one word: smarter! Close partnerships with our customers have been at the heart of our progress throughout our long history. They have allowed us to clearly understand your challenges. Our Supelco® Inorganics and Solvents are developed from analytical experts for analytical experts. They stand for precision, accuracy and consistency. And even more, they constantly push the boundaries of innovation.

We provide scientists with best-in-class portfolio particularly for lab applications. Our Life Science portfolio comprises more than 300,000 products, served to you in 66 countries around the world. So whether in your quality control lab, pilot plant or production facility, you'll have the most suitable products, packaging and documentation to conduct your application more easily, efficiently and economically.

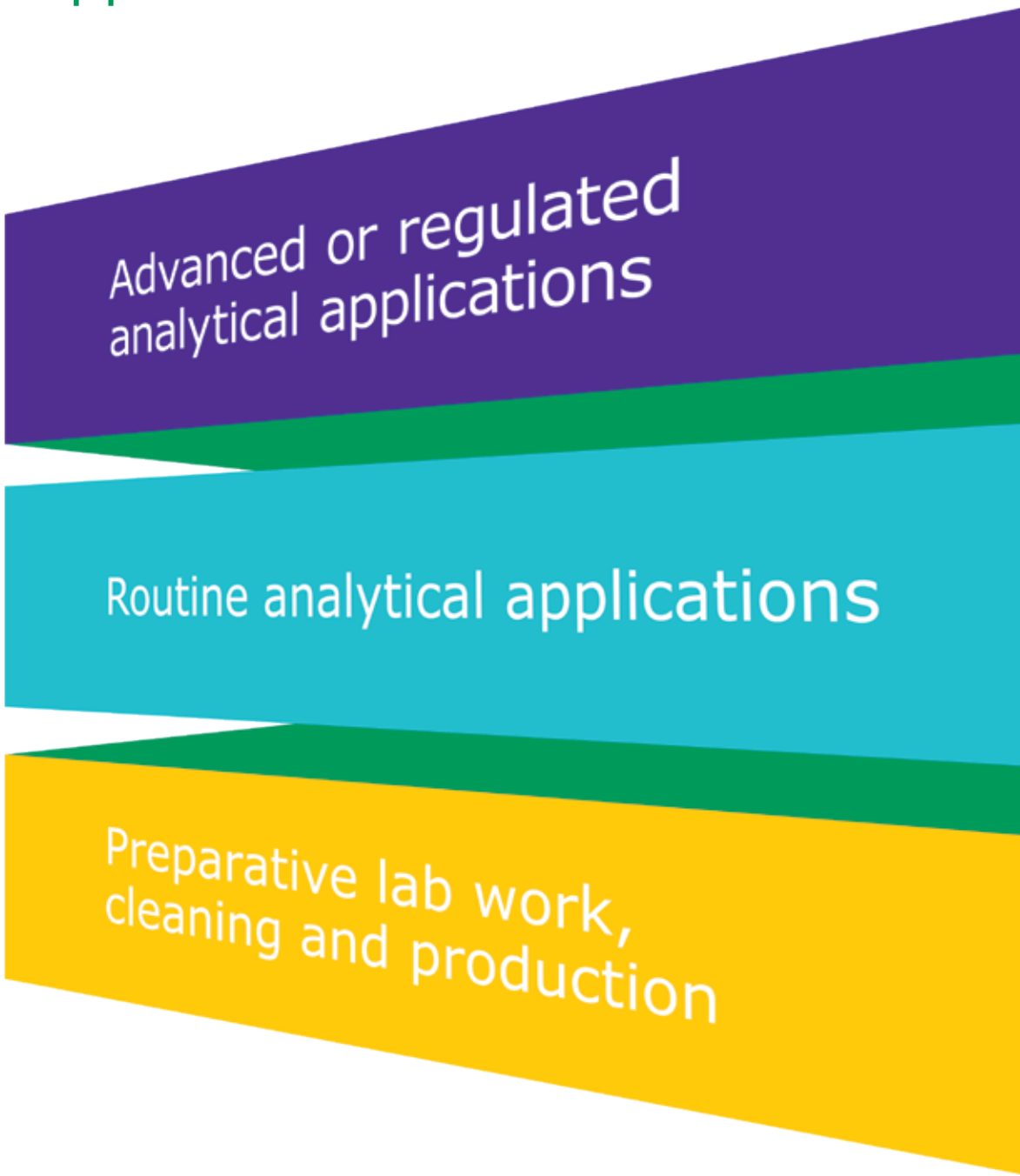
Discover how our Inorganics and Solvents can empower your work.

Supelco®
Analytical Products

The Supelco® portfolio of analytical solutions is developed by analytical chemists for analytical chemists to ensure your results are accurate, precise and reproducible. Every product is meticulously quality controlled to maintain the integrity of your testing protocols and, with our dedicated scientists, the expertise you need is always on hand.

SigmaAldrich.com/Supelco

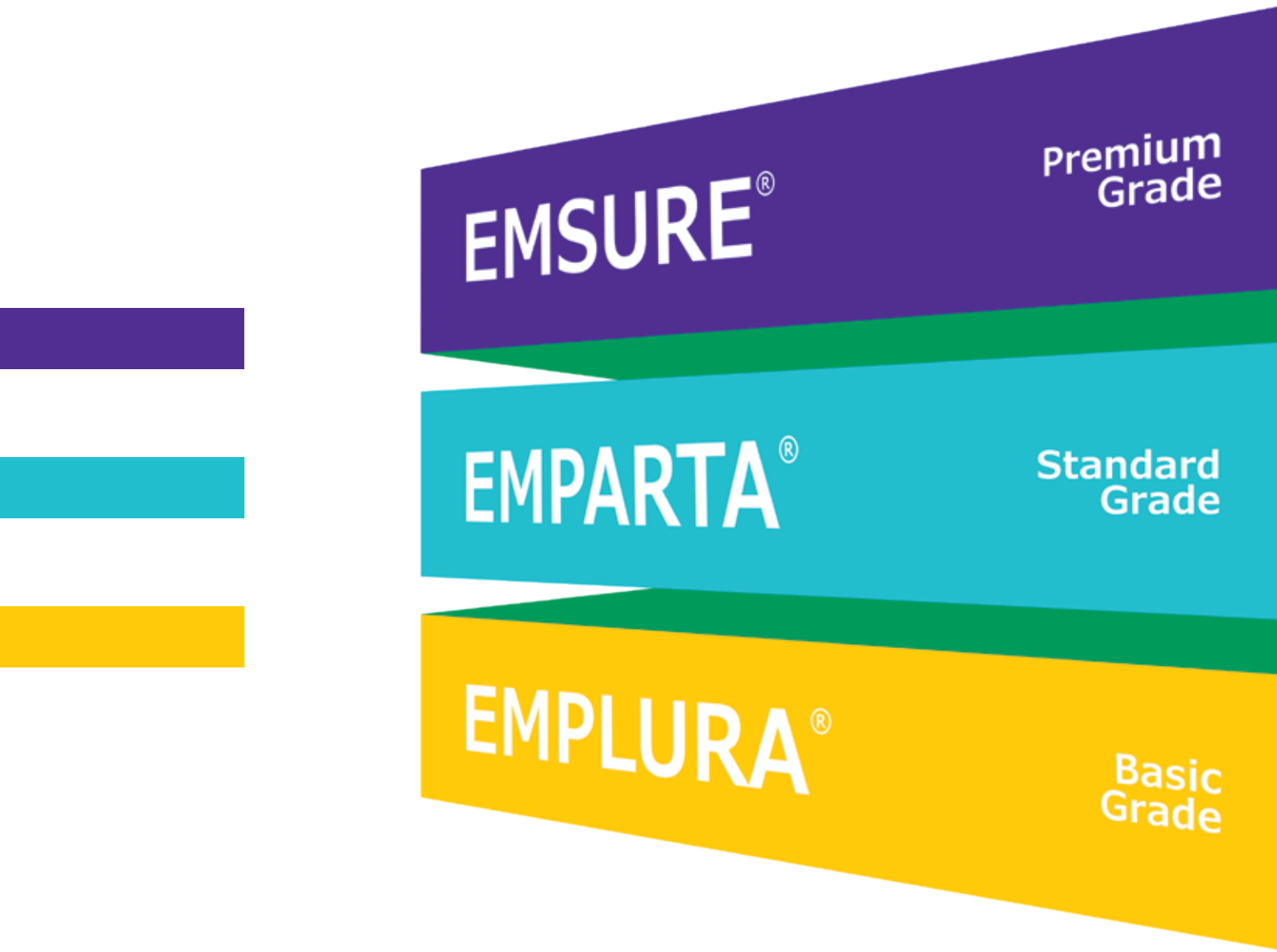
...it's so simple to find the right reagent for your application!



just choose your grade

Analytical chemistry is a vast field. It can mean anything from complex analysis to routine or preparative lab work. Each poses unique demands, requires distinct solutions, and is governed by different regulations. When looking for products, you have to consider your application, your target and, of course, your budget.

To simplify your search, our extensive Supelco® portfolio of Inorganics and Solvents is divided into three grades: EMSURE®, EMPARTA® and EMPLURA®. Each quality grade is offered in a variety of volumes, packaging materials, and required documentation. Now, you won't have to search for the right solution for your application.
All you have to do is choose.



contents

	Regulations	MQ level*	Regulatory support	Purity	Number of specified parameters	
EMSURE®	ACS ISO Reag. Ph Eur	MQ300	CoA's, MSDS, BSE/TSE or AO certificates, Special documentation on request	99.7–99.9%	< 70	Page 22
EMPARTA®	ACS	MQ200	CoA's, MSDS, BSE/TSE or AO certificates	99.0–99.5%	< 10	Page 32
EMPLURA®	–	MQ200	CoA's MSDS	~ 99%	4–5	Page 36

* For more information on MQ levels and the M-Clarity™ program see page 30

Inorganics & Solvents

EMSURE®

EMPARTA®

EMPLURA®

compliance and documentation

Whether you manufacture products nationally or internationally, you need to comply with a host of regulations. It can be challenging to maintain an overview of requirements – especially when they change. This is where a capable partner can help.

Our Inorganics and Solvents are produced and tested according to multiple international guidelines. This means they can be used worldwide for almost all applications. It also allows our global customers to work with the same standard operating procedures (SOPs), and export to countries with different regulations.

By combining multi-standard compliance with comprehensive documentation, our products make your work both simpler and safer.

Regulatory environment

Our analytical reagents are available in different grades, which are specified in accordance with various international regulations.

American Chemical Society (ACS)

EMPARTA® and EMSURE® products are specified according to the monographs published in the "Reagent Chemicals" guidelines of the American Chemical Society (ACS). We follow the most recent online version as the version of record, and regularly check for updates. Our in-depth approach to ACS specifications includes comparison with our own stringent quality control standards.

United States Pharmacopeia (USP)

The "Reagents" chapter of the U.S. Pharmacopeia and National Formulary defines the quality of reagents required for testing according to USP-NF. In most cases, the USP recommends to "use ACS reagent grade", which is described as a grade meeting the corresponding specifications of the online version of ACS Reagent Chemicals. Since EMPARTA® and EMSURE® products are ACS-compliant, they are also ideal for quality control according to USP-NF.

Reagents section of the European Pharmacopoeia (Reag. Ph Eur)

Currently in its 11th edition, the European Pharmacopoeia (Ph Eur) is published by the European Directorate for the Quality of Medicines & Health Care (EDQM), and defines requirements for the "qualitative and quantitative composition of medicines, the tests to be carried out on medicines and on substances and materials used in their production". With its chapter 4, it contains a detailed section describing reagents to be used for analysis in accordance with the European Pharmacopoeia. EMSURE® products fulfill these requirements, and bear the designation, "Reag. Ph Eur".

International Organization for Standardization (ISO)

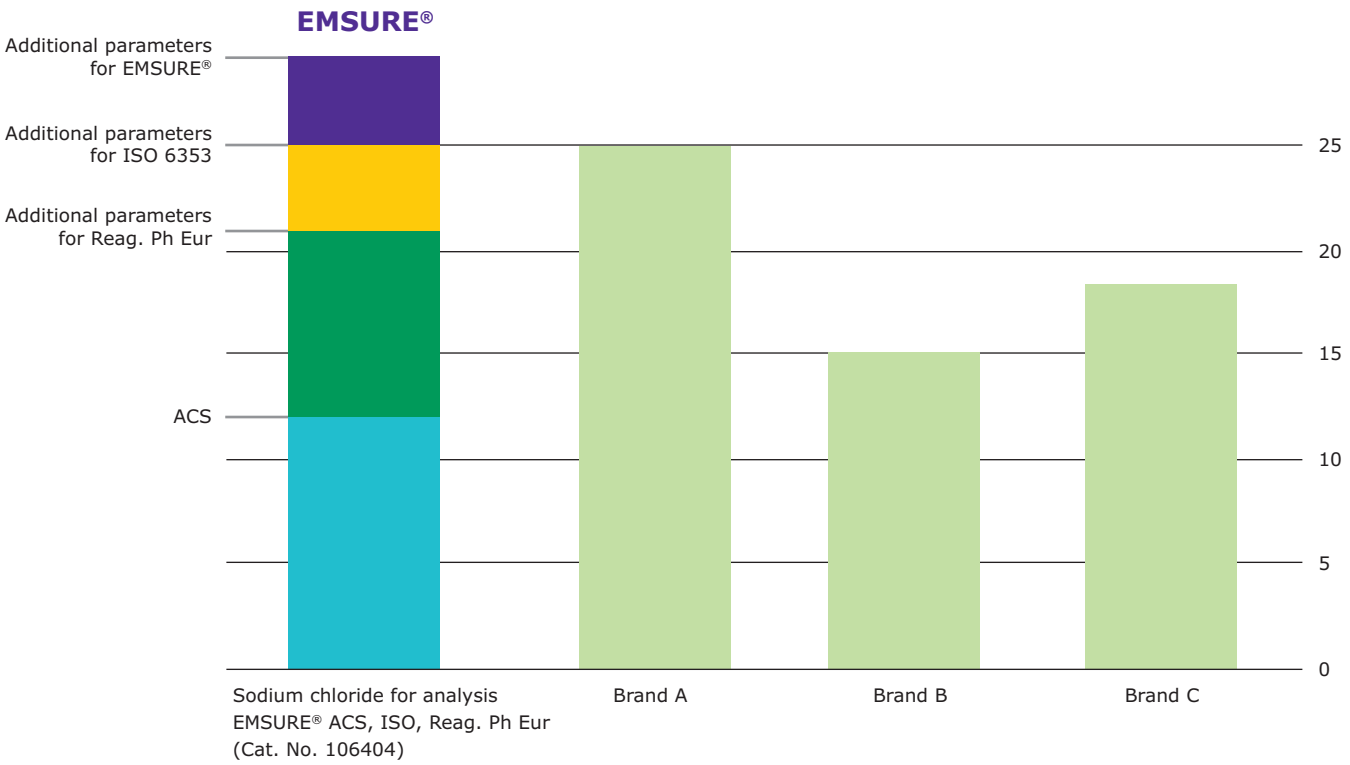
Besides pharmacopoeia regulations, the International Organization for Standardization (ISO) also sets guidelines for analytical reagents. Specifically, ISO 6353 defines the requirements for reagents used in analytical chemistry. All EMSURE® products with the designation "ISO" are compliant with ISO 6353.

Multi-standard compliance and support

We offer a choice of product grades to suit the regulatory environment you work in. EMPARTA® products are specified according to ACS. Most EMSURE® product specifications not only fulfill ACS, Reag. Ph Eur, and ISO guidelines – but exceed them. That's because we are regularly adding new parameters required by our customers. This is essential as it enables the use of advanced, more sensitive technologies.

Superior quality

The following graph demonstrates the number of parameters specified for an EMSURE® product versus those required by regulatory organizations (ACS, Reag. Ph Eur and ISO). Clearly, EMSURE® products not only fulfill international guidelines, but surpass them by far. Brand comparisons confirm the advantages of EMSURE® reagents. In this example, the number of specified parameters clearly demonstrates the superior quality of an EMSURE® product.



Documentation

Complete, correct documentation is vital when working with analytical reagents. That's why we offer product specifications, Certificates of Analysis, and Material Safety Data Sheets (MSDS) for all EMSURE®, EMPARTA® and EMPLURA® products. Available 24/7 on our website, the specifications and Certificates of Analysis prove the superior quality of the chemicals, while the MSDS provides product-specific safety information. The availability of further documentation is connected to the new M-Clarity™ program.

M-Clarity™ program

With the M-Clarity™ program products from MilliporeSigma Life Science are allocated to 6 MQ levels from MQ100 to MQ600 defining the quality attributes, documentation and services offered with our products in each level. EMSURE® products are minimum classified into MQ300, while EMPARTA® and EMPLURA® are in MQ200. This means more support and transparency for our EMSURE® products than ever before.

	MQ level*	Regulatory support
EMSURE®	MQ300	CoA's MSDS BSE/TSE certificates Special documentation on request
EMPARTA®	MQ200	CoA's MSDS BSE/TSE or AO certificates
EMPLURA®	MQ200	CoA's MSDS

▶ **For more information see page 22**

▶ **For more information see page 32**

▶ **For more information see page 36**

* For more information on MQ levels and the M-Clarity™ program see page 30

pharmaceutical analysis

With suitable, specified reagents

We supply several hundred Inorganics and Solvents perfectly fitted for pharmaceutical analysis – the most extensive range offered by any manufacturer. Comprising solvents, acids, salts, caustics, bases, indicators and special reagents, our pharmacopoeia portfolio ensures that you work with the most suitable products for your particular needs and that they meet all quality guidelines.

For pharmaceutical analysis, you have the choice of two grades: EMSURE® or EMPARTA®. While both grades comply with ACS standards, EMSURE® products also fulfill the Reagents requirements of the European Pharmacopoeia.

Fulfill global requirements

Through compliance with these comprehensive global standards, our analytical reagents offer a new level of quality and reliability in pharmaceutical applications. Whether for research and development or routine quality control, they allow you to fulfill the fundamental prerequisites of your scientific work and successfully pass audits.

Ensure reliable analyses

Reagent quality is decisive in pharmaceutical analysis. The higher and more consistent the quality, the more reproducible the results, and the lower the need for repeat analyses. Due to their exceptional quality and purity, our analytical reagents provide you with greater accuracy and efficiency from the start.

Soar with our high standards

Our product quality not only complies with international regulations, but also fulfills the Merck KGaA, Darmstadt, Germany rigorous pharmaceutical guidelines – which are even more stringent for most products. Due to our unique, superior quality standards and additional parameters, our reagents offer maximum purity and security.

Regulations

EMSURE®	ACS (Reag. USP) ISO Reag. Ph Eur

▶ **For more information see page 22**

EMPARTA®	ACS (Reag. USP)

▶ **For more information see page 32**

Specification

Reag. Ph Eur = Reagents section of the European Pharmacopoeia
ACS = American Chemical Society
ISO = International Organization for Standardization (refers to ISO regulation 6353)
USP = United States Pharmacopoeia (refers to ACS for reagents)

specifications and purity

Reliable quality for trusted results

Our reagents and chemicals are renowned for their outstanding quality and purity. We achieve and maintain this reputation through three important measures: validation, accreditation, and compliance with regulations. Every step in our supply chain is subject to the most stringent controls and fully documented to give you complete confidence in your analysis.

Purity

Decades of experience with highly pure chemicals, combined with cutting-edge production and filling plants, ensure that what you order is what you receive. We only use high-quality raw materials and manufacture under strictly controlled conditions using our advanced methodology. This results in outstanding chemical purity and extremely low limiting values, which makes our products the ideal choice for reliable qualitative and quantitative analyses.

Quality control

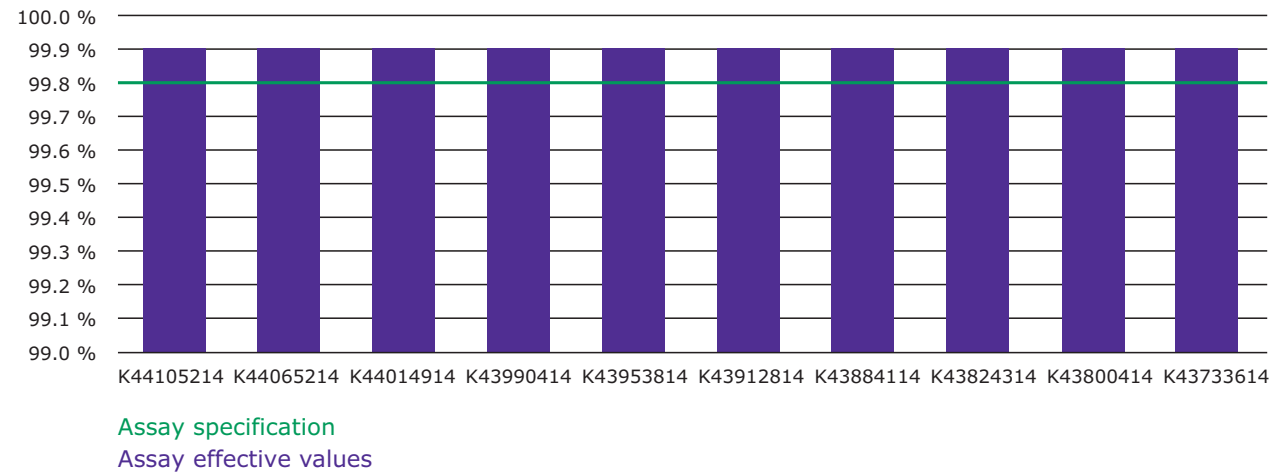
All our Inorganics and Solvents are tested and certified in our own state-of-the-art laboratories under the guidance of highly qualified specialists. We have quality control labs at every production site, which work closely together to ensure comparable test procedures and results. During testing, we always adhere to international standards and legal requirements, and integrate the latest developments in technology and methods. So you can trust on our analytical competence. EMPARTA® and EMPLURA® grade products are tested at one of our own labs close to its production site. EMSURE® grade products are quality controlled at our Merck KGaA, Darmstadt, Germany site.

Consistency

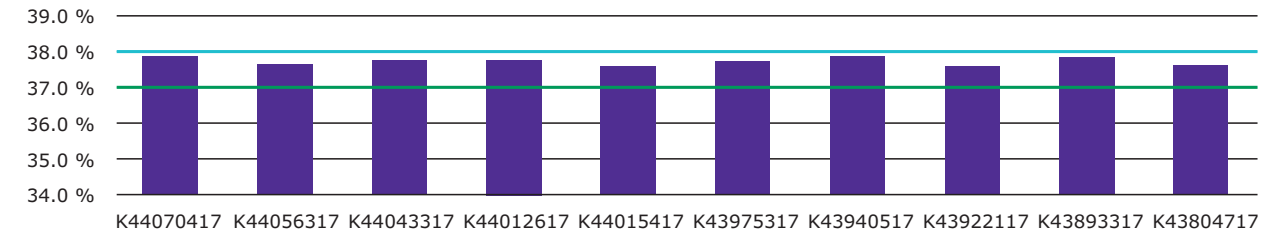
Due to their outstanding batch-to-batch consistency, each time you use our products, you can expect the same excellent quality. This not only ensures reproducible results, but also avoids the costs and complications of repeat analyses. The graphs on the right demonstrate the superior batch-to-batch consistency of some of our products.

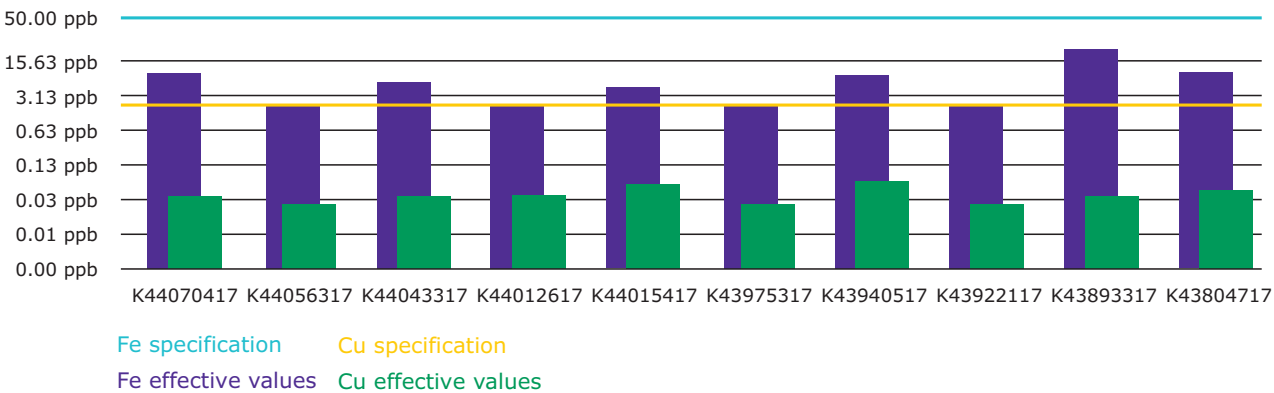
Every step in our supply chain is subject to the most stringent controls and fully documented to give you **complete confidence** in your analysis.

Acetone for analysis EMSURE® ACS, ISO, Reag. Ph Eur



Hydrochloric acid fuming 37% for analysis EMSURE® ACS, ISO, Reag. Ph Eur





Our promise of exceptional quality

Unrivalled specifications
Our reagents and solvents often offer additional specifications beyond those required by international guidelines, such as ISO, ACS and Reag. Ph Eur. Many are measured for up to 70 parameters! Furthermore, thanks to our proven Quality Management System, we are able to continuously improve our specifications.

Application-optimized
The differences in our quality grades are clearly shown in their individual specifications. Regardless of the grade you choose, you will always receive a product of excellent quality that's perfectly suited to your application.

Dedicated service
For us, quality encompasses more than product purity and consistency. It also means service that exceeds expectations. Whether you require regulatory support, application advice, or a specific product, our experienced team is always at hand to work closely with you and deliver swift, innovative solutions.

	Regulatory support	Purity	Number of specified parameters
EMSURE®	The most extensive specifications worldwide!	99.7–99.9%	< 70
EMPARTA®	All ACS requirements	99.0–99.5%	< 10
EMPLURA®	All basic parameters	~ 99%	4–5

Certificate of Analysis

1.04933.0500 Potassium chloride for analysis (<= 0.005% Br) EMSURE® ACS,ISO, Reag. Ph Eur
Batch A1554533

	Spec. Values		Batch Values	
Assay (argentometric)	99.5 - 100.5	%	99.6	%
Assay (argentometric; calculated on dried substance)	99.0 - 100.5	%	99.6	%
Identity	passes test		passes test	
Appearance of solution	passes test		passes test	
Insoluble matter	≤ 0.005	%	≤ 0.005	%
pH-value (5 %; water)	5.5 - 8.0		6.1	
Acidity or alkalinity	passes test		passes test	
Bromide (Br)	≤ 0.005	%	≤ 0.005	%
Chlorate and Nitrate (as NO_3)	≤ 0.003	%	≤ 0.003	%
Iodide (I)	≤ 0.002	%	≤ 0.002	%
Iodide (I)	passes test		passes test	
Phosphate (PO_4)	≤ 0.0005	%	≤ 0.0005	%
Sulfate (SO_4)	≤ 0.001	%	≤ 0.001	%
Total nitrogen (N)	≤ 0.001	%	≤ 0.001	%
Heavy metals (as Pb)	≤ 0.0005	%	≤ 0.0005	%
Ba (Barium)	passes test		passes test	
Ca (Calcium)	≤ 0.001	%	≤ 0.001	%
Fe (Iron)	≤ 0.0002	%	≤ 0.0002	%
Mg (Magnesium)	≤ 0.0005	%	≤ 0.0005	%
Na (Sodium)	≤ 0.005	%	≤ 0.005	%
Magnesium and alkaline-earth metals (as Ca)	≤ 0.02	%	≤ 0.02	%
Loss on Drying (105 °C)	≤ 1.0	%	< 0.2	%

Corresponds to ACS,ISO,Reag. Ph Eur

Date of release (DD.MM.YYYY) 02.04.2020
Minimum shelf life (DD.MM.YYYY) 31.12.2024

Claudia Wiegand
Responsible laboratory manager quality control

This document has been produced electronically and is valid without a signature.

EMSURE® products combine maximum specifications with minimum impurities. Their Certificates of Analysis provide an extended impurity profile for each batch, and detailed batch values for each specification parameter. This avoids misinterpretation of results, and gives you greater control of your analysis, especially when developing new methods.

safety and packaging

Protecting people, products and the planet

Besides offering premium chemicals and reagents, we have invested decades into developing the most advanced packaging concepts in the field of chemistry. Our innovative packaging and withdrawal systems are precisely tailored to the contents, and based on sustainable principles to not only protect your personnel and products, but also the environment.

Ergonomic, unbreakable HDPE bottles for reagents

- Safe and unbreakable
- High pressure stability
- Eco-friendly
- Cost-efficient
- 2.5 L HDPE bottle with convenient integrated handle
- NEW 1 L HDPE bottle with improved design and ergonomic recessed grip

Robust, PE-coated Safebreak bottles for acids

- Safe handling of acids
- Long shelf-life as with conventional glass bottles
- Easy, eco-friendly disposal (with glass)

Environmentally friendly, returnable stainless steel drums for solvents

- Safe, easy and convenient handling of solvents
- Ecological, returnable container
- Cost effective solution
- Suitable withdrawal systems available

Development and testing

Our internal packaging department is exclusively responsible for testing, developing and approving packaging materials. Our package testing facility is accredited by the German Federal Institute for Materials Research and Testing (BAM – Bundesanstalt für Materialforschung und -prüfung), the authority responsible for the packaging of dangerous goods.

Grades and options

All our products are delivered in sophisticated and suitable packaging. The choice of packaging, however, varies from grade to grade. EMSURE® products are available in a large variety of packaging sizes and materials to suit your particular application and requirements. EMPARTA® and EMPLURA® products are offered in standard pack sizes, for example, 1 kg or 25 kg for solids, and 2.5 L, 4 L, or 25 L for liquids.

Packaging advantages

- Packaging is always compatible with the product
- Safe and convenient handling, storage and transportation
- Optimal protection of chemicals and reagents from contamination
- Application-oriented packaging
- Wide choice of packaging materials and sizes

▶ **For more details about our packaging, please see "Packaging and Safe Handling" on page 42**

Well-protected

Our packaging protects products against damage and tampering. Our bottles with S40, S60, S85 thread have an improved tamper evident seal with a ring remaining on the bottle neck.

smart label

Easier, faster, better data handling

Enjoy the simplest, quickest way to access data with our smart label which is equipped with a 2D data matrix barcode. It contains all the essential product information you require, such as item code, batch number, shelf life, country of origin and links to documentation like CoA, and SDS – all in digitalized form.

No need to manually search for and enter data into your system. No more typos, repetitions, or lost time. The 2D barcode is programed using Global Standard One (GS1) specifications, so it can be processed directly in your LIMS or ERP system. For even greater convenience, use one of our innovative, intuitive web and mobile apps.

The smart label with a real 2D barcode. It’s precision made simple – for analytical chemists by analytical chemists.

Features and benefits

- Easy, quick and convenient
- Digitalized, up-to-date product data
- Minimized errors, greater security
- Seamless access to safety data
- 2 mobile apps for smartphones and tablets
- Scan Now web app for use with barcode scanner
- Direct processing in LIMS or ERP system

3 smart ways to easy data access

1. My M Safety mobile app for safety data and tags
Use your smartphone and our My M Safety app to access product safety data and print safety tags – all in accordance with your local regulations, and in your local language. Discover safety data as easy and convenient as never before. The app is available for iOS and Android systems.

2. Scan Now web or mobile app for product info and documents
Access documents, like CoA, MSDS and product related literature, with our Scan Now web app. Simply connect a standard barcode scanner to your PC or laptop, visit **SigmaAldrich.com/ScanNow** and scan the 2D barcode.

For even easier data handling without a barcode scanner, use our Scan Now mobile app and your smartphone camera. The app is available for iOS and Android systems.

3. LIMS or ERP system for direct scanning of 2D barcode
Thanks to the universal GS1 data encoding of our 2D barcode, you can insert all product data straight into your application via your LIMS or ERP system.

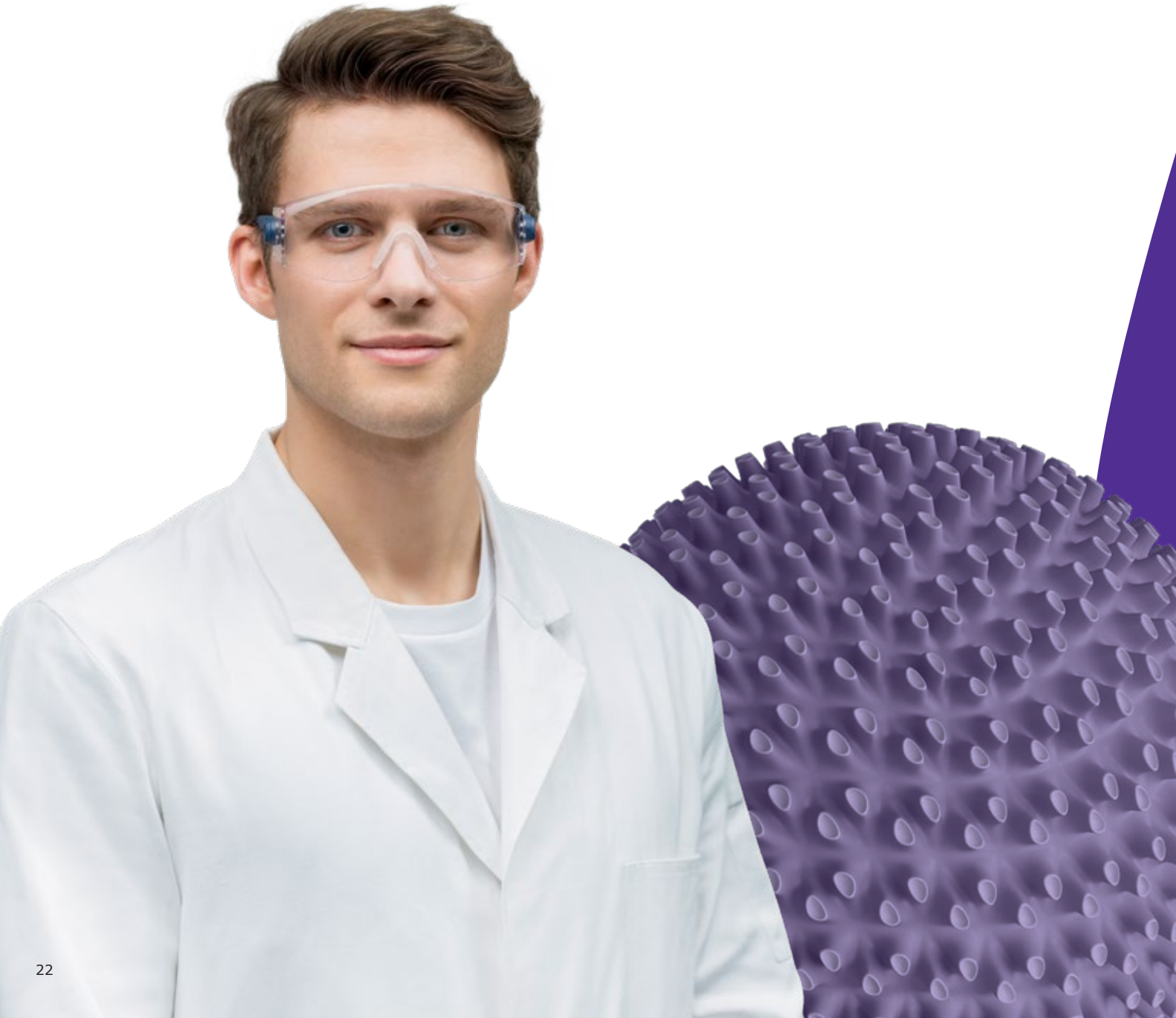
Learn more about our smart labels:
SigmaAldrich.com/smartup

Scan with
"My M Safety" or
"ScanNow" app
Available on
Apple App Store &
Google Play

EMSURE®
Premium Grade Products

Inorganics and Solvents – for advanced or regulated analytical applications

The EMSURE® brand designates our premium grade Inorganics and Solvents, which are optimized for regulated analyses and advanced lab applications. These products offer the highest quality and an unmatched scope of specifications to give you complete control of test conditions and eliminate uncertainties. What's more, EMSURE® Inorganics and Solvents are fully compliant with international regulations, and are suitable for an extraordinarily wide range of applications. So when you want to be more than sure: choose EMSURE® products.



Highest convenience and safety

▶ Page 26

Obtain more accurate and reliable results

▶ Page 24

Fulfill regulatory requirements

▶ Page 27

Know your impurity profile

▶ Page 22

Worldwide availability

▶ Page 27

Enhanced documentation and support

▶ Page 28

EMSURE®

Premium Grade Products

EMSURE®
Premium Grade Inorganics and Solvents

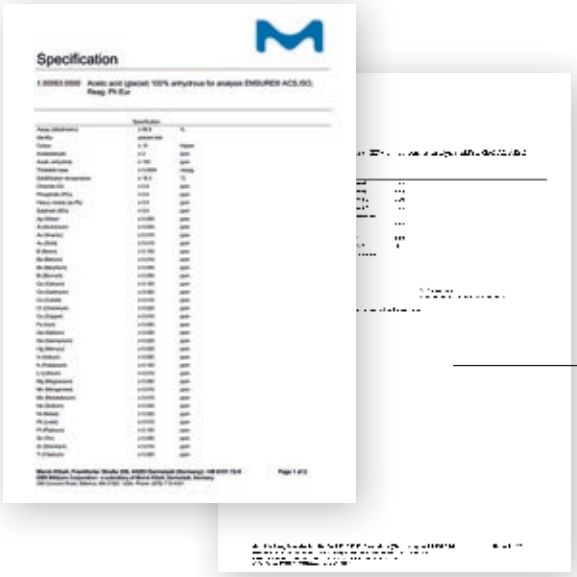
Extended impurity profile – superior purity and clarity
New analytical methods have lower detection limits and higher sensitivity. Hence, reagents of greater purity are required. EMSURE® products are the perfect choice. They not only offer superior quality, but also more extensive product information to prepare you for any analytical challenge.

All EMSURE® products are made from high-quality raw materials in our state-of-the-art production facilities, then tested for up to 70 parameters at our stringent quality control labs in Darmstadt, Germany. This results in outstanding chemical purity and extremely low limiting values. Every EMSURE® product comes with a comprehensive Certificate of Analysis, which includes an extended impurity profile for each batch. This gives you absolute analytical security, and prevents misinterpretation of results caused by impurities.

Your benefits

- Most extensive specifications worldwide
  - Tested for up to 70 parameters
  - Extraordinary purity
  - Very low limiting values
- Greater accuracy and control of analyses
- Optimized for highly critical and demanding analyses
- Ideal for method development
- No interference or contamination due to unknown impurities

Acetic acid (glacial) 100% anhydrous for analysis EMSURE® Premium Grade Inorganics and Solvents, ACS, ISO, Reag. Ph Eur



Acetic acid (glacial)

100% anhydrous for analysis EMSURE®

Water	≤ 0.2%
Zr (Zirconium)	≤ 0.050 ppm
Zn (Zinc)	≤ 0.030 ppm
V (Vanadium)	≤ 0.010 ppm
Tl (Thallium)	≤ 0.020 ppm
Ti (Titanium)	≤ 0.050 ppm
Sr (Strontium)	≤ 0.010 ppm
Sn (Tin)	≤ 0.050 ppm
Pt (Platinum)	≤ 0.100 ppm
Phosphate (PO_4)	≤ 0.4 ppm
Ni (Nickel)	≤ 0.020 ppm
Na (Sodium)	≤ 0.200 ppm
Mo (Molybdenum)	≤ 0.010 ppm
Mn (Manganese)	≤ 0.010 ppm
Mg (Magnesium)	≤ 0.050 ppm
Li (Lithium)	≤ 0.010 ppm
K (Potassium)	≤ 0.100 ppm
In (Indium)	≤ 0.050 ppm
Hg (Mercury)	≤ 0.005 ppm
Ge (Germanium)	≤ 0.020 ppm
Ga (Gallium)	≤ 0.050 ppm
Cr (Chromium)	≤ 0.020 ppm
Co (Cobalt)	≤ 0.010 ppm
Cd (Cadmium)	≤ 0.020 ppm
Ca (Calcium)	≤ 0.100 ppm
Bi (Bismuth)	≤ 0.050 ppm
Be (Beryllium)	≤ 0.005 ppm
Ba (Barium)	≤ 0.010 ppm
B (Boron)	≤ 0.100 ppm
Au (Gold)	≤ 0.010 ppm
As (Arsenic)	≤ 0.010 ppm
Al (Aluminium)	≤ 0.020 ppm
Ag (Silver)	≤ 0.005 ppm
Acetaldehyde	≤ 2 ppm

Additional parameters for EMSURE® products

Pb (Lead)	≤ 0.010 ppm
Cu (Copper)	≤ 0.010 ppm

Additional parameters for ISO 6353

Solidification temp.	≥ 16.3 °C
Identity	passes test

Additional parameters for Reag. Ph Eur

ACS

Titratable base	≤ 0.0004 meq/g
Substances reducing $KMnO_4$	≤ 20 ppm
Substances reducing $K_2Cr_2O_7$	passes test
Fe (Iron)	≤ 0.050 ppm
Heavy metals (as Pb)	≤ 0.5 ppm
Sulphate (SO_4)	≤ 0.4 ppm
Chloride (Cl)	≤ 0.4 ppm
Acetic anhydride	≤ 100 ppm
Evaporation residue	≤ 5 ppm
Dilution test	passes test
Color	≤ 10 Hazen
Assay (alkalimetric)	≥ 99.8 %

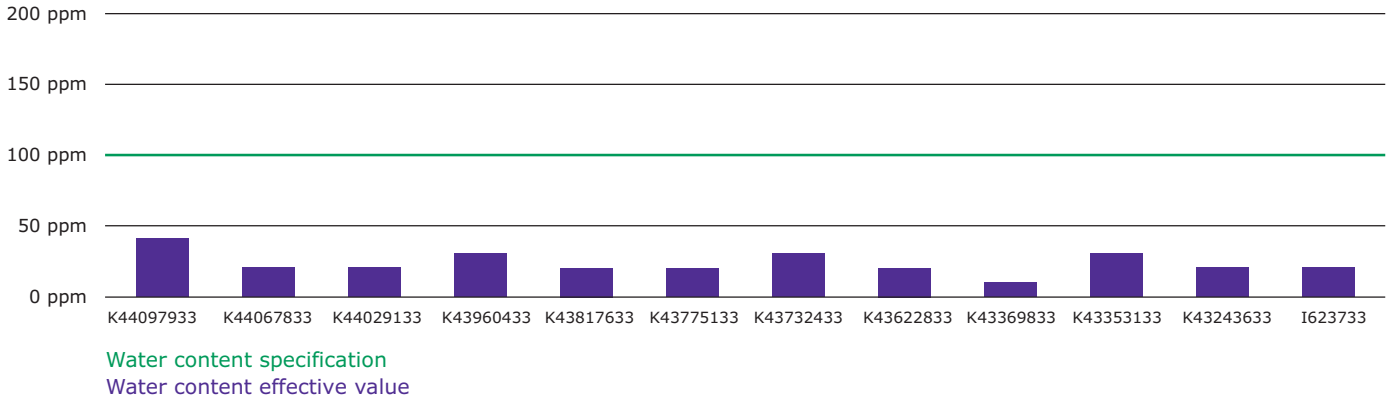
EMSURE®
Premium Grade Inorganics and Solvents

Accuracy and reliability – absolute trust – every time
Thanks to their outstanding batch-to-batch consistency, each time you use EMSURE® products, you can expect the same excellent quality. This not only ensures reproducible results, but also reduces your analytical costs. Now, you can avoid repeat analyses, and won't need to stock up on specific product batches.

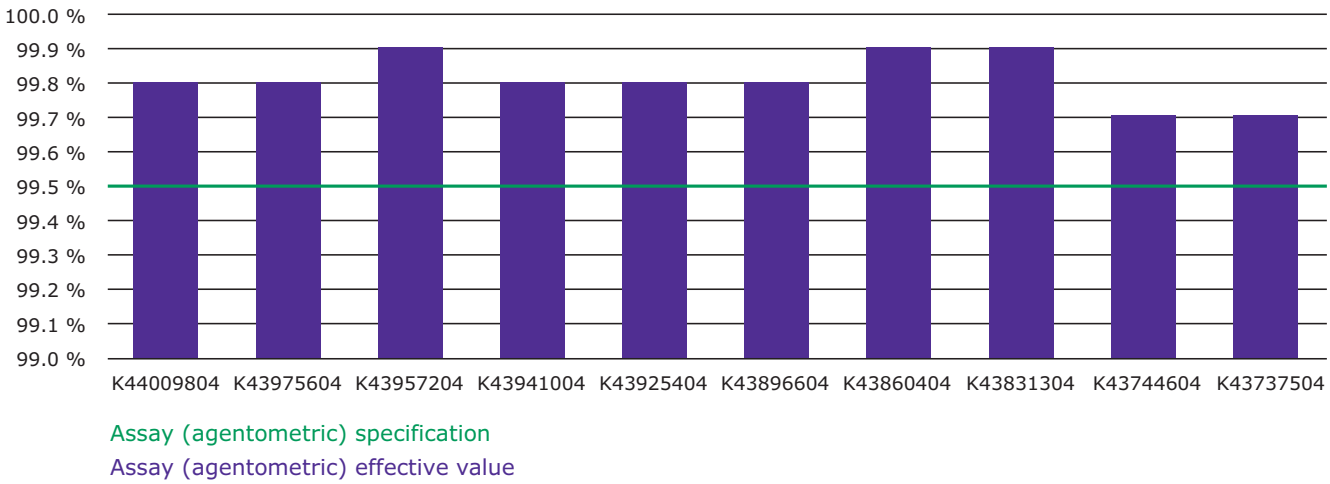
- Unmatched batch-to-batch consistency
- Reliable and reproducible results
- Lower analytical costs
- No repeat analyses

Lab technician Tom scans the 2D barcode with his mobile phone using the ScanNow app

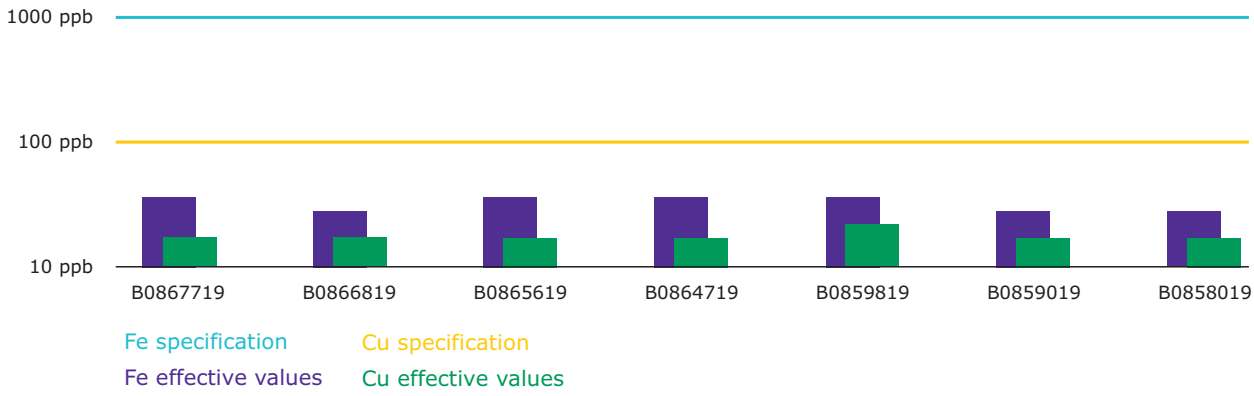
Chloroform for analysis EMSURE® ACS, ISO, Reag. Ph Eur



Sodium chloride for analysis EMSURE® ACS, ISO, Reag. Ph Eur



Perchloric acid 70–72% for analysis EMSURE® ACS, ISO, Reag. Ph Eur



EMSURE®
Premium Grade Inorganics and Solvents

Convenience and safety – packed with innovation

Most EMSURE® products offer top quality both inside and out. Through continuous innovation, we have developed various packaging and withdrawal systems, which are precisely tailored to the contents. Our solutions offer secure and convenient usage for lab personnel, while being safer for the planet.

- Packaging is always compatible with the product
- Safe and convenient handling, storage and transportation
- Optimal protection of chemicals and reagents from contamination
- Application-oriented packaging
- Wide choice of packaging materials and sizes

Safebreak bottle for EMSURE® acids and unbreakable HDPE bottles for acids, solvents and bases.

Regulatory compliance – specified beyond standards

Most EMSURE® product specifications not only fulfill ACS, Reag. Ph Eur and ISO guidelines – but surpass them. That's because we are regularly adding new parameters required by our customers. As a result, EMSURE® products can be used around the world for almost all applications, including pharmacopoeia analysis. Due to their extensive specifications, EMSURE® products are also suitable for use with the latest technologies, such as detecting concentrations of metals via atomic absorption spectroscopy (AAS).

- Compliance with ACS, ISO and / or Reag. Ph Eur (Please see "Compliance and Documentation")
- Most products' specifications exceed international standards
- Suitable for pharmacopoeia analysis
- Can be used internationally

Global availability – one excellent quality – worldwide

Whenever or wherever you require EMSURE® Inorganics and Solvents, we serve you the same excellent quality all around the world. This, combined with multi-standard compliance, means that our multinational customers can work with the same standard operating procedures (SOPs), and export to countries with different regulations.

- Identical quality worldwide
- Comparable results
- Work with one global SOP
- Suitable for global export

EMSURE®
Premium Grade Inorganics and Solvents

EMSURE® Documents & Support

Advanced applications often require enhanced support regarding supplier quality. For EMSURE® products, we offer comprehensive documents that go far beyond CoA or MSDS, and include important change agreements for critical product modifications.

Your advantages:

- Streamlined lab work
- Time and cost savings
- Superior comparability of results
- Certainty during product use
- Accuracy regarding impurities
- Confidence in analysis and production
- Transparency & security in demanding processes

The M-Clarity™ Program

The M-Clarity™ Program includes the majority of our Life Science products classified into 6 MQ levels (MQ100 to MQ600).

- Each level provides specific documentation and services.
- The levels have increasing attributes to meet your application and regulatory requirements.
- Transparency allows you to select the right product for your needs regarding change control notifications and documentation support.

All EMSURE® products are part of the M-Clarity™ program and are classified to a minimum level of MQ300, while EMPARTA® and EMPLURA® are at level MQ200. This means you enjoy even greater support and transparency with EMSURE® products.

MQ300 – Enhanced Control

EMSURE® products at the MQ300 level offer:

1. Documentation support

- Specification/Certificate of analysis
- MSDS
- ISO certificate
- Site self-assessment
- Country of origin statement
- BSE/TSE or AO certificate
- Test methods*

*** Optional purchase**

2. Enhanced change control notification support

- Discontinuation of product
- Change of product specification (excluding compendial changes)
- MQ level downgrade
- Change of general shelf life
- Change in test method (non-compendial)
- Change of primary packaging material

Please contact your customer service for further details.

EMPARTA®
Standard Grade Products

Inorganics and Solvents – for routine analytical applications

With EMPARTA® products, we offer a range of high-quality, cost-efficient Inorganics and Solvents for routine analytical applications. These standard-grade products offer fewer test parameters than EMSURE® products. Still, EMPARTA® product specifications are fully compliant with ACS requirements and cover all important parameters, thus ensuring reliable and reproducible results.

Standard quality for routine applications

▶ Page 35

Compliant with ACS

▶ Page 34

Convenient lab-sized packaging

▶ Page 35

Reliable results

▶ Page 35

Efficient and cost-effective solution

▶ Page 35

EMPARTA®
Standard Grade Products

EMPARTA®
Standard Grade Inorganics and Solvents

Compliant with ACS
The quality of EMPARTA® Inorganics and Solvents is tested according to the specifications of the monographs published in the “Reagent Chemicals” guidelines of the American Chemical Society (ACS). We follow the most recent online version as the version of record, and regularly check for updates. Our in-depth approach to ACS specifications includes comparison with our own stringent quality control standards.

Reagents for analysis according to USP
The “Reagents” chapter of the U.S. Pharmacopeia and National Formulary defines the quality of reagents required for testing according to USP-NF. In most cases, the USP recommends to “use ACS reagent grade”, which is described as a grade meeting the corresponding specifications of the current edition of “Reagent Chemicals” published by the ACS. Since EMPARTA® products are fully compliant with ACS guidelines, they are ideal for quality control according to USP-NF.

Standard quality for routine lab applications

EMPARTA® products offer just the parameters you really need – including all those required by the ACS. Hence, they are the perfect choice for reliable quality control and routine analytical applications in less regulated industries.

Reliable results

EMPARTA® Inorganics and Solvents feature a high analytical purity of 99.0–99.5%. Thanks to our sophisticated production chain, particulate impurities and cross-contamination from other products are completely ruled out.

Efficient and cost-effective solution

From raw materials to specifications, packaging and documentation, every aspect of EMPARTA® products is designed to make your analytical lab applications as cost-effective as possible – without sacrificing quality.

Convenient lab-sized packaging

EMPARTA® Inorganics and Solvents typically come in HDPE or amber glass bottles, which are the perfect size for working in the lab. Our tailor-made packaging offers multiple safety features.

▶ **Learn about them in the chapter "Packaging and Safe Handling" (page 42).**

EMPLURA®
Basic Grade Products

Inorganics and Solvents for preparative lab work, cleaning and production

For many basic applications, you don’t need chemicals of the highest purity – you need a cost-effective solution with reliable quality that is available in large quantities. The EMPLURA® product range is ideal for basic lab work and production applications. These economical Solvents and Inorganics offer adequate specifications with the most common parameters, and are available in small pack sizes as well as in bulk quantities.

Economical solution

▶ Page 38

Adequate specifications with most common parameters

▶ Page 38

Suitable for numerous basic applications

▶ Page 38

Completely flexible pack sizes

▶ Page 38

Greener chemical alternatives

▶ Page 39

EMPLURA®

Basic Grade Products

EMPLURA®
Basic Grade Inorganics and Solvents

Suitable for numerous basic applications
The EMPLURA® product range includes a broad selection of the most important Inorganics and Solvents. Easily find the most suitable solutions for numerous basic applications, such as preparative lab work, cleaning or standard production processes.

Economical solution
Why pay for high purity when your application only requires basic quality? EMPLURA® Inorganics and Solvents are your economical answer for reliable results at a reasonable price.

Completely flexible pack sizes
Our standard packaging options vary from 1 L glass bottles to 190 L drums. However, we can offer even larger quantities, such as intermediate bulk containers (IBCs) or tank containers, on request.

Adequate specifications
EMPLURA® products are mainly tested for preparative lab applications and standard production processes. Hence, we only monitor the basic parameters that are important in these applications, such as purity, identity, density, evaporation residue and water content. In most cases, the purity exceeds 98%.

Sustainable and safer solvent alternatives

The products we create help our customers improve people's lives every day, but we recognize that every product we make also has an environmental impact. That's why we are committed to continually enhancing the sustainability performance of our products and adopting environmentally friendly chemical processes.

Our advances include bio-based solvents that avoid the use of non-renewable resources, as well as safer substitutes for commonly used solvents that pose health or environmental concerns.

EMPLURA®
Basic Grade Inorganics and Solvents

Bio-Based Solvents

One of the sustainable initiatives we actively pursue is the change from solvents based on synthetic chemicals to those from renewable raw materials. Whenever possible, we favor chemical products which preserve functional efficacy while reducing toxicity and environmental impact. Since their supply risk is independent of petrochemical production, bio-based solvents are also reliably available. Furthermore, production processes are safer for the environment than with fossil-based solvents.

Bio-Based Ethanol*

Instead of synthetic ethanol, we use bioethanol produced from grain or sugar cane. High quality, affordability, and ready availability make our bioethanol an obvious choice for a sustainable future.

Benefits

- Produced from grain or sugar cane, a renewable source
- Less toxic than synthetic ethanol (no toxic by-products)
- Reliable availability
- Production method is safer for the Environment

Ethyl(-)-L-Lactate

Ethyl lactate is a safer and more sustainable alternative to ethyl acetate and acetone.
It is an ester of natural L-lactic acid, which is produced by fermentation of sugar.

Benefits

- Increased user safety due to less toxicity (non-carcinogenic)
- No waste due to 100% biodegradability
- Non-corrosive in contact with metals

2-Methyltetrahydrofuran (Methyl THF)

2-Methyltetrahydrofuran is a safer and more sustainable alternative to dichloromethane and tetrahydrofuran. It is derived from renewable resources, such as corncobs and sugarcane bagasse.

Benefits

- Less solvent consumption due to more efficient extraction and higher reaction yields
- Lower volatility and higher flash point increase user safety
- Limited miscibility in water reduces waste stream
- Reliable availability (independent of petrochemical production)

*** available in EMSURE®, EMPARTA® & EMPLURA® grade**

Synthetic-Based Sustainable and Safer Alternatives

1-Butylpyrrolidin-2-One

1-Butylpyrrolidin-2-one is a safer alternative to N-Methyl-2-pyrrolidone (NMP), N,N-Dimethyl-acetamide (DMA), Dimethyl sulfoxide (DMSO) and N,N-Dimethylformamide (DMF), which face increasing regulatory pressure. As opposed to NMP, DMF and DMA, 1-Butylpyrrolidin-2-one is not classified as developmentally reprotoxic.

Benefits

- Excellent solvency power and water miscibility
- High boiling point
- High chemical and thermal stability
- Not classified as a developmental or geno-toxin
- Inherently bio-degradable
- Lower volatility compared to NMP
- Reliable alternative for REACH-restricted DMA, DMF, NMP

Cyclopentyl Methyl Ether (CPME)

Cyclopentyl methyl ether is a safer substitute for tetrahydrofuran, tert-butyl methyl ether, 1,4 dioxane and other ether solvents. It is produced by a 100% atomic catalytic reaction without any formation of by-products.

Benefits

- Resistance to peroxide formation improves laboratory safety
- One-step reaction saves energy and reduces wastewater
- More stable than tetrahydrofuran
- Higher hydrophobicity increases yields and selectivity
- Limited miscibility in water reduces waste stream

packaging and safe handling

Perfected to protect

▸ For more information about **PE canisters & Fassetts®** see page 61

▸ For more information about **HDPE bottles for solids** see page 58

For us, packaging is not just an empty vessel for products. It is a fundamental aspect of safety, sustainability and reliability. Hence, we pay as much attention to the quality of our outer materials as to their inner contents. This commitment has led to an exceptional range of packaging options that ensure safe transport, storage and handling, while minimizing environmental impact.

▸ For more information about **stainless steel drums** see page 63

▸ For more information about **PE buckets and square boxes** see page 59 & 60

▸ For more information about **steel drums and combi drums** see page 62

▸ For more information about **amber glass bottles** see page 52

▸ For more information about **HDPE bottles for liquids** see page 53

▸ For more information about **Safebreak bottles** see page 56

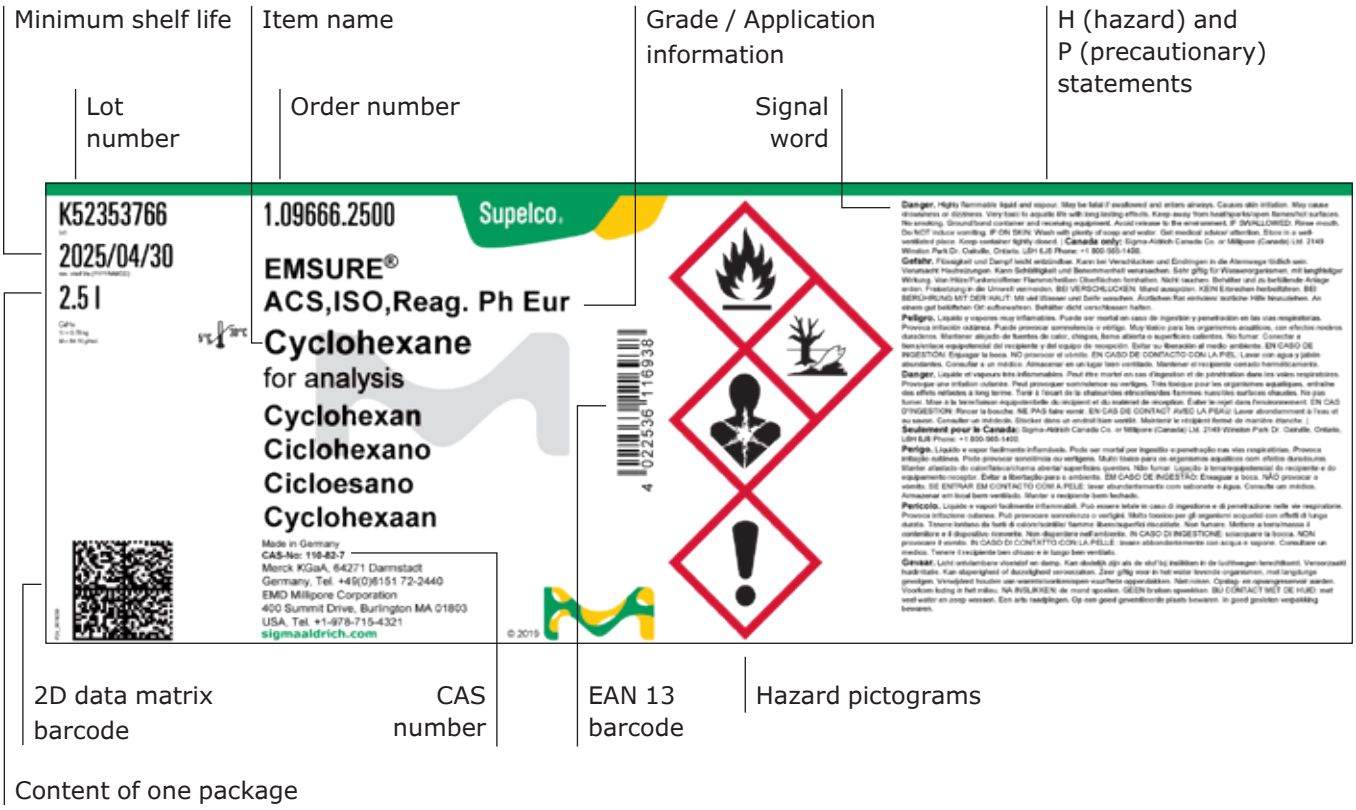
Every detail – optimized and tested

All our packing materials are tailored to their contents and meticulously tested for quality and permeability to preserve the purity of our products. Not only the container, but also the closure, transportation box and withdrawal systems (for solvents, acids and bases) are optimized as a complete packaging concept. Thanks to our high standards, our package testing facility is accredited by the German Institute for Materials Research and Testing (Bundesanstalt für Materialforschung und -prüfung), the authority responsible for the packaging of dangerous goods.

Your advantages

- Application-oriented packaging materials and volumes
- Convenient, safe and contamination-free handling
- Maximum safety through an extensive portfolio of accessories
- Ecological and economical use of returnable containers where suitable
- Individual user installation or other customized solutions possible

Product label



Labeling of Hazardous Chemicals

The MilliporeSigma label for chemical products includes the hazard communication elements according to CLP. Standardized signal words, hazard pictograms and hazard and precautionary statements are a fundamental step towards a worldwide harmonized high safety level. In the European Union the Globally Harmonized System (GHS) has been adopted by the Regulation on classification, labelling and packaging of substances and mixtures (CLP).

Hazard pictograms including the signal word provide a first visual impression for estimating potential risks. H statements describe the type and severity of the hazards posed by a substance or mixture. P statements recommend measures to be taken in order to reduce or avoid negative effects caused by a hazardous substance or mixture.

Labels that last

Our labels provide essential information for our customers. So their durability is a top priority. We use varnished paper labels that are resistant to most chemicals, or apply PE labels wherever necessary. All labels are resistant to abrasion, forgery proof, and adhered with glue that is specially developed for use in the chemicals sector.

Packaging overview
from bottles to tanks


500 mL


1 L


2.5 L


4 L



Glass bottles for acids, bases and solvents

- Safe and convenient handling, storage and transportation
- Special shape of the opening allows optimum pouring
- Secure S40 screw cap with tamperproof seal
- Premium amber blank glass remains inert even to aggressive chemicals
- High pressure resistance
- Pulp packaging for safe transport of glass bottles

  Strong yet light in weight, our molded fiber trays ensure that chemical bottles are optimally protected during transportation and storage. All our pulp packaging is made from recyclable materials, so it also protects the environment.

1 L


2.5 L


5 L



HDPE bottles for acids, bases and solvents

- Made from high-density polyethylene (HDPE)
- Convenient handling and dosage with ergonomic grip for 1 L and integrated handle for 2.5 and 5 L bottles
- Narrow base for efficient use of lab space
- Low tare weight facilitates handling and reduces transport costs
- Secure S40 screw cap with tamperproof seal
- High pressure resistance (particularly for 2.5 L bottle with special base geometry)


500 g

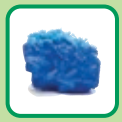

1 kg


2.5 kg


5 kg

HDPE bottles for caustic alkalis and salts

- Made from high-density polyethylene (HDPE)
- Wide opening for easy withdrawal
- Square base allows efficient use of storage space in labs and during transportation
- Compatible with S38 to S85 closure systems



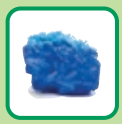

12 kg


25 kg / 50 kg


25 kg / 50 kg

Large packaging for caustic alkalis and salts

- Special packaging for higher volume requirements
- PE inliner is produced in clean room conditions to protect contents
- Corrugated board boxes are glued in a water-resistant manner acc. to DIN 53133 to remain stable even under damp conditions
- Robust construction allows stacking
- PE bucket and boxes for moisture-sensitive and hygroscopic products



Packaging overview
from bottles to tanks


10 L


25 L


190 L

Stainless steel drums for solvents

- Optimum material characteristics avoid interactions with solvents
- Returnable drums reduce costs and environmental waste
- Compatible with a variety of withdrawal systems and level sensors
- Optimum emptying characteristics
- Stackable for efficient use of space


10 L


25 L


180 / 190 L

Steel drums and combi drums for solvents and acids

- Steel drums (10, 25 or 180 / 190 L) with option of PE inliner and special coating depending on contents

25 L

200 L

1,000 L

Other drums and containers

- Special packaging for higher volume requirements
- PE drums (up to 200 L)
- PE canisters
- 1,000 L intermediate bulk containers (IBCs)
- Larger sizes (up to tank containers or tank trucks) also available

Exemplary packaging. Offering depends on suitability with content.

Quantity Guide
Safety comes in many sizes

Our extensive variety of packaging types and sizes is unrivaled in the industry. With volumes from 0.05 L to 20,000 L, and materials from glass and HDPE to metal and stainless steel, we can easily cater to your individual requirements. The guide below will help you select the size and material that best suits your application. Whichever you choose, extraordinary safety comes standard.

Bottles

Metal drums

PE drums, canisters etc.

Pack sizes	**0.5 L – 5 L**	**10 L – 200 L**
Annual consumption	**0.5 L – 100 L**	**> 100 L**
	Standard packaging	Standard packaging range one-way packaging Stainless steel drums optional returnable packaging in Europe • Advantage: no rinsing / cleaning / disposing • Return unrinsed with original labels and tightly closed

Stainless steel drums

Intermediate bulk containers (IBC)

Tank trucks

> 200 L – 20,000 L

> 1,000 L

- Customized products and containers
- Individual processes with rental agreements

Amber glass bottles
for acids, bases and solvents

Pack sizes: 0.5 L to 4 L

Specially developed S40 thread
withstands higher contact pressure and ensures tighter seals

Specially formed, sharp thread lip
for safe drip free pouring

Specially treated high quality glass
with extreme durability due to constant wall thickness for highest safety and product quality

S40 screw cap
Tamper proof closure will remain as ring on the bottle neck

Long shelf life of contents
due to bottle's impermeability to air and water vapor as well as protection against light

Smart label
Unique, clear and complete labeling with all relevant hazard declarations and 2D data matrix barcode

Broad and stable base
for safe stand with low point of gravity

Technical data

Material:
Amber glass, hydrolytic class 3

Available packaging size:
0.5 L, 1 L, 2.5 L and 4 L

Height, diameter and net weight (bottle size):
180 mm, ø 83 mm, ~ 450 g (0.5 L)
222 mm, ø 101 mm, ~ 600 g (1 L)
258 mm, ø 151 mm, ~ 1140 g (2.5 L)
350 mm, ø 162 mm, ~ 1525 g (4 L)

Safety accessories

Adapter with integrated level sensor for our bottles with S40 thread (supply)	9.67100.2001
Adapter with integrated level sensor for our bottles with S40 thread (solvent disposal)	9.67100.2002
Bottle adapter (PTFE), S40 (bottle thread) to GL45 (outer thread)	1.67206.0001
Bottle opening key S40 / S28	1.08801.0001
Display for level sensor	9.67100.2004
Label set for self-labeling lab-mixtures according to GHS, DIN EN ISO & GLP	1.00801.0001
Pouring aid for 1 L and 2.5 L glass bottles with S40 thread (for single-use)	1.02547.0005
Reducer (PE) from S40 to GL45	9.67206.0001
Safety carrier for bottles up to 2.5 L	9.20078.0001
Safety carrier for 4 L bottles	1.40140.0001
Withdrawal system for solvents with manual pressure build-up in S40 bottles	1.78178.0001

HDPE bottles for liquids
for acids, bases and solvents

Pack sizes: 0.25 L to 5 L

Reduced packaging waste (no additional protection material necessary inside cardboard boxes) to protect the environment and to benefit from economical advantages

Specially developed S40 thread
withstands higher contact pressure and ensures tighter seals

Specially formed, sharp thread lip
for safe drip free pouring

New ergonomic design

Ergonomic grip
Optimal handling and pouring

UV protection
for certain chemicals, bottles are colored to protect against UV light

1 L 2.5 L

Low bottle weight
Easy, safe and economical handling and transportation

Ergonomic integrated handle
Optimal handling and pouring

Smart label
Unique, clear and complete labeling with all relevant hazard declarations and 2D data matrix barcode

Special base geometry
Ensures high pressure stability and prevents bulging

Technical data

Material: HDPE

Available packaging size:
0.25 L, 0.5 L, 1 L, 2.5 L and 5 L

Height, diameter, net weight (bottle size):
134 mm, ø 64 mm, ~26 g (250 mL)
153 mm, ø 82 mm, ~50 g (500 mL)
206 mm, ø 101 mm, ~ 66 g (1 L)
322 mm, ø 125 mm, ~ 145 g (2.5 L)
330 mm, ø 178 mm, ~ 335 g (5 L)

Safety accessories

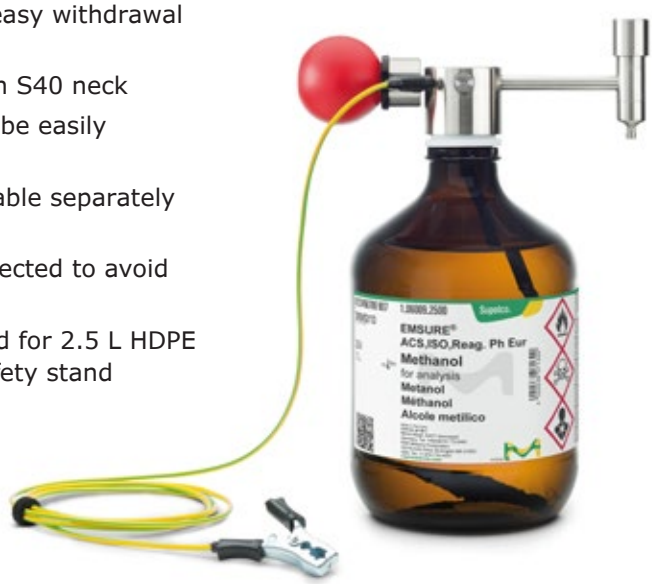
Adapter with integrated level sensor for our bottles with S40 thread (supply)	9.67100.2001
Adapter with integrated level sensor for our bottles with S40 thread (solvent disposal)	9.67100.2002
Bottle opening key S40 / S28	1.08801.0001
Display for level sensor	9.67100.2004
Label set for self-labeling lab-mixtures according to GHS, DIN EN ISO & GLP	1.00801.0001
Safety stand for 2.5 L HDPE bottles	9.67213.0001
Withdrawal system for solvents with manual pressure build-up in S40 bottles	1.78178.0001

Safety accessories for bottles

To further protect you during daily lab work, we offer several safety accessories specially designed for Merck KGaA, Darmstadt, Germany bottles.

Withdrawal system for solvents (1.78178.0001)

- Manual pump system for safe and easy withdrawal of solvents (!) from glass bottles
- Specially designed to fit bottles with S40 neck
- Conductive dip tube (included) can be easily adjusted to the size of the bottle
- Conductive dip tubes are also available separately in packs of 5 (1.78179.0001)
- Grounding cable can be easily connected to avoid the risks of static electricity
- Withdrawal system can also be used for 2.5 L HDPE bottles when combined with the safety stand (9.67213.0001)



Safety carrier for glass bottles up to 2.5 L (9.20078.0001) and up to 4 L (1.40140.0001)

- Secure transport of broken glass bottles and contents
- High-quality PE foam buffer ensures optimal protection
- Additional time for disposal due to chemical resistant materials
- Robust material avoids risk of cuts by glass splinters
- Leak-proof top cover prevents exposure to liquids and vapors
- Stable, broad handle for convenient handling

Bottle key (1.08801.0001)

- Convenient opening and closing of bottles with S40 and S28 screw caps
- Perfectly tailored to our bottles
- Maximum safety when working with hazardous liquids

Pouring aid for 1 L and 2.5 L glass bottles with S40 thread for single-use (1.02547.0005)

- Can be clipped on the bottle neck
- Convenient handling of 1 L and 2.5 L glass bottles
- Suitable for all liquids like acids, bases and solvents
- Is only for single-use and is disposed of with the bottle

Label set acc. to GHS, DIN EN ISO and GLP (1.00801.0001)

- Comprehensive label compliant with GHS, DIN EN ISO and GLP standards
- Complete safety information at a glance with adhesive pictograms and signal words
- Non-permanent adhesive for easy, residue-free removal
- Robust plastic label, resistant to chemicals

Adapter with integrated level sensor for MilliporeSigma bottles with S40 thread for solvent supply (9.67100.2001) and for solvent disposal (9.67100.2002)

- Suitable for solvents (!) in all S40 bottles
- The level sensor is pre-assembled in a S40 screw cap
- Equipped with a clamping screw, the sensor can be adjusted to several bottle sizes or also to the desired level
- Needs to be connected to an alarm display for optical and acoustic signalling (9.67100.2004)

Specials for acids

Safebreak bottles for acids – Just in case

When accidents happen

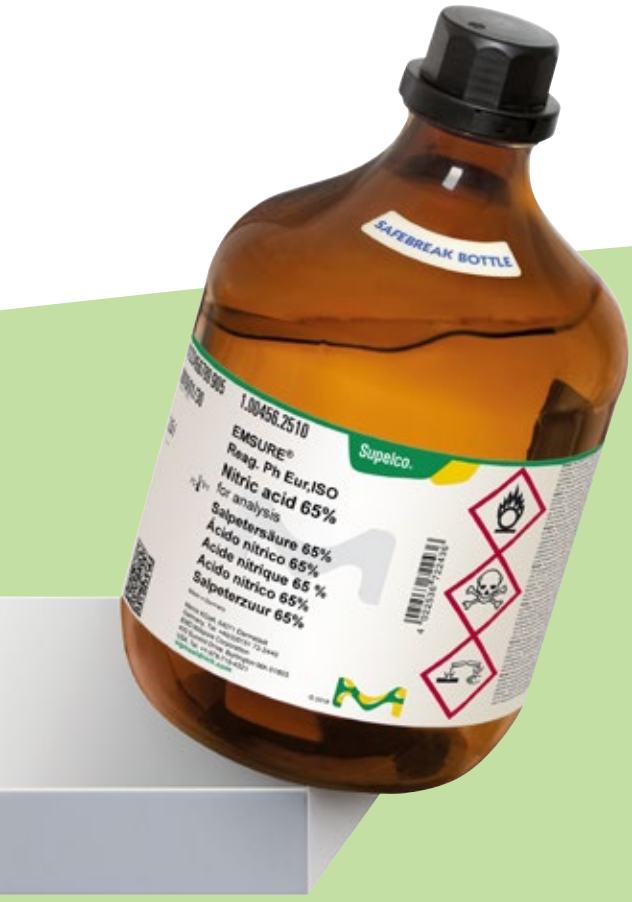
As containers for many types of reagents, glass bottles offer numerous advantages. They are inert to most chemicals, highly impermeable, easy to sterilize, and reusable. There's just one problem: glass can break. Depending on the contents, this could pose serious health risks for lab personnel.

We have you covered

Fortunately, we have developed an effective and protective solution: the Safebreak bottle. This unique glass bottle is coated with polyethylene (PE), and can withstand considerable impact force. But should the bottle break, all liquid acid (!) and glass splinters are reliably contained within the PE coating, thereby protecting users from cuts or exposure to harmful chemicals.

Additional protective features

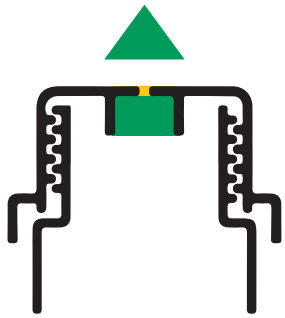
Every Safebreak bottle is fitted with a S40 screw cap made of polypropylene that has an integrated PTFE component. Even after frequent opening and closing, the cap keeps the bottle absolutely airtight so that no liquid or vapor can escape. Our Safebreak bottle also protects the planet. It can be reused and ecologically disposed of, just as conventional glass. During incineration, the PE is burnt off without affecting the environment.



- **Available in 0.5 L, 1 L and 2.5 L bottle size**
  (See ordering information page 72 ff.)
- **Robust:** Able to withstand considerable impact force
- **Safe:** In case of breakage, all acid and glass splinters are contained in the PE coating
- **Durable:** Screw cap remains perfectly intact despite frequent use
- **Ecological:** Environment protected from contamination
- **Economical:** Long shelf life as with conventional glass bottles
- **Convenient:** S40 thread lip ensures drip-free pouring
- **Eco-friendly:** Can be recycled with conventional glass bottles

SafetyCap for reagents that build pressure

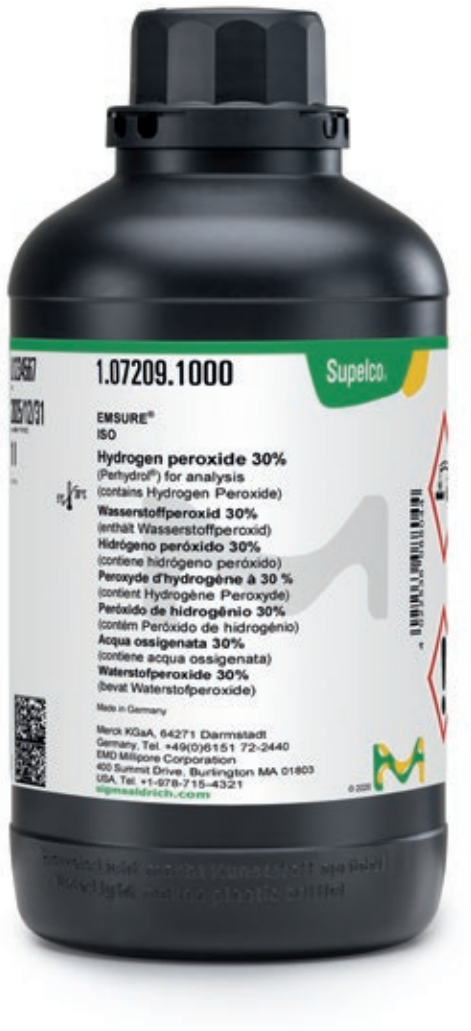
Certain reagents, such as sodium hypochlorite solution or hydrogen peroxide, are capable of generating excess pressure through chemical reactions. To help avoid contamination, we supply all such reagents in bottles fitted with the SafetyCap.



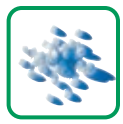
This innovative cap has a valve that allows excess gas to be released, hence preventing the build-up of pressure. It is also absolutely leak-proof – even if the bottle is tipped.

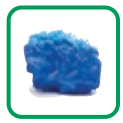
Furthermore, the PTFE membrane incorporated in the SafetyCap allows neither gas nor liquid to enter the bottle, thus protecting the contents from contamination. For additional safety, all bottles with such reagents are packed in PE bags.

- Allows gas to be released, thereby reducing internal pressure
- Absolutely leak-proof, protects users and the environment from contamination
- Prevents gas and liquid from entering bottle, protects contents from contamination



HDPE bottles
for solids





Pack sizes: 0.1 kg to 5 kg

Carrier for 5 kg packaging
available separately

Wide opening (S60 or S85 thread)
for easy withdrawal

Specially treated, high-quality HDPE
with extreme durability, inertness and shock resistance ensures maximum safety and maintains product quality

Smart label
Unique, clear and complete labeling with all relevant hazard declarations and 2D data matrix barcode

Square base
allows optimum use of storage space in the laboratory and during transportation

Technical data

Material: HDPE

Available packaging size: 0.1 kg to 5 kg (volume dependent on bulk density of the product)

Volume	Height	Width	Depth	Net weight
0.25 L	111.5 mm	59 mm	59 mm	26 g
0.45 L	142 mm	70.5 mm	70.5 mm	50 g
0.75 L	142 mm	90 mm	90 mm	min. 49 g
1.10 L	176 mm	90 mm	90 mm	min. 55 g
1.25 L	207 mm	90 mm	90 mm	min. 65 g
1.80 L	170.5 mm	121 mm	121 mm	min. 103 g
2.50 L	219 mm	121 mm	121 mm	min. 103 g
6.00 L	281 mm	180 mm	180 mm	min. 237 g

Safety accessories

Wire carrier for widenecked PE bottles (4 L to 10 L volume)	9.79490.0001

Corrugated board box
with PE inliner for solids

Pack sizes: 25 kg and 50 kg

PE inliner
is produced in clean room conditions to protect contents from contamination

Glued in a water-resistant manner acc. to DIN 53133
to remain stable even under damp conditions

Stackable

Smart label
Unique, clear and complete labeling with all relevant hazard declarations and 2D data matrix barcode

Robust construction
for convenient and secure packing

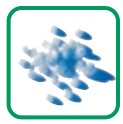
Technical data

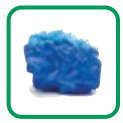
Material: Corrugated cardboard, PE bag

Available packaging size: 25 kg and 50 kg (volume dependent on bulk density of the product)

Volume	Height	Width	Depth
26 L	310 mm	370 mm	275 mm
36 L	420 mm	370 mm	275 mm
40 L	330 mm	379 mm	379 mm
44 L	500 mm	370 mm	275 mm
50 L	413 mm	374 mm	374 mm
57 L	640 mm	370 mm	275 mm
60 L	488 mm	374 mm	374 mm
80 L	648 mm	369 mm	369 mm

PE buckets & square boxes
for solids





Pack sizes: 12 kg, 25 kg and 50 kg

Protective lids
with tamper evident seal

Perfectly protected
against contaminations and humidity
thanks to High-quality HDPE with PE inliner

Safe and easy handling due to 2 large handles

Stackable & robust
Thanks to their shape boxes and buckets can easily be stacked

Engraved UN-code
Includes important safety information and provides packaging certificates

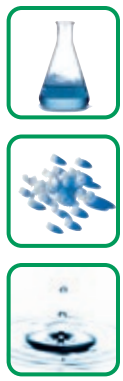
Smart label
Unique, clear and complete labeling with all relevant hazard declarations and 2D data matrix barcode

Paper-free packaging
for less particle contamination and dust formation

Technical data

Parameter	PE bucket 12 kg	Square box 25 kg	Square box 50 kg
Height	29.2 cm	32.9 cm	47.0 cm
Diameter / Width	33.8 cm	37.8 cm	37.8 cm
Depth	-	37.8 cm	37.8 cm
Volume	15 L	35 L	52 L
Filling quantity	12 kg	25 kg	50 kg
Weight (empty)	0.86 kg	1.39 kg	2.06 kg
Number per pallet	21	18	12
Material	HDPE (Lid: PE)	HDPE (Lid: PP)	HDPE (Lid: PP)

PE canisters, Fassetts® & drums
for acids, bases and solvents



Pack sizes: 5 L and 25 L

Fassett®
specially designed for chemicals which build pressure

Safe and easy usage
due to convenient handles on top

Standard opening
to ensure maximum compatibility

Smart label
Unique, clear and complete labeling with all relevant hazard declarations and 2D data matrix barcode

High quality PE
for maximum safety and product quality

200 L PE drum

Blue canisters
available for light-sensitive chemicals

▶ **Withdrawal systems for acids and bases see page 66**

Technical data

Parameter	Canister 5 L	25 L	Fassett® 25 L	Drum 200 L
Height	24.1 cm	48.8 cm	50 cm	93.5 cm
Width	16.5 cm	24.2 cm	28.5 cm	58.1 cm
Depth	19.5 cm	29.5 cm	32.9 cm	58.1 cm
Volume	5.6 L	27 L	30 L	222 L
Filling quantity	5 L	25 L	25 L	200 L
Weight (empty)	0.28 kg	1.25 kg	1.5 kg	8.5 kg
Number per pallet	72 (4 / cardboard)	11	8	2
Openings	S 60 x 6	KS 60 x 6	CCS 60 x 6	S70x6, S56x4
Material	PE	PE	PE	PE

Safety accessories

Container key for opening containers with KS 60 x 6 screw cap	1.08804.0001
Tap (PE) attachable, self-venting, for 5 L, 10 L and 25 L PE canisters with KS 60x6 external thread	1.12937.0001

Steel drums and combi drums
for acids and solvents

Pack sizes: 10 L to 190 L

Special formed rims
for best stackability

Standard openings
to ensure highest interoperability

Special resistant varnish
is applied on the upper side for nitric acid

Protective cap
with originality sealing

Printed / engraved UN-code
includes important safety information and provides packaging certificates

Safe and easy handling due to 2 large handles

Smart label
Unique, clear and complete labeling with all relevant hazard declarations and 2D data matrix barcode

High quality metal
with extreme durability, inertness and shock resistance for highest safety and product quality

one-way packaging

Metal drums are used as one-way packaging

Important notice:
Must not be pressurized with inert gas!

Bottom reservoir
for optimal emptying

Technical data

▶ **Withdrawal systems for acids see page 67; for solvents see page 68**

Parameter	10 L	25 L	25 L with PE	180 / 190 L	180 / 190 L with PE
Height	32.5 cm	52 cm	52 cm	88 cm	88.5 cm
Diameter	23.5 cm	29 cm	29 cm	59.5 cm	58.8 cm
Volume	12.4 L	28 L	28 L	216.5 L	203 L
Filling quantity	10 L	25 L	25 L	180 / 190 L	180 / 190 L
Weight (empty)	1.6 kg	3.6 kg	3.4 kg	22 kg	22 kg
Number per pallet	13	11	11	2	2
Openings	2" decentrally located	2" centrally and 3/4" decentrally located	S56 x 4 (PP)	2" centrally and 3/4" decentrally located (steel, galvanized)	2 x S56x4 (PP)
Material	steel	steel	steel with PE	steel	steel with PE

Stainless steel drums
for solvents

Pack sizes: 10 L to 190 L

Protective cap
with originality sealing

Special formed rims
for best stackability

Standard openings
to ensure highest interoperability

Printed / engraved UN-code
includes important safety information and provides packaging certificates

Safe and easy handling due to 2 large handles

Smart label
Unique, clear and complete labeling with all relevant hazard declarations and 2D data matrix barcode

High quality stainless steel
with extreme durability, inertness and shock resistance for highest safety and product quality

returnable packaging

Cost effectiveness and environmental protection
by using the drum returning process (Europe only)

Bottom reservoir
for optimal emptying

Technical data

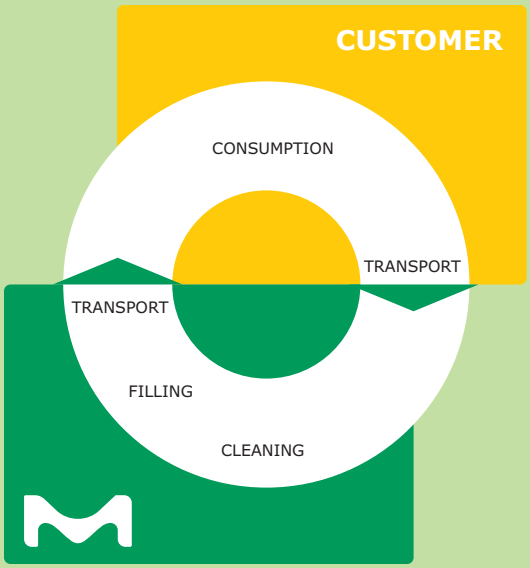
▶ **Withdrawal systems for solvents see page 68**

Parameter	10 L	25 L	190 L
Height	35 cm	52 cm	88 cm
Diameter	24 cm	29 cm	59.5 cm
Volume	12 L	28 L	215 L
Filling quantity	10 L	25 L	190 L
Weight (empty)	1.9 kg	3.8 kg	18 kg
Number per pallet	15	11	2
Openings	2" decentrally located	2" decentrally located	2" decentrally located 3/4" decentrally located
Material	stainless steel	stainless steel	stainless steel

Important information
for safety and returnable system for solvents

The returnable system and process

In Europe Merck KGaA, Darmstadt, Germany stainless steel drums for solvents are part of a returnable process. Their use means that the user no longer has to cope with the topics of complete emptying, rinsing, disposing of the rinsing liquid and even disposing of the packaging itself in the proper manner. After consumption of the solvents on user site the empty drums are returned to us, unrinsed and with their original labels still attached. On their return, we will ensure that they are properly cleaned, checked and refilled. Clear advantages for a time saving and cost effective way of daily solvent handling.



Easy detection
Symbols for easy detection which packaging material can be returned:

returnable packaging

Stainless steel drums are part of a returnable process (in Europe) – optional returnable packaging.

one-way packaging

Metal drums are used as one-way packaging.

Measures to discharge static electricity

If flammable liquids (e.g. solvents) are used, the container (10 L or more) must be properly earthed according to **valid local safety regulations** to avoid the risk of explosion and fire.

- General warnings and safety instructions must be observed
- All components (e.g. container and withdrawal system) must be grounded separately
- Grounding clamps must have metallic contact with both the container and the withdrawal system, and a safe ground connection
- The grounding must be installed before opening the container
- The user must always wear conductive personal protective equipment (e.g. shoes and gloves)
- The floor must be conductive
- Use sampling vessels made of insulating material with a volume not greater than 1 liter
- Ensure that there are no additional ignition hazards caused by process-specific parameters, such as increased ignitability of the substances due to changed environmental conditions or when sampling in combination with highly charge-generating processes

Suitable withdrawal systems for improved safety

To further significantly increase personnel safety when handling hazardous chemicals, we offer tailor-made withdrawal systems. Our broad range of withdrawal systems and accessories includes everything you need to ensure safe and easy handling and contamination-free withdrawal of inorganics and solvents. All recommended applications are tested in accordance to the properties and specifications of the chemical.

Our products provide essential safety features required by safety regulations – from self-closing nozzles to safety accessories with pressure relief mechanisms and anti-static devices. Systems for manual pressure build-up and inert gas pressurizing are supplemented by a comprehensive selection of reducers, adapters and couplings that allow easy interconnection of all components. This way you can precisely manage your individual chemical flow and thus optimize your processes – and at the same time minimize risks for your employees and the environment.

Important safety advice

Our withdrawal systems have been developed and optimized for the use with containers and chemicals from us. We therefore disclaim any warranty or liability for the operability of our withdrawal systems in connection with containers or chemicals from other manufacturers.

We reserve the right to refrain from the delivery of withdrawal systems if the respective order does not indicate that each withdrawal system will be used in combination with appropriate chemicals and containers from us.

We inform and advise our customers to the best of our knowledge and ability but without any engagement or liability on our part. Our customers must obey all existing laws and regulations. This also applies in respect of any protected rights of third parties. Our information and advice does not eliminate the need for our customers to check, on their own responsibility, that our products are suitable for the purpose envisaged.

Manual withdrawal systems
for acids and bases

The need for greater volumes of acids or bases may require a switch from bottles to larger containers, which increases the risk of spills and accidents. The best way to protect yourself from unintended contact with harmful and often corrosive liquids is through the use of suitable withdrawal systems. Our unique solutions allow you to safely and easily dispense harmful chemicals from large containers into other, typically smaller, reaction vessels, thereby minimizing risks.

- Unique concept allows safe and easy withdrawal of chemicals, preventing accidental contact with contents and vapors
- Flexible, lightweight withdrawal systems with integrated outlet valve and individual pressurizing options
- Integrated check valve protects the pump ball from chemical vapors
- Integrated venting system avoids vacuum development
- No operating supplies required: manual pressure buildup by hand or foot pump ball
- Lower costs through use of larger volumes of 10 L or more

Manual withdrawal system for acids and bases (PE)

- Made of specially tested high purity polyethylene (PE)
- Suitable for use with all acids and bases (except HNO_3 and H_2SO_4)

Examples for individual compilations

25 L Fassett® e.g. 25 L Hydrochloric acid 37% EMSURE® (1.00317.9026)		25 L PE canisters e.g. 25 L Sodium hydroxide solution about 32% EMSURE® (1.05590.9025)	
Dispense head (PE) for acids and bases, manual pressure build-up	1.67500.0001	Dispense head (PE) for acids and bases, manual pressure build-up	1.67500.0001
Hand pump ball for withdrawal systems	9.67114.0000	Hand pump ball for withdrawal systems	9.67114.0000
Dip tube (PE) for acids and bases in 25 L fassetts	1.67526.0001	Dip tube (PE) for acids and bases in 25 L canisters	1.67525.0001

Manual withdrawal system especially for Nitric acid and Sulfuric acid (PVDF)

- Made of specially tested high purity polyvinylidene fluoride (PVDF)
- Developed specifically for use with aggressive acids, e.g. HNO_3 and H_2SO_4

Safe withdrawal in 8 simple steps

1. **Check proper operation**
2. **Open the container***
3. **Insert dip tube and tighten***
4. **Check outlet valve is closed**
5. **Screw in dispensing head and thighten**
6. **Place receptacle under the outlet and open the outlet valve**
7. **Pressurize by squeezing the red pump ball and fill the receptacle**
8. **Close outlet valve**

* use drum key 1.67503.0001

(Always follow local safety regulations and the detailed instructions provided in the manual of the withdrawal system in use.)

Examples for individual compilations

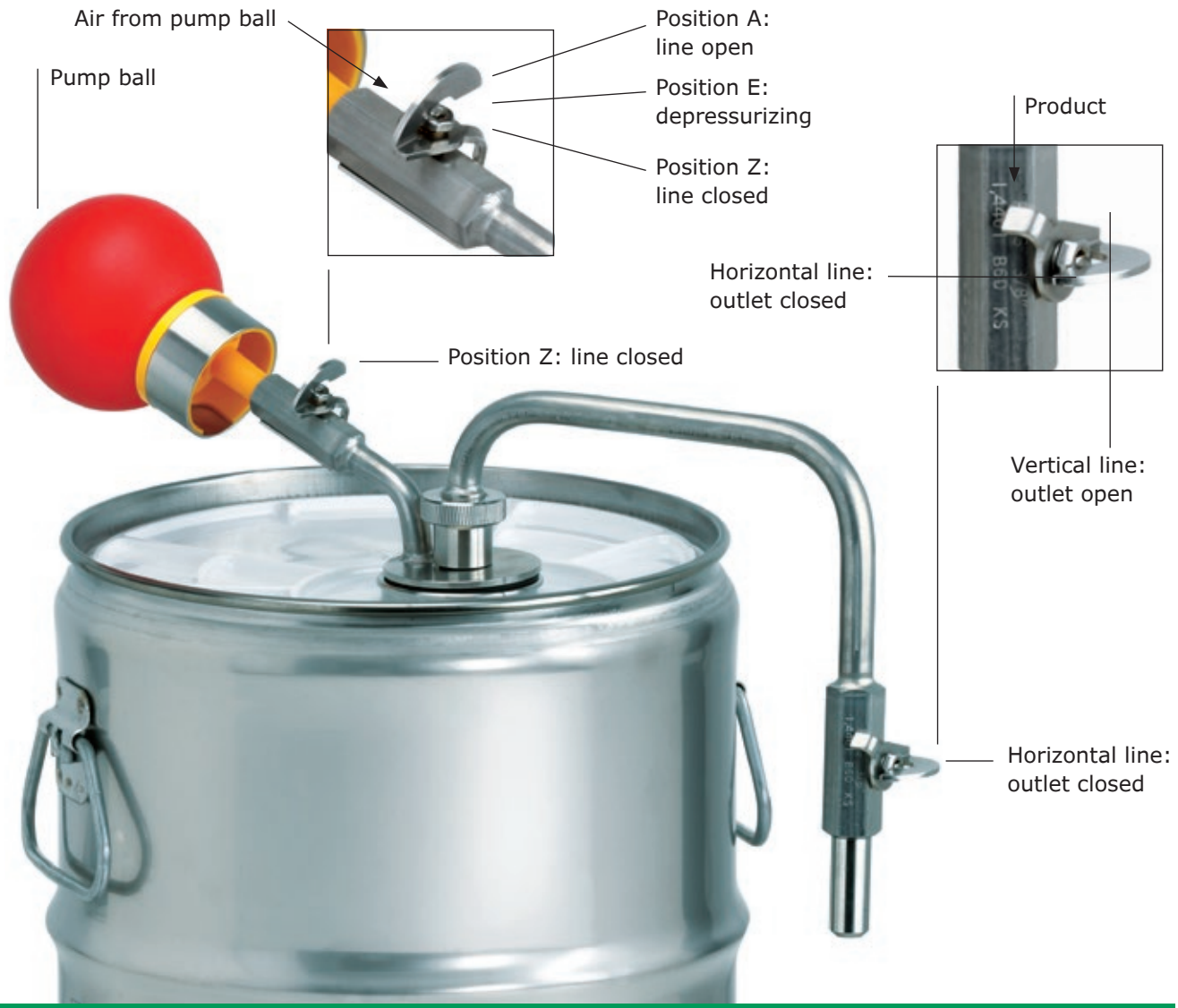
▶ **Please see brochure "Inorganics on tap" for further system compilations**

25 L combi containers e.g. 25 L Nitric acid 65% EMSURE® (1.00456.9026)		**180 L combi containers e.g. 180 L Nitric acid 65% EMSURE® (1.00456.9180)**	
Dispense head (PVDF) for Nitric acid and Sulfuric acid, manual pressure build-up	1.67501.0001	Dispense head (PVDF) for Nitric acid and Sulfuric acid, manual pressure build-up	1.67501.0001
Hand pump ball for withdrawal systems	9.67114.0000	Foot pump ball for dispense heads	1.67502.0001
Dip tube (PVDF) for Nitric acid and Sulfuric acid in 25 L combi containers	1.67527.0001	Dip tube (PVDF) for Nitric acid in 180 L combi containers	1.67585.0001

Withdrawal Systems
for solvent drums

Manual pressure build-up

- Safe, easy and convenient solvent handling
- Usage of tested high quality materials to ensure a reliable, contamination free and safe handling of our solvents
- High flexibility due to independence on gas supply
- Suitable for solvents in 10 L and 25 L metal and stainless steel drums



System at a glance

Order number	1.01114.0001	Necessary completive products	9.67100.1026 Dip tube for 25 L composite drum (steel/PE)
Suitability	10 L and 25 L metal and stainless steel drums	Recommended safety products	Antistatic set (3 cables) 1.07070.0001 Drum opening key 1.08803.0001
Operation mode	Manual pressure build-up by pump ball		
Set components	Withdrawal system body with 2" clamp, Hand pump ball with rapid action connector, 10 L dip tube, 25 L dip tube	Spare parts	Dip tube for 10 L drums 9.67100.1012 Dip tube for 25 L drums 9.67100.1028 Hand pump ball 9.67114.0000

Pressurizing with inert gas [only for stainless steel drums]

- Safe, easy and convenient solvent handling
- Usage of tested high quality materials to ensure a reliable, contamination free and safe handling of our solvents
- Construction of a central supply system, direct connection to instruments or individual installations as options

Self closing tear off connections
for quick connection and disconnection

9.67100.9051
Spiral gas feeding tube

9.67100.9002
Threaded adapter with vertical connections

Two different connectors for avoiding mismatch of gas and product

9.67106.0001
Stainless steel clamp

Nozzle can be hanged directly on the drum with the clamp

Safety hook
to avoid unintended solvent supply
(push safety hook first to unblock the supply handle)

9.67100.9090
Filling nozzle with stainless steel coated PTFE-tube

Integrated swivel joints
to avoid tube tensions

System at a glance

Order number	1.06710.0001	
Suitability	10 L, 25 L and 190 L stainless steel drums	
Operation mode	Pressurizing with inert gas (house gas / gas bottle)	
Set components	Filling nozzle with stainless steel coated, flexible PTFE-tube (80 cm)	9.67100.9090
	Gas feeding tube	9.67100.9051
	Threaded adapter with vertical connections	9.67100.9002

Necessary completive products	Dip tube for 10 L stainless steel drums	9.67100.1010
	Dip tube for 25 L stainless steel drums	9.67100.1025
	Dip tube for 190 L stainless steel drums	9.67100.1190
	Stainless steel clamp for filling nozzle attachment to drums	9.67106.0001
Recommended safety products	Antistatic set (3 cables)	1.07070.0001
	Drum opening key	1.08803.0001
Spare parts	Filling nozzle with stainless steel coated, flexible PTFE-tube (80 cm)	9.67100.9090
	Gas feeding tube	9.67100.9051
	Threaded adapter with horizontal connections	9.67100.9003
	Threaded adapter with vertical connections	9.67100.9002

Withdrawal Systems
for solvent drums

Manual pressure build-up for high volumes

- Safe, easy and convenient solvent handling
- Usage of tested high quality materials to ensure a reliable, contamination free and safe handling of our solvents
- High flexibility due to independence on gas supply

System at a glance

Order number	1.19171.0001	Necessary completive products	Reducer (PE) from S56 x 4 to 2" thread (for combi drum)	9.67202.0000
Suitability	180 L / 190 L / 200 L metal and stainless steel drums	Recommended safety products	Antistatic set (3 cables) Drum opening key	1.07070.0001 1.08803.0001
Operation mode	Manual pressure build-up by foot pump ball			
Set components	Withdrawal system body with 2" thread Foot pump ball with flexible tube and rapid action connector Adjustable dip tube	Spare parts	–	

Ordering information
Inorganics & Solvents

EMSURE®

EMPARTA®

EMPLURA®

Acids

EMSURE® | EMPARTA® | EMPLURA® acids offer the highest possible quality, greatest safety and optimized packaging – for a multitude of analytical applications. Every product undergoes strict quality checks using the most sensitive instruments and methods.

EMSURE® Acids	Premium Grade

▶ For more information please have a look at page 22

EMPARTA® Acids	Standard Grade

▶ For more information please have a look at page 32

EMPLURA® Acids	Basic Grade

▶ For more information please have a look at page 36

Ordering information
Acids

Acids A-B

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
A	Acetic acid 30% for analysis EMSURE® Reag. Ph Eur			500 mL	Glass bottle	1.59166.0500
	Acetic acid 60% EMPLURA®			25 L	PE canister	4.80362.9025
	Acetic acid 96% for analysis EMSURE®			1 L	Glass bottle	1.00062.1000
				1 L	HDPE bottle	1.00062.1011
				2.5 L	Glass bottle	1.00062.2500
				2.5 L	HDPE bottle	1.00062.2511
				25 L	PE canister	1.00062.9025
				200 L	PE drum	1.00062.9200
	Acetic acid (glacial) 100% anhydrous for analysis EMSURE® ACS, ISO, Reag. Ph Eur	64-19-7	CH_3COOH	500 mL	Safebreak bottle	1.00063.0510
				1 L	Glass bottle	1.00063.1000
				1 L	Safebreak bottle	1.00063.1010
				1 L	HDPE bottle	1.00063.1011
				2.5 L	Glass bottle	1.00063.2500
				2.5 L	Safebreak bottle	1.00063.2510
				2.5 L	HDPE bottle	1.00063.2511
				25 L	PE canister	1.00063.9026
				200 L	PE drum	1.00062.9200
	Acetic acid (glacial) 100% for analysis EMPARTA® ACS	64-19-7	CH_3COOH	2.5 L	HDPE bottle	1.01830.2500
				25 L	PE canister	1.01830.9025
	Acetic anhydride for analysis EMSURE® ACS, ISO, Reag. Ph Eur	108-24-7	$(CH_3CO)_2O$	1 L	Glass bottle	1.00042.1000
				2.5 L	Glass bottle	1.00042.2500
				25 L	PE canister	1.00042.9025
	Amidosulfuric acid for analysis EMSURE®	5329-14-6	H_2NSO_3H	100 g	HDPE bottle	1.00103.0100
				250 g	HDPE bottle	1.00103.0250
	Amidosulfuric acid EMPLURA®	5329-14-6	H_2NSO_3H	2.5 kg	HDPE bottle	1.00219.2500
				25 kg	Fibre carton	1.00219.9025
	L(+)-Ascorbic acid for analysis EMSURE® ACS, Reag. Ph Eur	50-81-7	$C_6H_8O_6$	100 g	HDPE bottle	1.00468.0100
				500 g	HDPE bottle	1.00468.0500
				1 kg	HDPE bottle	1.00468.1000
B	Barbituric acid for analysis EMSURE®	67-52-7	$C_4H_4N_2O_3$	25 g	HDPE bottle	1.00132.0025
				100 g	HDPE bottle	1.00132.0100
	Benzoic acid for analysis EMSURE® ACS, Reag. Ph Eur	65-85-0	C_6H_5COOH	100 g	HDPE bottle	1.00136.0100
				250 g	HDPE bottle	1.00136.0250
				1 kg	HDPE bottle	1.00136.1000
				25 kg	Fibre carton	1.00136.9025
	Boric acid for analysis EMSURE® ACS, ISO, Reag. Ph Eur	10043-35-3	H_3BO_3	100 g	HDPE bottle	1.00165.0100
				500 g	HDPE bottle	1.00165.0500
				1 kg	HDPE bottle	1.00165.1000
				5 kg	HDPE bottle	1.00165.5000
				12 kg	PE bucket	1.00165.9012
				25 kg	Fibre carton	1.00165.9025

EMSURE® EMPARTA® EMPLURA®

Acids C-H

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
C	Citric acid monohydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	5949-29-1	$C_6H_8O_7 * H_2O$	500 g	HDPE bottle	1.00244.0500
				1 kg	HDPE bottle	1.00244.1000
				5 kg	HDPE bottle	1.00244.5000
				12 kg	PE bucket	1.00244.9012
				25 kg	Fibre carton	1.00244.9026
F	Formic acid 89–91% for analysis EMSURE® ACS			1 L	Glass bottle	1.00253.1000
	Formic acid 90% for determination of viscosity acc. to DIN EN ISO 307			2.5 L	Glass bottle	1.10854.2500
	Formic acid 98–100% for analysis EMSURE® ACS, Reag. Ph Eur	64-18-6	HCOOH	100 mL	Glass bottle	1.00264.0100
				1 L	Glass bottle	1.00264.1000
				2.5 L	Glass bottle	1.00264.2500
				25 L	PE canister	1.00264.9026
				200 L	PE drum	1.00264.9200
G	Glycolic acid for analysis EMSURE®	79-14-1	$HOCH_2COOH$	100 g	HDPE bottle	1.04106.0100
H	Hydrobromic acid 47% for analysis EMSURE® ACS, ISO			1 L	Glass bottle	1.00307.1000
	Hydrobromic acid 47% EMPLURA®			500 mL	Glass bottle	1.00304.0500
				2.5 L	Glass bottle	1.00304.2500
				20 L	Carboy	1.00304.9020
	Hydrochloric acid 25% for analysis EMSURE®			1 L	Glass bottle	1.00316.1000
				1 L	HDPE bottle	1.00316.1011
				2.5 L	Glass bottle	1.00316.2500
				2.5 L	HDPE bottle	1.00316.2511
				25 L	PE canister	1.00316.9025
	Hydrochloric acid 32% for analysis EMSURE®			1 L	Glass bottle	1.00319.1000
				1 L	HDPE bottle	1.00319.1011
				2.5 L	Glass bottle	1.00319.2500
				2.5 L	HDPE bottle	1.00319.2511
				25 L	PE canister	1.00319.9025
				200 L	PE drum	1.00319.9200
	Hydrochloric acid 32% EMPLURA®			2.5 L	Glass bottle	1.00313.2500
				25 L	PE canister	1.00313.9025
				180 L	PE drum	1.00313.9180
	Hydrochloric acid fuming 37% for analysis max. 0.001 ppm Hg EMSURE®			2.5 L	Glass bottle	1.13386.2500
	Hydrochloric acid fuming 37% for analysis EMSURE® ACS, ISO, Reag. Ph Eur			500 mL	Safebreak bottle	1.00317.0510
				1 L	Glass bottle	1.00317.1000
				1 L	Safebreak bottle	1.00317.1010
				1 L	HDPE bottle	1.00317.1011
				2 L	HDPE bottle	1.00317.2011
				2.5 L	Glass bottle	1.00317.2500
				2.5 L	Safebreak bottle	1.00317.2510
				25 L	PE canister	1.00317.9026
				200 L	PE drum	1.00317.9200

Ordering information
Acids

Acids H-N

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
H	Hydrochloric acid fuming 37% for analysis EMPARTA® ACS			2 L	HDPE bottle	1.01834.2011
				2.5 L	Glass bottle	1.01834.2502
	Hydrofluoric acid 38–40% EMPLURA®			1 L	HDPE bottle	1.00337.1000
				2.5 L	HDPE bottle	1.00337.2500
	Hydrofluoric acid 40% for analysis EMSURE® ISO, Reag. Ph Eur			500 mL	HDPE bottle	1.00338.0500
				1 L	HDPE bottle	1.00338.1000
				2.5 L	HDPE bottle	1.00338.2500
	Hydrofluoric acid 48% for analysis EMSURE® ACS, ISO, Reag. Ph Eur			500 mL	HDPE bottle	1.00334.0500
				1 L	HDPE bottle	1.00334.1000
				2.5 L	HDPE bottle	1.00334.2500
				5 L	PE canister	1.00334.5000
	Hydrogen peroxide 30% (Perhydrol™) (stabilized for higher storage temp.) for analysis EMSURE® ISO			250 mL	HDPE bottle	1.07210.0250
				1 L	HDPE bottle	1.07210.1000
				2.5 L	HDPE bottle	1.07210.2500
				25 L	PE canister	1.07210.9025
	Hydrogen peroxide 30% (Perhydrol™) for analysis EMSURE® ISO			250 mL	HDPE bottle	1.07209.0250
				500 mL	HDPE bottle	1.07209.0500
				1 L	HDPE bottle	1.07209.1000
				2.5 L	HDPE bottle	1.07209.2500
	Hydrogen peroxide 35% EMPLURA®			25 L	PE canister	1.08556.9025
	Hydroiodic acid 57% for analysis EMSURE®			250 mL	Glass bottle	1.00344.0250
				1 L	Glass bottle	1.00344.1000
	Hydroiodic acid 57% EMPLURA®			250 mL	Glass bottle	1.00341.0250
				22 L	Carboy	1.00341.9022
	Hydroiodic acid 67% for analysis EMSURE®			250 mL	Glass bottle	1.00345.0250
	Hypophosphorous acid 50% for analysis EMSURE®			500 mL	Glass bottle	1.04633.0500
M	Molybdatophosphoric acid hydrate for analysis EMSURE® ACS, Reag. Ph Eur	51429-74-4	$H_3[P(Mo_3O_{10})_4]$ * x H_2O	25 g	Glass bottle	1.00532.0025
				100 g	Glass bottle	1.00532.0100
	Molybdic acid about 85% MoO_3 (containing ammonium molybdate) EMPLURA®	7782-91-4	H_2MoO_4	1 kg	HDPE bottle	1.00400.1000
N	Nitric acid 65% for analysis (max. 0.005 ppm Hg) EMSURE® Reag. Ph Eur, ISO			1 L	Glass bottle	1.00452.1000
				2.5 L	Glass bottle	1.00452.2500
				180 L	PE / Metal drum	1.00452.9180
	Nitric acid 65% for analysis EMSURE® Reag. Ph Eur, ISO			500 mL	Safebreak bottle	1.00456.0510
				1 L	Glass bottle	1.00456.1000
				1 L	Safebreak bottle	1.00456.1010
				2.5 L	Glass bottle	1.00456.2500
				2.5 L	Safebreak bottle	1.00456.2510
				25 L	PE / Metal drum	1.00456.9026
				180 L	PE / Metal drum	1.00456.9180

EMSURE® EMPARTA® EMPLURA®

Acids N-P

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
N	Nitric acid 65% EMPLURA®			1 L	Glass bottle	1.00443.1000
				2.5 L	Glass bottle	1.00443.2500
				25 L	PE / Metal drum	1.00443.9025
				180 L	PE / Metal drum	1.00443.9180
	Nitric acid 69% for analysis EMSURE® ACS, Reag. Ph Eur			500 mL	Safebreak bottle	1.01799.0510
				1 L	Glass bottle	1.01799.1000
				1 L	Safebreak bottle	1.01799.1010
				2.5 L	Glass bottle	1.01799.2500
				2.5 L	Safebreak bottle	1.01799.2510
				180 L	PE / Metal drum	1.01799.9180
	Nitric acid 69% for analysis EMPARTA® ACS			2.5 L	Glass bottle	1.01832.2500
				25 L	PE / Metal drum	1.01832.9025
	Nitric acid fuming 100% for analysis EMSURE® Reag. Ph Eur	7697-37-2	HNO_3	1 L	Glass btl. pl. coat.	1.00455.1000
O	Oxalic acid dihydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	6153-56-6	$(COOH)_2 * 2 H_2O$	100 g	HDPE bottle	1.00495.0100
				500 g	HDPE bottle	1.00495.0500
				1 kg	HDPE bottle	1.00495.1000
				25 kg	Fibre carton	1.00495.9025
	Oxalic acid dihydrate EMPLURA®	6153-56-6	$(COOH)_2 * 2 H_2O$	1 kg	HDPE bottle	1.00492.1000
				5 kg	HDPE bottle	1.00492.5000
				50 kg	Fibre carton	1.00492.9050
P	Perchloric acid 60% for analysis EMSURE® ACS			1 L	Glass bottle	1.00518.1001
				6 x 1 L	Glass bottle	1.00518.1016
				2.5 L	Glass bottle	1.00518.2501
				4 x 2.5 L	Glass bottle	1.00518.2514
	Perchloric acid 70% for analysis (max. 0.0000005% Hg) EMSURE® ACS, ISO, Reag. Ph Eur			1 L	Glass bottle	1.00514.1000
				6 x 1 L	Glass bottle	1.00514.1006
	Perchloric acid 70–72% for analysis EMSURE® ACS, ISO, Reag. Ph Eur			500 mL	Safebreak bottle	1.00519.0510
				1 L	Glass bottle	1.00519.1001
				6 x 1 L	Glass bottle	1.00519.1016
				1 L	Safebreak bottle	1.00519.1010
				2.5 L	Glass bottle	1.00519.2501
				4 x 2.5 L	Glass bottle	1.00519.2514
				2.5 L	Safebreak bottle	1.00519.2510
	Periodic acid for analysis EMSURE® ACS	10450-60-9	H_5IO_6	25 g	Glass bottle	1.00524.0025
				100 g	Glass bottle	1.00524.0100
	meta-Phosphoric acid pieces for analysis (stabilized with sodium metaphosphate) EMSURE®			100 g	Metal can	1.00546.0100
				500 g	Metal can	1.00546.0500
	ortho-Phosphoric acid 85% for analysis EMSURE® ACS, ISO, Reag. Ph Eur			500 mL	Safebreak bottle	1.00573.0510
				1 L	HDPE bottle	1.00573.1000
				2.5 L	HDPE bottle	1.00573.2500
				2.5 L	Safebreak bottle	1.00573.2510
				25 L	PE canister	1.00573.9025
				200 L	PE drum	1.00573.9200

Ordering information
Acids

Acids O-S

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
O	ortho-Phosphoric acid 99% cryst. for analysis EMSURE®	7664-38-2	H_3PO_4	500 g	HDPE bottle	1.00565.0500
S	Succinic acid for analysis EMSURE® ACS	110-15-6	$HOOCCH_2CH_2COOH$	250 g	HDPE bottle	1.00682.0250
				500 g	HDPE bottle	1.00682.0500
				25 kg	Fibre carton	1.00682.9025
	Sulfuric acid 25% for analysis EMSURE®			1 L	HDPE bottle	1.00716.1000
				25 L	PE canister	1.00716.9025
	Sulfuric acid 40% for determination of gas metabolism acc. to knipping			2.5 L	Glass bottle	1.09286.2500
	Sulfuric acid 62% for analysis EMSURE®, for the determination of fat in cheese (d 1.52)			1 L	HDPE bottle	4.80531.1000
				2.5 L	HDPE bottle	4.80531.2500
	Sulfuric acid 90–91% for Gerber fat determination and determination of nitrates in milk			500 mL	Glass bottle	1.00729.0500
				2.5 L	Glass bottle	1.00729.2500
				25 L	PE canister	1.00729.9025
	Sulfuric acid 95–97% for analysis (max. 0.005 ppm Hg) EMSURE® ACS, ISO, Reag. Ph Eur	7664-93-9	H_2SO_4	500 mL	Safebreak bottle	1.00732.0510
				1 L	Glass bottle	1.00732.1000
				2.5 L	Glass bottle	1.00732.2500
				2.5 L	Safebreak bottle	1.00732.2510
	Sulfuric acid 95–97% for analysis EMSURE® ISO	7664-93-9	H_2SO_4	500 mL	Safebreak bottle	1.00731.0510
				1 L	Glass bottle	1.00731.1000
				1 L	Safebreak bottle	1.00731.1010
				1 L	HDPE bottle	1.00731.1011
				2.5 L	Glass bottle	1.00731.2500
				2.5 L	Safebreak bottle	1.00731.2510
				2.5 L	HDPE bottle	1.00731.2511
				25 L	PE canister	1.00731.9025
				200 L	PE drum	1.00731.9201
	Sulfuric acid 95–97 % for analysis EMPARTA® ACS	7664-93-9	H_2SO_4	2.5 L	HDPE bottle	1.01833.2500
				25 L	PE canister	1.01833.9025
	Sulfuric acid 96% for the determination of viscosity acc. to DIN EN ISO 307	7664-93-9	H_2SO_4	1 L	HDPE bottle	1.08131.1000
				2.5 L	HDPE bottle	1.08131.2500
	Sulfuric acid 98% for analysis EMSURE®	7664-93-9	H_2SO_4	500 mL	Safebreak bottle	1.12080.0510
				1 L	Glass bottle	1.12080.1000
				2.5 L	Glass bottle	1.12080.2500
				2.5 L	Safebreak bottle	1.12080.2510
				25 L	PE canister	1.12080.9025
	Sulfuric acid 98% for the determination of nitrogen	7664-93-9	H_2SO_4	500 mL	Glass bottle	1.00748.0500
				2.5 L	Glass bottle	1.00748.2500
				25 L	PE canister	1.00748.9025
	Sulfuric acid fuming 65% SO_3 (Oleum) EMPLURA®	8014-95-7	H_2SO_4 * SO_3 (1:2)	1 L	Glass btl. pl. coat.	1.00720.1002
	Sulfurous acid 5–6% SO_2 for analysis EMSURE®			1 L	Glass bottle	1.00761.1000
				2.5 L	Glass bottle	1.00761.2500

EMSURE® EMPARTA® EMPLURA®

Acids T-Z

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
T	L(+)-Tartaric acid for analysis EMSURE® ACS, ISO, Reag. Ph Eur	87-69-4	HOOCCH(OH)CH(OH)COOH	250 g	HDPE bottle	1.00804.0250
				1 kg	HDPE bottle	1.00804.1000
				5 kg	HDPE bottle	1.00804.5000
				50 kg	Fibre carton	1.00804.9050
	Toluene-4-sulfonic acid monohydrate for analysis EMSURE® ACS	6192-52-5	$CH_3C_6H_4SO_3H * H_2O$	100 g	HDPE bottle	1.09613.0100
				500 g	HDPE bottle	1.09613.0500
	Trichloroacetic acid for analysis EMSURE® ACS, Reag. Ph Eur	76-03-9	CCl_3COOH	100 g	Glass bottle	1.00807.0100
				250 g	Glass bottle	1.00807.0250
				1 kg	Glass bottle	1.00807.1000
	Tungstophosphoric acid hydrate for analysis EMSURE®	12501-23-4	$H_3[P(W_3O_{10})_4] * x H_2O$	100 g	HDPE bottle	1.00583.0100
				250 g	HDPE bottle	1.00583.0250
	Tungstophosphoric acid hydrate cryst. EMPLURA®	12501-23-4	$H_3[P(W_3O_{10})_4] * x H_2O$	100 g	HDPE bottle	1.00582.0100
				25 kg	Fibre carton	1.00582.9025
	Tungstosilicic acid hydrate for analysis EMSURE®	12027-43-9	$H_4[Si(W_3O_{10})_4] * x H_2O$	100 g	HDPE bottle	1.00659.0100

For more details about our packaging, please see "Packaging and Safe Handling" on page 42

caustic alkalis and bases

EMSURE® | EMPLURA®

Our high-quality caustic alkalis and bases are produced using specially selected raw materials. The range includes sodium and potassium hydroxide pellets and corresponding solutions, as well as ammonia solutions in various concentrations and grades. Simply choose the right product for your application.

EMSURE® Caustic alkalis and bases | Premium Grade

▶ For more information please have a look at page 22

EMPLURA® Caustic alkalis and bases | Basic Grade

▶ For more information please have a look at page 36

Ordering information
Caustic alkalis and bases

Caustics and bases A-S

	Product	CAS No.	Chemical formula		Content	Packaging	Ord. No.
A	Ammonia solution 25% for analysis EMSURE® ISO, Reag. Ph Eur				1 L	HDPE bottle	1.05432.1011
				NEW	2.5 L	HDPE bottle	1.05432.2511
					5 L	HDPE bottle	1.05432.5000
					25 L	PE canister	1.05432.9025
					180 L	PE / Metal drum	1.05432.9181
	Ammonia solution 28–30% for analysis EMSURE® ACS, Reag. Ph Eur			NEW	1 L	HDPE bottle	1.05423.1011
				NEW	2.5 L	HDPE bottle	1.05423.2511
					25 L	PE canister	1.05423.9025
					180 L	PE / Metal drum	1.05423.9180
	Ammonia solution 32% EMPLURA®			NEW	1 L	HDPE bottle	1.05426.1011
				NEW	2.5 L	HDPE bottle	1.05426.2511
P	Potassium hydroxide pellets for analysis max. 0.05% Na) EMSURE® ACS, Reag. Ph Eur	1310-58-3	KOH		1 kg	HDPE bottle	1.05029.1000
					12 kg	PE bucket	1.05029.9012
					50 kg	HDPE box	1.05029.9050
	Potassium hydroxide pellets for analysis EMSURE®	1310-58-3	KOH		500 g	HDPE bottle	1.05033.0500
					1 kg	HDPE bottle	1.05033.1000
					5 kg	HDPE bottle	1.05033.5000
					25 kg	HDPE box	1.05033.9025
					50 kg	HDPE box	1.05033.9050
	Potassium hydroxide pellets EMPLURA®	1310-58-3	KOH		1 kg	HDPE bottle	1.05012.1000
					5 kg	HDPE bottle	1.05012.5000
					50 kg	HDPE box	1.05012.9050
	Potassium hydroxide solution 47% for analysis EMSURE®				1 L	HDPE bottle	1.05545.1000
					25 L	PE canister	1.05545.9025
S	Sodium hydroxide pellets for analysis (max. 0.02% K) EMSURE® ACS, ISO, Reag. Ph Eur	1310-73-2	NaOH		1 kg	HDPE bottle	1.06469.1000
					5 kg	HDPE bottle	1.06469.5000
					12 kg	PE bucket	1.06469.9012
					50 kg	HDPE box	1.06469.9050
	Sodium hydroxide pellets for analysis EMSURE®	1310-73-2	NaOH		500 g	HDPE bottle	1.06498.0500
					1 kg	HDPE bottle	1.06498.1000
					5 kg	HDPE bottle	1.06498.5000
					25 kg	HDPE box	1.06498.9025
					50 kg	HDPE box	1.06498.9050
	Sodium hydroxide pellets EMPLURA®	1310-73-2	NaOH		1 kg	HDPE bottle	1.06462.1000
					5 kg	HDPE bottle	1.06462.5000
					50 kg	HDPE box	1.06462.9050
	Sodium hydroxide granulated EMPLURA®	1310-73-2	NaOH		10 kg	HDPE bottle	1.06467.9010
					50 kg	Fibre carton	1.06467.9050

EMSURE® EMPLURA®

Caustics and bases S-Z

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
S	Sodium hydroxide solution min. 10% (1.11) for analysis EMSURE®			1 L	HDPE bottle	1.05588.1000
				10 L	PE canister	1.05588.9010
	Sodium hydroxide solution 21% for analysis EMSURE®			25 L	PE canister	1.05593.9025
	Sodium hydroxide solution min. 27% (1.30) for analysis (for the determination of nitrogen) EMSURE®			2.5 L	HDPE bottle	1.05591.2500
				25 L	PE canister	1.05591.9025
	Sodium hydroxide solution about 32% (for the determination of nitrogen) for analysis EMSURE®			2.5 L	HDPE bottle	1.05590.2500
				25 L	PE canister	1.05590.9025
				200 L	PE drum	1.05590.9200
	Sodium hydroxide solution about 32% EMPLURA®			2.5 L	HDPE bottle	1.05587.2500
				5 L	HDPE bottle	1.05587.5000
				25 L	PE canister	1.05587.9025
				200 L	PE drum	1.05587.9200
	Sodium hydroxide solution about 36% for analysis EMSURE®			5 L	HDPE bottle	1.05596.5000
	Sodium hydroxide solution min. 45% for analysis EMSURE®			2.5 L	HDPE bottle	1.11360.2500
				25 L	PE canister	1.11360.9025
	Sodium hydroxide solution 50% for analysis EMSURE®			1 L	HDPE bottle	1.58793.1000
				5 L	HDPE bottle	1.58793.5000
				25 L	PE canister	1.58793.9025
				200 L	PE drum	1.58793.9200

▶ **For more details about our packaging, please see "Packaging and Safe Handling" on page 42**

Metals and Metal oxides

EMSURE® | EMPLURA® metal salts, metals and noble metals are renowned for their high quality and purity. We offer a diverse range of products suitable for a multitude of applications in R&D, production and quality control.

EMSURE® Metals and metal oxides

Premium Grade

▶ For more information please have a look at page 22

EMPLURA® Metals and metal oxides

Basic Grade

▶ For more information please have a look at page 36

Ordering information
Metals and metal oxides

Metals and metal oxides A-H

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
A	Aluminium fine powder, stabilized about 2% fat	7429-90-5	Al	250 g	Metal can	1.01056.0250
				1 kg	Metal can	1.01056.1000
	Aluminium (foil) for analysis 0.3 mm thickness, 30 mm width EMSURE®	7429-90-5	Al	250 g	Fibre case	1.01057.0250
				1 kg	Fibre case	1.01057.1000
	Antimony(III) chloride for analysis EMSURE® ACS	10025-91-9	$SbCl_3$	250 g	Glass bottle	1.07838.0250
				1 kg	Glass bottle	1.07838.1000
	Antimony(III) oxide for analysis EMSURE®	1309-64-4	Sb_2O_3	100 g	HDPE bottle	1.07836.0100
				1 kg	HDPE bottle	1.07836.1000
	Antimony(III) oxide EMPLURA®	1309-64-4	Sb_2O_3	2.5 kg	HDPE bottle	1.07835.2500
				50 kg	Fibre carton	1.07835.9050
B	Bismuth(III) oxide EMPLURA®	1304-76-3	Bi_2O_3	1 kg	HDPE bottle	1.01862.1000
				25 kg	Fibre carton	1.01862.9025
	Bromine for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7726-95-6	Br_2	50 mL	Glass btl. pl. coat.	1.01948.0050
				250 mL	Glass bottle	1.01948.0250
				1 L	Glass btl. pl. coat.	1.01948.1000
	Bromine EMPLURA®	7726-95-6	Br_2	250 mL	Glass bottle	1.01945.0250
				1 L	Glass btl. pl. coat.	1.01945.1000
C	Cadmium coarse powder, for analysis and for filling reductors particle size about 0.3–1.6 mm EMSURE®	7440-43-9	Cd	250 g	Metal can	1.02001.0250
				1 kg	Metal can	1.02001.1000
	Cadmium granular, for analysis particle size about 3–6 mm EMSURE®	7440-43-9	Cd	250 g	Metal can	1.02004.0250
	Cesium chloride for analysis EMSURE®	7647-17-8	CsCl	25 g	Glass bottle	1.02038.0025
				100 g	HDPE bottle	1.02038.0100
	Cesium chloride EMPLURA®	7647-17-8	CsCl	1 kg	HDPE bottle	1.02041.1000
	Cesium nitrate 99+ for analysis EMSURE®	7789-18-6	$CsNO_3$	25 g	Glass bottle	1.02856.0025
				1 kg	HDPE bottle	1.02856.1000
	Chromium(VI) oxide for analysis EMSURE®	1333-82-0	CrO_3	250 g	Glass bottle	1.00229.0250
	Copper fine powder particle size < 63 MYm (> 230 mesh ASTM) EMSURE®	7440-50-8	Cu	250 g	HDPE bottle	1.02703.0250
				1 kg	HDPE bottle	1.02703.1000
	Copper foil about 0.1 mm thickness for analysis EMSURE®	7440-50-8	Cu	250 g	Fibre case	1.02700.0250
	Copper(II) oxide powder for analysis EMSURE® ACS	1317-38-0	CuO	100 g	HDPE bottle	1.02766.0100
				500 g	HDPE bottle	1.02766.0500
				25 kg	Fibre carton	1.02766.9025
	Copper(II) oxide powder EMPLURA®	1317-38-0	CuO	500 g	HDPE bottle	1.02761.0500
				25 kg	PE bucket	1.02761.9025
D	Devarda's alloy for analysis EMSURE®	8049-11-4	Cu / Al / Zn	250 g	HDPE bottle	1.05341.0250
				1 kg	HDPE bottle	1.05341.1000

EMSURE® EMPLURA®

Metals and metal oxides I-R

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
I	Iron for analysis reduced, particle size 10 µm EMSURE®	7439-89-6	Fe	100 g	HDPE bottle	1.03819.0100
				500 g	HDPE bottle	1.03819.0500
	di-Iodine pentoxide for analysis granular 0.5-2.5 mm EMSURE®	12029-98-0	I_2O_5	100 g	Glass bottle	1.00358.0100
	Iodine sublimated for analysis EMSURE® ACS, ISO, Reag. Ph Eur.	7553-56-2	I_2	100 g	Glass bottle	1.04761.0100
				500 g	Glass bottle	1.04761.0500
L	Lanthanum(III) oxide EMPLURA®	1312-81-8	La_2O_3	100 g	HDPE bottle	1.12220.0100
				500 g	HDPE bottle	1.12220.0500
	Lead foil for analysis about 0.25 mm thick EMSURE®	7439-92-1	Pb	500 g	Fibre case	1.07365.0500
	Lead(II) oxide for analysis EMSURE®	1317-36-8	PbO	250 g	HDPE bottle	1.07401.0250
				1 kg	HDPE bottle	1.07401.1000
	Lead(II) oxide EMPLURA®	1317-36-8	PbO	5 kg	HDPE bottle	1.05658.5000
				50 kg	PE drum	1.05658.9050
	Lithium hydroxide 98% + for analysis EMSURE®	1310-65-2	LiOH	100 g	HDPE bottle	1.05691.0100
				1 kg	HDPE bottle	1.05691.1000
M	Magnesium foil	7439-95-4	Mg	1 roll (~ 25 g)	Fibre case	1.05812.0001
	Magnesium powder particle size about 0.06–0.3 mm	7439-95-4	Mg	1 kg	Metal can	1.05815.1000
	Magnesium oxide for analysis (max. 0.001% SO_4) EMSURE® ACS	1309-48-4	MgO	100 g	HDPE bottle	1.05866.0100
				500 g	HDPE bottle	1.05866.0500
	Magnesium oxide for analysis EMSURE®	1309-48-4	MgO	100 g	HDPE bottle	1.05865.0100
				500 g	HDPE bottle	1.05865.0500
	Manganese(IV) oxide powder EMPLURA®	1313-13-9	MnO_2	1 kg	Glass bottle	1.05957.1000
				25 kg	Fibre carton	1.05957.9025
	Molybdenum(VI) oxide for analysis EMSURE®	1313-27-5	MoO_3	100 g	HDPE bottle	1.00403.0100
				500 g	HDPE bottle	1.00403.0500
P	Palladium powdered 99+ for analysis EMSURE®	7440-05-3	Pd	1 g	Glass bottle	1.19225.0001
				5 g	Glass bottle	1.19225.0005
	Platinum black 98+ for analysis EMSURE®	7440-06-4	Pt	5 g	Glass bottle	1.19233.0005
				50 g	HDPE bottle	1.19233.0050
R	Rubidium chloride for analysis EMSURE®	7791-11-9	RbCl	25 g	Glass bottle	1.07615.0025

Ordering information
Metals and metal oxides

Metals and metal oxides S-Y

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
S	Selenium black 99+ for analysis EMSURE®	7782-49-2	Se	50 g	HDPE bottle	1.07714.0050
				250 g	HDPE bottle	1.07714.0250
				1 kg	HDPE bottle	1.07714.1000
	Silver chloride 99+ for analysis EMSURE®	7783-90-6	AgCl	25 g	HDPE bottle	1.19203.0025
				100 g	HDPE bottle	1.19203.0100
				1 kg	HDPE bottle	1.19203.1000
	Silver diethyldithiocarbamate for analysis EMSURE® Reag. Ph Eur	1470-61-7	$C_5H_{10}AgNS_2$	5 g	Glass bottle	1.01515.0005
	Silver oxide 99+ for analysis EMSURE®	20667-12-3	Ag_2O	25 g	HDPE bottle	1.19208.0025
				100 g	HDPE bottle	1.19208.0100
	Sodium rod diameter 2.5 cm (protective liquid: paraffin oil)	7440-23-5	Na	250 g	Glass bottle	1.06260.0250
T	Tetrachloroauric(III) acid trihydrate 99% for analysis EMSURE®	16961-25-4	$AuCl_4H*3H_2O$	1 g	Glass ampoule	1.01582.0001
				5 g	Glass ampoule	1.01582.0005
	Tin fine powder EMPLURA® (particle size < 71 µm)	7440-31-5	Sn	250 g	HDPE bottle	1.07807.0250
	Tin foil about 0.04 mm thick	7440-31-5	Sn	200 strips	Plastic box	1.07826.0001
	Tin granulated for analysis (particle size about 4 mm) EMSURE® Reag. Ph Eur	7440-31-5	Sn	250 g	HDPE bottle	1.07806.0250
				1 kg	HDPE bottle	1.07806.1000
	Tin(IV) oxide EMPLURA®	18282-10-5	SnO_2	250 g	HDPE bottle	1.07818.0250
				25 kg	Fibre carton	1.07818.9025
	Titanium(IV) oxide for analysis EMSURE® Reag. Ph Eur	13463-67-7	TiO_2	1 kg	HDPE bottle	1.00808.1000
				25 kg	Fibre carton	1.00808.9025
				50 kg	Fibre carton	1.00808.9050
V	Vanadium(V) oxide EMPLURA®	1314-62-1	V_2O_5	250 g	HDPE bottle	1.00824.0250
				1 kg	HDPE bottle	1.00824.1000
Y	Yttrium oxide 99+ for analysis EMSURE®	1314-36-9	Y_2O_3	25 g	HDPE bottle	1.12412.0025

EMSURE® EMPLURA®

Metals and metal oxides Z

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
Z	Zinc coarse powder for analysis suitable for filling of reductors, particle size about 0.3 – 1.5 mm (14 – 50 mesh ASTM) EMSURE® Reag. Ph Eur	7440-66-6	Zn	250 g	Metal can	1.08756.0250
				1 kg	Metal can	1.08756.1000
	Zinc dust particle size < 63 µm EMPLURA®	7440-66-6	Zn	1 kg	HDPE bottle	1.08774.1000
				50 kg	Steel drum	1.08774.9050
	Zinc granular for analysis, particle size about 3–8 mm EMSURE® ISO	7440-66-6	Zn	500 g	HDPE bottle	1.08780.0500
				1 kg	HDPE bottle	1.08780.1000
	Zinc powder for analysis particle size < 45 µm EMSURE®	7440-66-6	Zn	500 g	Metal can	1.08789.0500
				1 kg	Metal can	1.08789.1000
	Zinc sticks, triangular cross section about 8 mm for analysis EMSURE®	7440-66-6	Zn	500 g	Fibre case	1.08782.0500
	Zinc oxide for analysis EMSURE® ACS, Reag. Ph Eur	1314-13-2	ZnO	500 g	HDPE bottle	1.08849.0500
				1 kg	HDPE bottle	1.08849.1000
				25 kg	Fibre carton	1.08849.9025
	Zirconium(IV) oxide chloride octahydrate for analysis EMSURE®	13520-92-8	$ZrOCl_2 * 8 H_2O$	100 g	HDPE bottle	1.08917.0100

▶ **For more details about our packaging, please see "Packaging and Safe Handling" on page 42**

Zinc

salts

EMSURE® | EMPLURA® Salts.
We offer an extensive range of inorganic salts for qualitative and quantitative analysis. At our facilities in Darmstadt, our salts are manufactured under strictly controlled conditions with state-of-the-art production technologies and equipment, to ensure outstanding analytical purity.

EMSURE® Salts

Premium Grade

▶ For more information please have a look at page 22

EMPLURA® Salts

Basic Grade

▶ For more information please have a look at page 36

Ordering information
Salts

Salts A

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
A	Aluminium ammonium sulfate dodecahydrate for analysis EMSURE® ACS	7784-26-1	$NH_4Al(SO_4)_2 * 12\ H_2O$	500 g	HDPE bottle	1.01031.0500
	Aluminium hydroxide powder EMPLURA® hydrargillite	21645-51-2	$Al(OH)_3 * x\ H_2O$	1 kg	HDPE bottle	1.01091.1000
				50 kg	Fibre carton	1.01091.9050
	Aluminium nitrate nonahydrate for analysis EMSURE®	7784-27-2	$Al(NO_3)_3 * 9\ H_2O$	500 g	HDPE bottle	1.01063.0500
				50 kg	Fibre carton	1.01063.9050
	Aluminium nitrate nonahydrate EMPLURA®	7784-27-2	$Al(NO_3)_3 * 9\ H_2O$	1 kg	HDPE bottle	1.01086.1000
				50 kg	PE canister	1.01086.9050
	Aluminium potassium sulfate dodecahydrate for analysis EMSURE® ACS, Reag. Ph Eur	7784-24-9	$KAl(SO_4)_2 * 12\ H_2O$	1 kg	HDPE bottle	1.01047.1000
				25 kg	Fibre carton	1.01047.9025
	Ammonium acetate for analysis EMSURE® ACS, Reag. Ph Eur	631-61-8	CH_3COONH_4	500 g	HDPE bottle	1.01116.0500
				1 kg	HDPE bottle	1.01116.1000
				5 kg	HDPE bottle	1.01116.5000
				12 kg	PE bucket	1.01116.9012
				25 kg	Fibre carton	1.01116.9025
	Ammonium acetate EMPLURA®	631-61-8	CH_3COONH_4	1 kg	HDPE bottle	1.01115.1000
				5 kg	HDPE bottle	1.01115.5000
	Ammonium amidosulfonate for analysis (for detection of sulfonamide in blood) EMSURE® ACS, Reag. Ph Eur	7773-06-0	$H_2NSO_3NH_4$	100 g	HDPE bottle	1.01220.0100
	Ammonium bromide for analysis EMSURE® ACS	12124-97-9	NH_4Br	1 kg	HDPE bottle	1.01125.1000
				25 kg	Fibre carton	1.01125.9025
	Ammonium carbamate for analysis EMSURE®	1111-78-0	$H_2NCOONH_4$	500 g	HDPE bottle	1.01134.0500
	Ammonium carbonate for analysis EMSURE® ACS, Reag. Ph Eur	10361-29-2		250 g	HDPE bottle	1.59504.0250
				1 kg	HDPE bottle	1.59504.1000
	Ammonium cerium(IV) nitrate for analysis EMSURE® ACS, Reag. Ph Eur	16774-21-3	$(NH_4)_2[Ce(NO_3)_6]$	100 g	HDPE bottle	1.02276.0100
				1 kg	HDPE bottle	1.02276.1000
	Ammonium cerium(IV) sulfate dihydrate for analysis EMSURE® ACS	10378-47-9	$(NH_4)_4Ce(SO_4)_4 * 2\ H_2O$	100 g	HDPE bottle	1.02273.0100
	Ammonium chloride for analysis EMSURE® ACS, ISO, Reag. Ph Eur	12125-02-9	NH_4Cl	500 g	HDPE bottle	1.01145.0500
				1 kg	HDPE bottle	1.01145.1000
				5 kg	HDPE bottle	1.01145.5000
				25 kg	Fibre carton	1.01145.9025
				50 kg	Fibre carton	1.01145.9050
	Ammonium dihydrogen phosphate for analysis EMSURE® ACS, Reag. Ph Eur	7722-76-1	$(NH_4)H_2PO_4$	500 g	HDPE bottle	1.01126.0500
				5 kg	HDPE bottle	1.01126.5000
				50 kg	Fibre carton	1.01126.9050
	Ammonium fluoride for analysis EMSURE® ACS	12125-01-8	NH_4F	250 g	HDPE bottle	1.01164.0250
				1 kg	HDPE bottle	1.01164.1000
				25 kg	Fibre carton	1.01164.9025

EMSURE® EMPLURA®

Salts A–B

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
A	di-Ammonium hydrogen citrate for analysis EMSURE® ACS, Reag. Ph Eur	3012-65-5	$C_6H_8O_7 * 2\ NH_3$	500 g	HDPE bottle	1.01154.0500
				2.5 kg	HDPE bottle	1.01154.2500
				25 kg	Fibre carton	1.01154.9025
	di-Ammonium hydrogen phosphate for analysis EMSURE® ACS, Reag. Ph Eur	7783-28-0	$(NH_4)_2HPO_4$	500 g	HDPE bottle	1.01207.0500
				25 kg	Fibre carton	1.01207.9025
				50 kg	Fibre carton	1.01207.9050
	Ammonium hydrogen difluoride EMPLURA®	1341-49-7	NH_4HF_2	5 kg	HDPE bottle	1.01160.5000
	Ammonium iron(III) sulfate dodecahydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7783-83-7	$(NH_4)Fe(SO_4)_2 * 12\ H_2O$	500 g	HDPE bottle	1.03776.0500
				1 kg	HDPE bottle	1.03776.1000
				5 kg	HDPE bottle	1.03776.5000
				12 kg	PE bucket	1.03776.9012
				50 kg	Fibre carton	1.03776.9050
	Ammonium iron(II) sulfate hexahydrate for analysis EMSURE® ISO	7783-85-9	$(NH_4)_2Fe(SO_4)_2 * 6\ H_2O$	500 g	HDPE bottle	1.03792.0500
				1 kg	HDPE bottle	1.03792.1000
				5 kg	HDPE bottle	1.03792.5000
				50 kg	Fibre carton	1.03792.9050
	Ammonium nitrate for analysis EMSURE® ACS	6484-52-2	NH_4NO_3	500 g	HDPE bottle	1.01188.0500
				1 kg	HDPE bottle	1.01188.1000
				5 kg	HDPE bottle	1.01188.5000
	Ammonium nitrate EMPLURA®	6484-52-2	NH_4NO_3	1 kg	HDPE bottle	1.01187.1000
				5 kg	HDPE bottle	1.01187.5000
	di-Ammonium oxalate monohydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	6009-70-7	$(NH_4)_2C_2O_4 * H_2O$	250 g	HDPE bottle	1.01192.0250
				1 kg	HDPE bottle	1.01192.1000
	di-Ammonium oxalate monohydrate EMPLURA®	6009-70-7	$(NH_4)_2C_2O_4 * H_2O$	1 kg	HDPE bottle	1.01190.1000
				50 kg	Fibre carton	1.01190.9050
	Ammonium peroxodisulfate for analysis EMSURE® ACS, Reag. Ph Eur	7727-54-0	$(NH_4)_2S_2O_8$	500 g	HDPE bottle	1.01201.0500
				1 kg	HDPE bottle	1.01201.1000
				5 kg	HDPE bottle	1.01201.5000
				12 kg	PE bucket	1.01201.9012
	Ammonium peroxodisulfate EMPLURA®	7727-54-0	$(NH_4)_2S_2O_8$	1 kg	HDPE bottle	1.01200.1000
				5 kg	HDPE bottle	1.01200.5000
				25 kg	PE bucket	1.01200.9025
	Ammonium sulfate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7783-20-2	$(NH_4)_2SO_4$	100 g	HDPE bottle	1.01217.0100
				1 kg	HDPE bottle	1.01217.1000
				5 kg	HDPE bottle	1.01217.5000
				25 kg	Fibre carton	1.01217.9025
	Ammonium thiocyanate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1762-95-4	NH_4SCN	500 g	HDPE bottle	1.01213.0500
				25 kg	Fibre carton	1.01213.9025
B	Barium acetate for analysis EMSURE® ACS	543-80-6	$Ba(CH_3COO)_2$	500 g	HDPE bottle	1.01704.0500
	Barium carbonate for analysis EMSURE® ACS, Reag. Ph Eur	513-77-9	$BaCO_3$	250 g	HDPE bottle	1.01714.0250
				1 kg	HDPE bottle	1.01714.1000
				25 kg	Fibre carton	1.01714.9025

Ordering information
Salts

Salts B-C

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
B	Barium chloride dihydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	10326-27-9	$BaCl_2 * 2 H_2O$	500 g	HDPE bottle	1.01719.0500
				1 kg	HDPE bottle	1.01719.1000
				5 kg	HDPE bottle	1.01719.5000
				50 kg	Fibre carton	1.01719.9050
	Barium chloride dihydrate EMPLURA®	10326-27-9	$BaCl_2 * 2 H_2O$	1 kg	HDPE bottle	1.01717.1000
	Barium hydroxide octahydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	12230-71-6	$Ba(OH)_2 * 8 H_2O$	500 g	HDPE bottle	1.01737.0500
	Barium hydroxide octahydrate EMPLURA®	12230-71-6	$Ba(OH)_2 * 8 H_2O$	1 kg	HDPE bottle	1.01735.1000
	Barium nitrate for analysis EMSURE® ACS	10022-31-8	$Ba(NO_3)_2$	500 g	HDPE bottle	1.01729.0500
	Barium perchlorate anhydrous for analysis EMSURE®	13465-95-7	$Ba(ClO_4)_2$	250 g	Metal can	1.01738.0250
				1 kg	Metal can	1.01738.1000
	Bismuth(III) nitrate alkaline for analysis EMSURE® Reag. Ph Eur	1304-85-4	$Bi_5O(OH)_9(NO_3)_4$	100 g	HDPE bottle	1.01878.0100
C	Cadmium acetate dihydrate for analysis EMSURE®	5743-04-4	$(CH_3COO)_2Cd * 2 H_2O$	500 g	HDPE bottle	1.02003.0500
	Cadmium oxide fine powder EMPLURA®	1306-19-0	CdO	5 kg	Metal can	1.02015.5000
	Cadmium sulfate hydrate for analysis EMSURE® ACS	7790-84-3	$3 CdSO_4 * 8 H_2O$	100 g	HDPE bottle	1.02027.0100
	Calcium carbonate precipitated for analysis EMSURE® Reag. Ph Eur	471-34-1	$CaCO_3$	250 g	HDPE bottle	1.02066.0250
				1 kg	HDPE bottle	1.02066.1000
				50 kg	Fibre carton	1.02066.9050
	Calcium carbonate precipitated for analysis of silicates EMSURE®	471-34-1	$CaCO_3$	500 g	HDPE bottle	1.02067.0500
	Calcium chloride dihydrate for analysis EMSURE® ACS, Reag. Ph Eur	10035-04-8	$CaCl_2 * 2 H_2O$	250 g	HDPE bottle	1.02382.0250
				500 g	HDPE bottle	1.02382.0500
				1 kg	HDPE bottle	1.02382.1000
				5 kg	HDPE bottle	1.02382.5000
				25 kg	Fibre carton	1.02382.9025
	Calcium hydroxide for analysis EMSURE® ACS, Reag. Ph Eur	1305-62-0	$Ca(OH)_2$	500 g	HDPE bottle	1.02047.0500
				1 kg	HDPE bottle	1.02047.1000
				50 kg	Fibre carton	1.02047.9050
	Calcium nitrate tetrahydrate for analysis EMSURE® ACS	13477-34-4	$Ca(NO_3)_2 * 4 H_2O$	500 g	HDPE bottle	1.02121.0500
				5 kg	HDPE bottle	1.02121.5000
				50 kg	Fibre carton	1.02121.9050
	Calcium nitrate tetrahydrate EMPLURA®	13477-34-4	$Ca(NO_3)_2 * 4 H_2O$	5 kg	HDPE bottle	1.02120.5000
				50 kg	Fibre carton	1.02120.9050
	Calcium sulfate dihydrate precipitated for analysis EMSURE®	10101-41-4	$CaSO_4 * 2 H_2O$	500 g	HDPE bottle	1.02161.0500
				25 kg	Fibre carton	1.02161.9025
	Cerium(IV) sulfate tetrahydrate for analysis EMSURE®	10294-42-5	$Ce(SO_4)_2 * 4 H_2O$	25 g	HDPE bottle	1.02274.0025
				100 g	HDPE bottle	1.02274.0100
				250 g	HDPE bottle	1.02274.0250
	Chromium(III) nitrate nonahydrate for analysis EMSURE®	7789-02-8	$Cr(NO_3)_3 * 9 H_2O$	250 g	HDPE bottle	1.02481.0250

EMSURE® EMPLURA®

Salts C-I

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
C	Chromium(III) potassium sulfate dodecahydrate for analysis EMSURE® ACS, Reag. Ph Eur	7788-99-0	$KCr(SO_4)_2 * 12\ H_2O$	250 g	HDPE bottle	1.01036.0250
	Cobalt(II) chloride hexahydrate for analysis EMSURE® ACS, Reag. Ph Eur	7791-13-1	$CoCl_2 * 6\ H_2O$	100 g	HDPE bottle	1.02539.0100
				250 g	HDPE bottle	1.02539.0250
	Cobalt(II) chloride hexahydrate EMPLURA®	7791-13-1	$CoCl_2 * 6\ H_2O$	1 kg	HDPE bottle	1.02533.1000
	Cobalt(II) nitrate hexahydrate for analysis EMSURE®	10026-22-9	$Co(NO_3)_2 * 6\ H_2O$	100 g	HDPE bottle	1.02536.0100
				250 g	HDPE bottle	1.02536.0250
	Cobalt(II) sulfate heptahydrate for analysis EMSURE®	10026-24-1	$CoSO_4 * 7\ H_2O$	100 g	HDPE bottle	1.02556.0100
				250 g	HDPE bottle	1.02556.0250
	Copper(II) acetate monohydrate for analysis EMSURE® ACS	6046-93-1	$(CH_3COO)_2Cu * H_2O$	250 g	HDPE bottle	1.02711.0250
				25 kg	Fibre carton	1.02711.9025
	Copper(II) acetate monohydrate cryst. EMPLURA®	6046-93-1	$(CH_3COO)_2Cu * H_2O$	500 g	HDPE bottle	1.02710.0500
				50 kg	Fibre carton	1.02710.9050
	Copper(I) chloride for analysis EMSURE® ACS	7758-89-6	CuCl	250 g	HDPE bottle	1.02739.0250
				25 kg	Fibre carton	1.02739.9025
	Copper(II) chloride dihydrate for analysis EMSURE® ACS, Reag. Ph Eur	10125-13-0	$CuCl_2 * 2\ H_2O$	250 g	HDPE bottle	1.02733.0250
				1 kg	HDPE bottle	1.02733.1000
	Copper(II) nitrate trihydrate for analysis EMSURE®	10031-43-3	$Cu(NO_3)_2 * 3\ H_2O$	250 g	HDPE bottle	1.02753.0250
				1 kg	HDPE bottle	1.02753.1000
				25 kg	Fibre carton	1.02753.9025
	Copper(II) sulfate anhydrous for analysis EMSURE®	7758-98-7	$CuSO_4$	250 g	HDPE bottle	1.02791.0250
				1 kg	HDPE bottle	1.02791.1000
	Copper(II) sulfate pentahydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7758-99-8	$CuSO_4 * 5\ H_2O$	250 g	HDPE bottle	1.02790.0250
				1 kg	HDPE bottle	1.02790.1000
				5 kg	HDPE bottle	1.02790.5000
				50 kg	Fibre carton	1.02790.9050
	Copper(II) sulfate pentahydrate very fine crystals EMPLURA®	7758-99-8	$CuSO_4 * 5\ H_2O$	5 kg	HDPE bottle	1.02780.5000
				50 kg	Fibre carton	1.02780.9050
I	Iron(III) chloride hexahydrate for analysis EMSURE® ACS, Reag. Ph Eur	10025-77-1	$FeCl_3 * 6\ H_2O$	250 g	HDPE bottle	1.03943.0250
				1 kg	HDPE bottle	1.03943.1000
				25 kg	PE drum	1.03943.9025
	Iron(III) chloride solution (10% Fe) for analysis EMSURE®			250 mL	HDPE bottle	1.05512.0250
	Iron(II) chloride tetrahydrate for analysis EMSURE®	13478-10-9	$FeCl_2 * 4\ H_2O$	250 g	HDPE bottle	1.03861.0250
				1 kg	HDPE bottle	1.03861.1000
				50 kg	PE drum	1.03861.9050
	Iron(II) chloride tetrahydrate EMPLURA®	13478-10-9	$FeCl_2 * 4\ H_2O$	1 kg	HDPE bottle	1.02459.1000
				12.5 kg	PE bucket	1.02459.9012
	Iron(III) nitrate nonahydrate for analysis EMSURE® ACS, Reag. Ph Eur	7782-61-8	$Fe(NO_3)_3 * 9\ H_2O$	250 g	HDPE bottle	1.03883.0250
				1 kg	HDPE bottle	1.03883.1000

Ordering information
Salts

Salts I-M

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
I	Iron(II) sulfate heptahydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7782-63-0	$FeSO_4 * 7 H_2O$	100 g	HDPE bottle	1.03965.0100
				500 g	HDPE bottle	1.03965.0500
				1 kg	HDPE bottle	1.03965.1000
				5 kg	HDPE bottle	1.03965.5000
				25 kg	PE drum	1.03965.9025
L	Lead(II) acetate trihydrate for analysis EMSURE® ACS, Reag. Ph Eur	6080-56-4	$(CH_3COO)_2Pb * 3 H_2O$	250 g	HDPE bottle	1.07375.0250
				1 kg	HDPE bottle	1.07375.1000
	Lead(II) carbonate for analysis EMSURE® ACS	598-63-0	$PbCO_3$	250 g	HDPE bottle	1.07381.0250
	Lead(II) hydroxide acetate anhydrous for the analysis of sugar acc. to Horne EMSURE®	51404-69-4	$(CH_3COO)_2Pb * Pb(OH)_2$	1 kg	HDPE bottle	1.07414.1000
				30 kg	Fibre carton	1.07414.9030
	Lead(II) nitrate for analysis EMSURE® ACS, Reag. Ph Eur	10099-74-8	$Pb(NO_3)_2$	100 g	HDPE bottle	1.07398.0100
				1 kg	HDPE bottle	1.07398.1000
	Lithium bromide EMPLURA®	7550-35-8	LiBr	1 kg	HDPE bottle	1.05669.1000
	Lithium carbonate for analysis EMSURE® ACS, Reag. Ph Eur	554-13-2	Li_2CO_3	250 g	HDPE bottle	1.05680.0250
	Lithium carbonate EMPLURA®	554-13-2	Li_2CO_3	1 kg	HDPE bottle	1.05670.1000
				50 kg	Fibre carton	1.05670.9050
	Lithium chloride for analysis EMSURE® ACS, Reag. Ph Eur	7447-41-8	LiCl	100 g	HDPE bottle	1.05679.0100
				250 g	HDPE bottle	1.05679.0250
				12 kg	PE bucket	1.05679.9012
	Lithium sulfate monohydrate for analysis EMSURE® ACS, Reag. Ph Eur	10102-25-7	$Li_2SO_4 * H_2O$	250 g	HDPE bottle	1.05694.0250
M	Magnesium acetate tetrahydrate for analysis EMSURE® ACS, Reag. Ph Eur	16674-78-5	$(CH_3COO)_2Mg * 4 H_2O$	250 g	HDPE bottle	1.05819.0250
				1 kg	HDPE bottle	1.05819.1000
				50 kg	Fibre carton	1.05819.9050
	Magnesium chloride hexahydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7791-18-6	$MgCl_2 * 6 H_2O$	250 g	HDPE bottle	1.05833.0250
				1 kg	HDPE bottle	1.05833.1000
				5 kg	HDPE bottle	1.05833.5000
				25 kg	Fibre carton	1.05833.9025
	Magnesium nitrate hexahydrate for analysis EMSURE® ACS, Reag. Ph Eur	13446-18-9	$Mg(NO_3)_2 * 6 H_2O$	500 g	HDPE bottle	1.05853.0500
				25 kg	PE drum	1.05853.9025
	Magnesium perchlorate hydrate [about 83% $Mg(ClO_4)_2$] for analysis EMSURE®	64010-42-0	$Mg(ClO_4)_2 * x H_2O$	100 g	Metal can	1.05874.0100
				500 g	Metal can	1.05874.0500
	Magnesium sulfate anhydrous for analysis EMSURE®	7487-88-9	$MgSO_4$	1 kg	Glass bottle	1.06067.1000
				25 kg	PE drum	1.06067.9025
	Magnesium sulfate heptahydrate for analysis EMSURE® ACS, Reag. Ph Eur	10034-99-8	$MgSO_4 * 7 H_2O$	500 g	HDPE bottle	1.05886.0500
				1 kg	HDPE bottle	1.05886.1000
				5 kg	HDPE bottle	1.05886.5000
				50 kg	Fibre carton	1.05886.9050
	Manganese(II) chloride tetrahydrate for analysis EMSURE® ACS	13446-34-9	$MnCl_2 * 4 H_2O$	100 g	HDPE bottle	1.05927.0100
				1 kg	HDPE bottle	1.05927.1000

EMSURE® EMPLURA®

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
M	Manganese(II) nitrate tetrahydrate for analysis EMSURE®	20694-39-7	$Mn(NO_3)_2 * 4 H_2O$	500 g	HDPE bottle	1.05940.0500
				1 kg	HDPE bottle	1.05940.1000
				25 kg	Metal drum	1.05940.9025
	Manganese(II) sulfate monohydrate spray-dried for analysis EMSURE® ACS, Reag. Ph Eur	10034-96-5	$MnSO_4 * H_2O$	250 g	HDPE bottle	1.05941.0250
				25 kg	Fibre carton	1.05941.9025
	Mercury for analysis and for polarography EMSURE®	7439-97-6	Hg	250 g	HDPE bottle	1.04403.0250
				1 kg	HDPE bottle	1.04403.1000
	Mercury EMPLURA®	7439-97-6	Hg	250 g	HDPE bottle	1.04401.0250
	Mercury(II) acetate for analysis EMSURE® ACS, Reag. Ph Eur	1600-27-7	$Hg(CH_3COO)_2$	50 g	HDPE bottle	1.04410.0050
				250 g	HDPE bottle	1.04410.0250
	Mercury(II) bromide for analysis EMSURE® ACS	7789-47-1	$HgBr_2$	50 g	HDPE bottle	1.04421.0050
				250 g	HDPE bottle	1.04421.0250
	Mercury(II) chloride for analysis EMSURE® Reag. Ph Eur, ACS	7487-94-7	$HgCl_2$	50 g	HDPE bottle	1.04419.0050
				250 g	HDPE bottle	1.04419.0250
				1 kg	HDPE bottle	1.04419.1000
	Mercury(II) chloride fine cryst. EMPLURA®	7487-94-7	$HgCl_2$	100 g	HDPE bottle	1.04417.0100
	Mercury(II) iodide red, for analysis EMSURE® ACS, Reag. Ph Eur	7774-29-0	HgI_2	50 g	HDPE bottle	1.04428.0050
				250 g	HDPE bottle	1.04428.0250
	Mercury(II) iodide red EMPLURA®	7774-29-0	HgI_2	100 g	HDPE bottle	1.04420.0100
				1 kg	HDPE bottle	1.04420.1000
	Mercury(II) nitrate monohydrate for analysis EMSURE® ACS, Reag. Ph Eur	7783-34-8	$Hg(NO_3)_2 * H_2O$	50 g	HDPE bottle	1.04439.0050
				250 g	HDPE bottle	1.04439.0250
	Mercury(II) oxide red, for analysis EMSURE®	21908-53-2	HgO	50 g	HDPE bottle	1.04466.0050
				250 g	HDPE bottle	1.04466.0250
	Mercury(II) sulfate for analysis EMSURE® ACS	7783-35-9	$HgSO_4$	50 g	HDPE bottle	1.04480.0050
				250 g	HDPE bottle	1.04480.0250
	Mercury(II) sulfate EMPLURA®	7783-35-9	$HgSO_4$	100 g	HDPE bottle	1.04481.0100
				250 g	HDPE bottle	1.04481.0250
				1 kg	HDPE bottle	1.04481.1000
	Mercury(II) thiocyanate for analysis EMSURE® Reag. Ph Eur	592-85-8	$Hg(SCN)_2$	25 g	HDPE bottle	1.04484.0025
				100 g	HDPE bottle	1.04484.0100
N	Nickel(II) chloride hexahydrate for analysis EMSURE® ACS	7791-20-0	$NiCl_2 * 6 H_2O$	250 g	HDPE bottle	1.06717.0250
				1 kg	HDPE bottle	1.06717.1000
	Nickel(II) nitrate hexahydrate for analysis EMSURE® ACS	13478-00-7	$Ni(NO_3)_2 * 6 H_2O$	100 g	HDPE bottle	1.06721.0100
				250 g	HDPE bottle	1.06721.0250
				1 kg	HDPE bottle	1.06721.1000
	Nickel(II) sulfate hexahydrate for analysis EMSURE® ACS	10101-97-0	$NiSO_4 * 6 H_2O$	100 g	HDPE bottle	1.06727.0100
				250 g	HDPE bottle	1.06727.0250
				1 kg	HDPE bottle	1.06727.1000
	Nickel(II) sulfate hexahydrate EMPLURA®	10101-97-0	$NiSO_4 * 6 H_2O$	1 kg	HDPE bottle	1.06726.1000

Ordering information
Salts

Salts N-P

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
P	Potassium antimony(III) oxide tartrate trihydrate EMPLURA®	28300-74-5	$K_2(SbO)_2C_8H_4O_{10} * 3\ H_2O$	250 g	HDPE bottle	1.08092.0250
				1 kg	HDPE bottle	1.08092.1000
	Potassium bromate for analysis (max 0,000001% Hg) EMSURE® ACS, ISO, Reag. Ph Eur	7758-01-2	$KBrO_3$	100 g	Metal can	1.04912.0100
				250 g	Metal can	1.04912.0250
				25 kg	Metal drum	1.04912.9025
	Potassium bromide for analysis (max. 0.000001% Hg) EMSURE®ACS, Reag. Ph Eur	7758-02-3	KBr	500 g	HDPE bottle	1.04905.0500
	Potassium carbonate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	584-08-7	K_2CO_3	500 g	HDPE bottle	1.04928.0500
				1 kg	HDPE bottle	1.04928.1000
				50 kg	Fibre carton	1.04928.9050
	Potassium carbonate special grade	584-08-7	K_2CO_3	25 kg	Fibre carton	1.10614.9025
	Potassium chlorate for analysis EMSURE® ACS, Reag. Ph Eur	3811-04-9	$KClO_3$	100 g	Metal can	1.04944.0100
				500 g	Metal can	1.04944.0500
				12 kg	PE bucket	1.04944.9012
	Potassium chloride for analysis (≤ 0.005% Br) EMSURE® ACS, ISO, Reag. Ph Eur	7447-40-7	KCl	500 g	HDPE bottle	1.04933.0500
				25 kg	Fibre carton	1.04933.9025
	Potassium chloride for analysis EMSURE®	7447-40-7	KCl	250 g	HDPE bottle	1.04936.0250
				500 g	HDPE bottle	1.04936.0500
				1 kg	HDPE bottle	1.04936.1000
				5 kg	HDPE bottle	1.04936.5000
				10 kg	Fibre carton	1.04936.9010
				50 kg	Fibre carton	1.04936.9050
	Potassium chromate for analysis EMSURE® ACS, Reag. Ph Eur	7789-00-6	K_2CrO_4	250 g	HDPE bottle	1.04952.0250
				1 kg	HDPE bottle	1.04952.1000
	Potassium cyanide for analysis EMSURE® ACS, ISO, Reag. Ph Eur	151-50-8	KCN	100 g	HDPE bottle	1.04967.0100
				250 g	HDPE bottle	1.04967.0250
				1 kg	HDPE bottle	1.04967.1000
	Potassium cyanide EMPLURA®	151-50-8	KCN	1 kg	HDPE bottle	1.04965.1000
	Potassium dichromate for analysis (max. 0.000001% Hg) EMSURE® ACS, ISO	7778-50-9	$K_2Cr_2O_7$	500 g	Glass bottle	1.04865.0500
	Potassium dichromate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7778-50-9	$K_2Cr_2O_7$	500 g	HDPE bottle	1.04864.0500
				1 kg	HDPE bottle	1.04864.1000
	Potassium dihydrogen phosphate for analysis (≤ 0.005% Na) EMSURE® ACS, ISO, Reag. Ph Eur	7778-77-0	KH_2PO_4	1 kg	HDPE bottle	1.04877.1000
				12 kg	PE bucket	1.04877.9012
				25 kg	Fibre carton	1.04877.9025
	Potassium dihydrogen phosphate for analysis EMSURE® ISO	7778-77-0	KH_2PO_4	250 g	HDPE bottle	1.04873.0250
				1 kg	HDPE bottle	1.04873.1000
				5 kg	HDPE bottle	1.04873.5000
				25 kg	Fibre carton	1.04873.9025
				50 kg	Fibre carton	1.04873.9050

EMSURE® EMPLURA®

Salts P

Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
Potassium disulfate (potassium pyrosulfate) for analysis EMSURE® ACS	7790-62-7	$K_2S_2O_7$	1 kg	HDPE bottle	1.05107.1000
			5 kg	HDPE bottle	1.05107.5000
			50 kg	PE drum	1.05107.9050
Potassium disulfite for analysis EMSURE®	16731-55-8	$K_2S_2O_5$	500 g	HDPE bottle	1.05057.0500
			1 kg	HDPE bottle	1.05057.1000
			2.5 kg	HDPE bottle	1.05057.2500
Potassium fluoride for analysis EMSURE® ACS	7789-23-3	KF	250 g	HDPE bottle	1.04994.0250
			1 kg	HDPE bottle	1.04994.1000
Potassium hexacyanoferrate(III) for analysis EMSURE® ACS, Reag. Ph Eur	13746-66-2	$K_3[Fe(CN)_6]$	100 g	HDPE bottle	1.04973.0100
			250 g	HDPE bottle	1.04973.0250
			1 kg	HDPE bottle	1.04973.1000
Potassium hexacyanoferrate(III) EMPLURA®	13746-66-2	$K_3[Fe(CN)_6]$	1 kg	HDPE bottle	1.04971.1000
Potassium hexacyanoferrate(II) trihydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	14459-95-1	$K_4[Fe(CN)_6] * 3 H_2O$	100 g	HDPE bottle	1.04984.0100
			500 g	HDPE bottle	1.04984.0500
			50 kg	Fibre carton	1.04984.9050
Potassium hexacyanoferrate(II) trihydrate EMPLURA®	14459-95-1	$K_4[Fe(CN)_6] * 3 H_2O$	1 kg	HDPE bottle	1.04982.1000
			25 kg	Fibre carton	1.04982.9025
Potassium hexahydroxoantimonate(V) cryst. for analysis EMSURE®	12208-13-8	$K[Sb(OH)_6]$	100 g	HDPE bottle	1.05110.0100
Potassium hydrogen carbonate for analysis EMSURE® ACS	298-14-6	$KHCO_3$	500 g	HDPE bottle	1.04854.0500
			25 kg	Fibre carton	1.04854.9025
di-Potassium hydrogen phosphate anhydrous for analysis EMSURE®	7758-11-4	K_2HPO_4	1 kg	HDPE bottle	1.05104.1000
			25 kg	Fibre carton	1.05104.9025
			50 kg	Fibre carton	1.05104.9050
di-Potassium hydrogen phosphate trihydrate for analysis EMSURE®	16788-57-1	$K_2HO_4P * 3 H_2O$	250 g	HDPE bottle	1.05099.0250
			1 kg	HDPE bottle	1.05099.1000
			5 kg	HDPE bottle	1.05099.5000
			25 kg	Fibre carton	1.05099.9025
			50 kg	Fibre carton	1.05099.9050
Potassium hydrogen phthalate for analysis EMSURE® Reag. Ph Eur	877-24-7	$C_8H_5KO_4$	250 g	HDPE bottle	1.04874.0250
			1 kg	HDPE bottle	1.04874.1000
			12 kg	PE bucket	1.04874.9012
Potassium hydrogen sulfate for analysis EMSURE® Reag. Ph Eur	7646-93-7	$KHSO_4$	500 g	HDPE bottle	1.04885.0500
			2.5 kg	HDPE bottle	1.04885.2500
			25 kg	Fibre carton	1.04885.9025
Potassium iodate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7758-05-6	KIO_3	100 g	HDPE bottle	1.05051.0100
			500 g	HDPE bottle	1.05051.0500
			25 kg	PE drum	1.05051.9025

Ordering information
Salts

Salts P-R

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
P	Potassium iodide for analysis EMSURE® ISO, Reag. Ph Eur	7681-11-0	KI	250 g	HDPE bottle	1.05043.0250
				500 g	HDPE bottle	1.05043.0500
				1 kg	HDPE bottle	1.05043.1000
				2.5 kg	HDPE bottle	1.05043.2500
				50 kg	Fibre carton	1.05043.9050
	Potassium nitrate for analysis EMSURE® ISO, Reag. Ph Eur	7757-79-1	KNO_3	500 g	HDPE bottle	1.05063.0500
				1 kg	HDPE bottle	1.05063.1000
				5 kg	HDPE bottle	1.05063.5000
				25 kg	Fibre carton	1.05063.9025
	Potassium nitrite cryst. for analysis EMSURE® ACS	7758-09-0	KNO_2	250 g	HDPE bottle	1.05067.0250
	di-Potassium oxalate monohydrate for analysis EMSURE® ACS	6487-48-5	$K_2C_2O_4 * H_2O$	250 g	HDPE bottle	1.05073.0250
				1 kg	HDPE bottle	1.05073.1000
	Potassium perchlorate for analysis EMSURE® ACS	7778-74-7	$KClO_4$	250 g	Metal can	1.05076.0250
				1 kg	Metal can	1.05076.1000
	Potassium permanganate for analysis (max. 0.000005% Hg) EMSURE® ACS	7722-64-7	$KMnO_4$	1 kg	Glass bottle	1.05084.1000
	Potassium permanganate for analysis EMSURE® ACS, Reag. Ph Eur	7722-64-7	$KMnO_4$	250 g	Glass bottle	1.05082.0250
				1 kg	Glass bottle	1.05082.1000
	Potassium permanganate cryst. EMPLURA®	7722-64-7	$KMnO_4$	1 kg	Glass bottle	1.05080.1000
				5 kg	Metal can	1.05080.5000
				50 kg	Steel drum	1.05080.9050
	Potassium peroxodisulfate for analysis (≤ 0.001% N) EMSURE® ACS, Reag. Ph Eur	7727-21-1	$K_2S_2O_8$	250 g	HDPE bottle	1.05092.0250
	Potassium peroxodisulfate for analysis EMSURE®	7727-21-1	$K_2S_2O_8$	250 g	HDPE bottle	1.05091.0250
				1 kg	HDPE bottle	1.05091.1000
	Potassium sodium tartrate tetrahydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	6381-59-5	$C_4H_4KNaO_6 * 4\ H_2O$	500 g	HDPE bottle	1.08087.0500
				1 kg	HDPE bottle	1.08087.1000
				5 kg	HDPE bottle	1.08087.5000
				12 kg	PE bucket	1.08087.9012
				50 kg	Fibre carton	1.08087.9050
	Potassium sulfate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7778-80-5	K_2SO_4	500 g	HDPE bottle	1.05153.0500
				1 kg	HDPE bottle	1.05153.1000
				5 kg	HDPE bottle	1.05153.5000
				25 kg	Fibre carton	1.05153.9025
	Potassium sulfide small lumps for analysis EMSURE®	39365-88-3		250 g	HDPE bottle	1.05134.0250
				1 kg	HDPE bottle	1.05134.1000
	Potassium thiocyanate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	333-20-0	KSCN	250 g	HDPE bottle	1.05125.0250
				1 kg	HDPE bottle	1.05125.1000
				50 kg	Fibre carton	1.05125.9050
	Potassium thiocyanate EMPLURA®	333-20-0	KSCN	1 kg	HDPE bottle	1.05124.1000

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Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
Silver nitrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7761-88-8	$AgNO_3$	25 g	HDPE bottle	1.01512.0025
			100 g	HDPE bottle	1.01512.0100
			250 g	HDPE bottle	1.01512.0250
			1 kg	HDPE bottle	1.01512.1000
Sodium acetate anhydrous for analysis EMSURE® ACS, Reag. Ph Eur	127-09-3	CH_3COONa	250 g	HDPE bottle	1.06268.0250
			1 kg	HDPE bottle	1.06268.1000
			2.5 kg	HDPE bottle	1.06268.2500
			12 kg	PE bucket	1.06268.9012
			25 kg	Fibre carton	1.06268.9025
Sodium acetate trihydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	6131-90-4	$CH_3COONa * 3\ H_2O$	500 g	HDPE bottle	1.06267.0500
			1 kg	HDPE bottle	1.06267.1000
			5 kg	HDPE bottle	1.06267.5000
			12 kg	PE bucket	1.06267.9012
			50 kg	Fibre carton	1.06267.9050
Sodium ammonium hydrogen phosphate tetrahydrate for analysis EMSURE®	7783-13-3	$NaNH_4HPO_4 * 4\ H_2O$	1 kg	HDPE bottle	1.06682.1000
Sodium carbonate anhydrous for analysis EMSURE® ACS, ISO, Reag. Ph Eur	497-19-8	Na_2CO_3	1 kg	HDPE bottle	1.06393.1000
			50 kg	Fibre carton	1.06393.9050
Sodium carbonate anhydrous for analysis EMSURE® ISO	497-19-8	Na_2CO_3	500 g	HDPE bottle	1.06392.0500
			1 kg	HDPE bottle	1.06392.1000
			5 kg	HDPE bottle	1.06392.5000
			25 kg	Fibre carton	1.06392.9025
Sodium carbonate decahydrate for analysis EMSURE® ISO, Reag. Ph Eur	6132-02-1	$Na_2CO_3 * 10\ H_2O$	1 kg	HDPE bottle	1.06391.1000
			5 kg	HDPE bottle	1.06391.5000
			25 kg	Fibre carton	1.06391.9025
Sodium chlorate EMPLURA®	7775-09-9	$NaClO_3$	1 kg	HDPE bottle	1.06420.1000
			50 kg	PE drum	1.06420.9050
Sodium chloride for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7647-14-5	NaCl	500 g	HDPE bottle	1.06404.0500
			1 kg	HDPE bottle	1.06404.1000
			5 kg	HDPE bottle	1.06404.5000
			12 kg	PE bucket	1.06404.9012
			25 kg	Fibre carton	1.06404.9025
			50 kg	Fibre carton	1.06404.9050
tri-Sodium citrate dihydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	6132-04-3	$C_6H_5Na_3O_7 * 2\ H_2O$	500 g	HDPE bottle	1.06448.0500
			1 kg	HDPE bottle	1.06448.1000
			5 kg	HDPE bottle	1.06448.5000
			25 kg	Fibre carton	1.06448.9025
Sodium cyanide EMPLURA®	143-33-9	NaCN	1 kg	HDPE bottle	1.06437.1000
Sodium dichromate dihydrate for analysis EMSURE® ACS	7789-12-0	$Na_2Cr_2O_7 * 2\ H_2O$	250 g	HDPE bottle	1.06336.0250
			1 kg	HDPE bottle	1.06336.1000

Ordering information
Salts

Salts S

Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
S					
Sodium dihydrogen phosphate dihydrate for analysis EMSURE® Reag. Ph Eur	13472-35-0	$NaH_2PO_4 * 2\ H_2O$	250 g	HDPE bottle	1.06342.0250
			1 kg	HDPE bottle	1.06342.1000
			2.5 kg	HDPE bottle	1.06342.2500
			25 kg	Fibre carton	1.06342.9025
Sodium dihydrogen phosphate monohydrate for analysis EMSURE® ACS, Reag. Ph Eur	10049-21-5	$NaH_2PO_4 * H_2O$	500 g	HDPE bottle	1.06346.0500
			1 kg	HDPE bottle	1.06346.1000
			12 kg	PE bucket	1.06346.9012
			25 kg	Fibre carton	1.06346.9025
			50 kg	Fibre carton	1.06346.9050
tetra-Sodium diphosphate decahydrate for analysis EMSURE® ACS, Reag. Ph Eur	13472-36-1	$Na_4P_2O_7 * 10\ H_2O$	500 g	HDPE bottle	1.06591.0500
			2.5 kg	HDPE bottle	1.06591.2500
			50 kg	Fibre carton	1.06591.9050
Sodium disulfite (sodium metabisulfite) for analysis EMSURE® ACS, Reag. Ph Eur	7681-57-4	$Na_2S_2O_5$	100 g	HDPE bottle	1.06528.0100
			500 g	HDPE bottle	1.06528.0500
			1 kg	HDPE bottle	1.06528.1000
			5 kg	HDPE bottle	1.06528.5000
			50 kg	Fibre carton	1.06528.9050
Sodium dithionite EMPLURA®	7775-14-6	$Na_2S_2O_4$	1 kg	Metal can	1.06505.1000
			50 kg	Steel drum	1.06505.9050
Sodium fluoride for analysis EMSURE® Reag. Ph Eur	7681-49-4	NaF	250 g	HDPE bottle	1.06449.0250
			1 kg	HDPE bottle	1.06449.1000
			50 kg	Fibre carton	1.06449.9050
Sodium formate for analysis EMSURE® ACS, Reag. Ph Eur	141-53-7	HCOONa	500 g	HDPE bottle	1.06443.0500
			50 kg	Fibre carton	1.06443.9050
Sodium hexanitrocobaltate(III) [sodium cobalt(III) nitrite] for analysis EMSURE® ACS, Reag. Ph Eur	13600-98-1	$Na_3[Co(NO_2)_6]$	25 g	HDPE bottle	1.02521.0025
			100 g	HDPE bottle	1.02521.0100
Sodium hydrogen carbonate for analysis EMSURE® ACS, Reag. Ph Eur	144-55-8	$NaHCO_3$	500 g	HDPE bottle	1.06329.0500
			1 kg	HDPE bottle	1.06329.1000
			5 kg	HDPE bottle	1.06329.5000
			12 kg	PE bucket	1.06329.9012
			25 kg	PE drum	1.06329.9025
			50 kg	Fibre carton	1.06329.9050
di-Sodium hydrogen phosphate anhydrous particle size about 0.2 - 1 mm (~18–80 mesh ASTM) EMSURE®	7558-79-4	Na_2HPO_4	500 g	HDPE bottle	1.06559.0500
			25 kg	Fibre carton	1.06559.9025
di-Sodium hydrogen phosphate anhydrous for analysis EMSURE® ACS, Reag. Ph Eur	7558-79-4	Na_2HPO_4	500 g	HDPE bottle	1.06586.0500
			1 kg	HDPE bottle	1.06586.1000
			2.5 kg	HDPE bottle	1.06586.2500
			12 kg	PE bucket	1.06586.9012
			50 kg	Fibre carton	1.06586.9050
di-Sodium hydrogen phosphate dihydrate for analysis EMSURE®	10028-24-7	$Na_2HPO_4 * 2\ H_2O$	500 g	HDPE bottle	1.06580.0500
			1 kg	HDPE bottle	1.06580.1000
			5 kg	HDPE bottle	1.06580.5000
			25 kg	Fibre carton	1.06580.9025
			50 kg	Fibre carton	1.06580.9050

EMSURE® EMPLURA®

Salts S

Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
S					
di-Sodium hydrogen phosphate dodecahydrate for analysis EMSURE® ISO, Reag. Ph Eur	10039-32-4	$Na_2HPO_4 * 12\ H_2O$	500 g	HDPE bottle	1.06579.0500
			1 kg	HDPE bottle	1.06579.1000
			5 kg	HDPE bottle	1.06579.5000
			25 kg	Fibre carton	1.06579.9025
di-Sodium hydrogen phosphate heptahydrate for analysis EMSURE® ACS	7782-85-6	$Na_2HPO_4 * 7\ H_2O$	1 kg	HDPE bottle	1.06575.1000
			25 kg	Fibre carton	1.06575.9025
Sodium hydrogen sulfate monohydrate for analysis EMSURE®	10034-88-5	$NaHSO_4 * H_2O$	500 g	HDPE bottle	1.06352.0500
Sodium hypochlorite solution (6–14% active chlorine) EMPLURA®			2.5 l	HDPE bottle	1.05614.2500
			25 l	PE canister	1.05614.9025
Sodium iodate for analysis EMSURE®	7681-55-2	$NaIO_3$	100 g	Glass bottle	1.06525.0100
			1 kg	Glass bottle	1.06525.1000
Sodium iodide for analysis EMSURE® ACS, Reag. Ph Eur	7681-82-5	NaI	100 g	HDPE bottle	1.06523.0100
			250 g	HDPE bottle	1.06523.0250
			1 kg	HDPE bottle	1.06523.1000
Sodium metaperiodate for analysis EMSURE® ACS, Reag. Ph Eur	7790-28-5	$NaIO_4$	50 g	HDPE bottle	1.06597.0050
			250 g	HDPE bottle	1.06597.0250
			1 kg	HDPE bottle	1.06597.1000
Sodium metaperiodate EMPLURA®	7790-28-5	$NaIO_4$	1 kg	HDPE bottle	1.06596.1000
			25 kg	Steel drum	1.06596.9025
Sodium molybdate dihydrate for analysis EMSURE® ACS, Reag. Ph Eur	10102-40-6	$Na_2MoO_4 * 2\ H_2O$	100 g	HDPE bottle	1.06521.0100
			250 g	HDPE bottle	1.06521.0250
			1 kg	HDPE bottle	1.06521.1000
Sodium molybdate dihydrate EMPLURA®	10102-40-6	$Na_2MoO_4 * 2\ H_2O$	1 kg	HDPE bottle	1.06524.1000
			50 kg	Fibre carton	1.06524.9050
Sodium nitrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7631-99-4	$NaNO_3$	500 g	HDPE bottle	1.06537.0500
			1 kg	HDPE bottle	1.06537.1000
			12 kg	PE bucket	1.06537.9012
			25 kg	Fibre carton	1.06537.9025
Sodium nitrate cryst. EMPLURA®	7631-99-4	$NaNO_3$	1 kg	HDPE bottle	1.06535.1000
			50 kg	Fibre carton	1.06535.9050
Sodium nitrite for analysis EMSURE® ACS, Reag. Ph Eur	7632-00-0	$NaNO_2$	100 g	HDPE bottle	1.06549.0100
			500 g	HDPE bottle	1.06549.0500
			12 kg	PE bucket	1.06549.9012
di-Sodium oxalate for analysis EMSURE®	62-76-0	$Na_2C_2O_4$	250 g	HDPE bottle	1.06557.0250
			1 kg	HDPE bottle	1.06557.1000
Sodium perchlorate monohydrate for analysis EMSURE®	7791-07-3	$NaClO_4 * H_2O$	100 g	Metal can	1.06564.0100
			500 g	Metal can	1.06564.0500
			2.5 kg	Metal can	1.06564.2500
			25 kg	Steel drum	1.06564.9025

Ordering information
Salts

Salts S

Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
S					
Sodium peroxidisulfate for analysis EMSURE®	7775-27-1	$Na_2S_2O_8$	500 g	HDPE bottle	1.06609.0500
			1 kg	HDPE bottle	1.06609.1000
			5 kg	HDPE bottle	1.06609.5000
			12 kg	PE bucket	1.06609.9012
			25 kg	Fibre carton	1.06609.9025
tri-Sodium phosphate dodecahydrate for analysis EMSURE® ACS, Reag. Ph Eur	10101-89-0	Na_3PO_4 * 12 H_2O	1 kg	HDPE bottle	1.06578.1000
			5 kg	HDPE bottle	1.06578.5000
			12 kg	PE bucket	1.06578.9012
			50 kg	Fibre carton	1.06578.9050
tri-Sodium phosphate dodecahydrate for analysis EMSURE®	10101-89-0	Na_3PO_4 * 12 H_2O	1 kg	HDPE bottle	1.06572.1000
			5 kg	HDPE bottle	1.06572.5000
			25 kg	Fibre carton	1.06572.9025
Sodium polyphosphate EMPLURA® (Graham's salt)	10361-03-2	$(NaPO_3)_n$ / n = ~ 25	1 kg	HDPE bottle	1.06529.1000
			5 kg	HDPE bottle	1.06529.5000
			50 kg	Fibre carton	1.06529.9050
Sodium salicylate for analysis EMSURE®	54-21-7	HOC_6H_4COONa	250 g	HDPE bottle	1.06601.0250
			1 kg	HDPE bottle	1.06601.1000
			2.5 kg	HDPE bottle	1.06601.2500
Sodium sulfate anhydrous coarse granules for analysis EMSURE® ACS	7757-82-6	Na_2SO_4	500 g	HDPE bottle	1.06637.0500
			1 kg	HDPE bottle	1.06637.1000
			25 kg	Fibre carton	1.06637.9025
Sodium sulfate anhydrous for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7757-82-6	Na_2SO_4	500 g	HDPE bottle	1.06649.0500
			1 kg	HDPE bottle	1.06649.1000
			5 kg	HDPE bottle	1.06649.5000
			12 kg	PE bucket	1.06649.9012
			25 kg	Fibre carton	1.06649.9025
Sodium sulfate anhydrous granulated for organic trace analysis EMSURE®	7757-82-6	Na_2SO_4	500 g	Glass bottle	1.06639.0500
Sodium sulfate decahydrate for analysis EMSURE® ACS, Reag. Ph Eur	7727-73-3	Na_2SO_4 * 10 H_2O	1 kg	HDPE bottle	1.06648.1000
			25 kg	Fibre carton	1.06648.9025
Sodium sulfite anhydrous for analysis EMSURE® Reag. Ph Eur	7757-83-7	Na_2SO_3	500 g	HDPE bottle	1.06657.0500
			1 kg	HDPE bottle	1.06657.1000
			5 kg	HDPE bottle	1.06657.5000
			50 kg	Fibre carton	1.06657.9050
di-Sodium tartrate dihydrate for analysis EMSURE®	6106-24-7	$C_4H_4Na_2O_6$ * 2 H_2O	250 g	HDPE bottle	1.06663.0250
			1 kg	HDPE bottle	1.06663.1000
Sodium thiocyanate EMPLURA®	540-72-7	NaSCN	2.5 kg	HDPE bottle	1.06627.2500
Sodium thiosulfate anhydrous EMPLURA®	7772-98-7	$Na_2O_3S_2$	250 g	HDPE bottle	1.06512.0250
			2.5 kg	HDPE bottle	1.06512.2500
			25 kg	Fibre carton	1.06512.9025
			50 kg	Fibre carton	1.06512.9050

EMSURE® EMPLURA®

Salts S-Z

	Product	CAS No.	Chemical formula	Content	Packaging	Ord. No.
S	Sodium thiosulfate pentahydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	10102-17-7	$Na_2O_3S_2 * 5 H_2O$	500 g	HDPE bottle	1.06516.0500
				1 kg	HDPE bottle	1.06516.1000
				5 kg	HDPE bottle	1.06516.5000
				25 kg	Fibre carton	1.06516.9025
	Sodium tungstate dihydrate for analysis EMSURE®	10213-10-2	$Na_2WO_4 * 2 H_2O$	250 g	HDPE bottle	1.06673.0250
				1 kg	HDPE bottle	1.06673.1000
				25 kg	Fibre carton	1.06673.9025
	Sodium tungstate dihydrate EMPLURA®	10213-10-2	$Na_2WO_4 * 2 H_2O$	1 kg	HDPE bottle	1.06672.1000
				25 kg	Fibre carton	1.06672.9025
	Strontium chloride hexahydrate for analysis EMSURE® ACS	10025-70-4	$SrCl_2 * 6 H_2O$	250 g	HDPE bottle	1.07865.0250
				1 kg	HDPE bottle	1.07865.1000
	Strontium nitrate for analysis EMSURE®	10042-76-9	$Sr(NO_3)_2$	250 g	HDPE bottle	1.07872.0250
				25 kg	Fibre carton	1.07872.9025
T	Tin(IV) chloride EMPLURA®	7646-78-8	$SnCl_4$	500 mL	Glass bottle	1.07810.0500
	Tin(II) chloride dihydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	10025-69-1	$SnCl_2 * 2 H_2O$	100 g	Glass bottle	1.07815.0100
				250 g	Glass bottle	1.07815.0250
				1 kg	Glass bottle	1.07815.1000
				25 kg	Fibre carton	1.07815.9025
	Tin(II) chloride dihydrate for analysis (max. 0.000001% Hg) EMSURE®	10025-69-1	$SnCl_2 * 2 H_2O$	250 g	Glass bottle	1.07814.0250
				2.5 kg	Glass bottle	1.07814.2500
Z	Zinc acetate dihydrate for analysis EMSURE® ACS	5970-45-6	$(CH_3COO)_2Zn * 2 H_2O$	250 g	HDPE bottle	1.08802.0250
				1 kg	HDPE bottle	1.08802.1000
	Zinc chloride for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7646-85-7	$ZnCl_2$	250 g	HDPE bottle	1.08816.0250
				1 kg	HDPE bottle	1.08816.1000
				25 kg	PE drum	1.08816.9025
	Zinc iodide for analysis EMSURE®	10139-47-6	ZnI_2	100 g	Glass bottle	1.08828.0100
	Zinc sulfate heptahydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	7446-20-0	$ZnSO_4 * 7 H_2O$	500 g	HDPE bottle	1.08883.0500
				1 kg	HDPE bottle	1.08883.1000
				5 kg	HDPE bottle	1.08883.5000
				50 kg	Fibre carton	1.08883.9050

▶ **For more details about our packaging, please see "Packaging and Safe Handling" on page 42**

solvents

EMSURE® | EMPARTA® | EMPLURA® Solvents.
Distinguished by exceptional quality and reliability, our solvents undergo strict controls and continuous development to meet growing regulations. As your reliable, one-stop supplier, we offer a complete solution, including solvents, documentation, secure packaging and withdrawal systems.

EMSURE® Solvents — Premium Grade

▶ For more information please have a look at page 22

EMPARTA® Solvents — Standard Grade

▶ For more information please have a look at page 32

EMPLURA® Solvents — Basic Grade

▶ For more information please have a look at page 36

Ordering information
Solvents

Solvents A–B

	Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
A	Acetone for analysis EMSURE® ACS, ISO, Reag. Ph Eur	67-64-1	≥ 99.8%	≤ 0.0005%	≤ 0.05%	1 L	Glass bottle	1.00014.1000
						1 L	HDPE bottle	1.00014.1011
						2.5 L	Glass bottle	1.00014.2500
						2.5 L	HDPE bottle	1.00014.2511
						4 L	Glass bottle	1.00014.4000
						5 L	HDPE bottle	1.00014.5000
						10 L	Stainless steel drum	1.00014.6010
						25 L	Stainless steel drum	1.00014.6025
						190 L	Stainless steel drum	1.00014.6190
						180 L	PE / Metal drum	1.00014.9180
	Acetone for analysis EMPARTA® ACS	67-64-1	≥ 99.5%	≤ 0.001%	≤ 0.5%	2.5 L	HDPE bottle	1.07021.2511
						4 L	Glass bottle	1.07021.4000
	Acetone EMPLURA®	67-64-1	≥ 99.0%	≤ 0.004%	≤ 0.3%	1 L	HDPE bottle	8.22251.1000
						2.5 L	HDPE bottle	8.22251.2500
						5 L	HDPE bottle	8.22251.5011
						25 L	Metal drum	8.22251.9025
	Acetonitrile for analysis EMSURE® ACS, Reag. Ph Eur	75-05-8	≥ 99.5%	≤ 0.001%	≤ 0.1%	1 L	Glass bottle	1.00003.1000
						2.5 L	Glass bottle	1.00003.2500
						4 L	Glass bottle	1.00003.4000
						10 L	Stainless steel drum	1.00003.6010
						25 L	Stainless steel drum	1.00003.6025
	Acetonitrile EMPLURA®	75-05-8	≥ 99.0%	≤ 0.005%	≤ 0.5%	1 L	Glass bottle	1.15500.1000
						2.5 L	Glass bottle	1.15500.2500
						4 L	Glass bottle	1.15500.4000
						25 L	Stainless steel drum	1.15500.6025
						190 L	Metal drum	1.15500.9190
	Acetylacetone for analysis EMSURE®	123-54-6	≥ 99.0%		≤ 0.3%	100 mL	Glass bottle	1.09600.0100
						500 mL	Glass bottle	1.09600.0500
	n-Amyl acetate EMPLURA®	628-63-7	≥ 98.0%			NEW 4 L	Glass bottle	8.18700.4000
	n-Amyl alcohol (Pentan-1-ol) for analysis EMSURE®	71-41-0	≥ 98.5%	≤ 0.005%	≤ 0.1%	1 L	Glass bottle	1.00975.1000
						2.5 L	Glass bottle	1.00975.2500
	Aniline for analysis EMSURE®	62-53-3	≥ 99.5%		≤ 0.1%	1 L	Glass bottle	1.01261.1000
B	Benzyl alcohol for analysis EMSURE®	100-51-6	≥ 99.5%		≤ 0.1%	1 L	Glass bottle	1.09626.1000
						2.5 L	Glass bottle	1.09626.2500
						4 L	Glass bottle	1.09626.4000
						25 L	Stainless steel drum	1.09626.6025
	1-Butanol for analysis EMSURE® ACS, ISO, Reag. Ph Eur	71-36-3	≥ 99.5%	≤ 0.001%	≤ 0.1%	1 L	Glass bottle	1.01990.1000
						2.5 L	Glass bottle	1.01990.2500
						4 L	Glass bottle	1.01990.4000
						25 L	Stainless steel drum	1.01990.6025
	1-Butanol EMPLURA®	71-36-3	≥ 99.0%	≤ 0.004%	≤ 0.2%	2.5 L	HDPE bottle	8.22262.2500

EMSURE® EMPARTA® EMPLURA®

	Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
B	2-Butanol for analysis EMSURE®	78-92-2	≥ 99.0%	≤ 0.001%	≤ 0.2%	1 L	Glass bottle	1.09630.1000
						2.5 L	Glass bottle	1.09630.2500
						25 L	Stainless steel drum	1.09630.6025
	2-Butanol EMPLURA®	78-92-2			≤ 0.2%	2.5 L	HDPE bottle	8.22263.2500
	tert-Butanol for analysis EMSURE® ACS	75-65-0	≥ 99.5%	≤ 0.001%	≤ 0.1%	500 mL	Glass bottle	1.09629.0500
						4 L	Glass bottle	1.09629.4000
						25 L	PE / Metal drum	1.09629.9025
	tert-Butanol EMPLURA®	75-65-0	≥ 99.0%		≤ 0.1%	1 L	Glass bottle	8.22264.1000
						2.5 L	Glass bottle	8.22264.2500
						25 L	PE canister	8.22264.9025
	n-Butyl acetate for analysis EMSURE®	123-86-4	≥ 99.5%	≤ 0.001%	≤ 0.1%	1 L	Glass bottle	1.09652.1000
						2.5 L	Glass bottle	1.09652.2500
						4 L	Glass bottle	1.09652.4000
	n-Butyl acetate EMPLURA®	123-86-4	≥ 99.0%	≤ 0.001%		2.5 L	Glass bottle	1.01974.2500
						25 L	Stainless steel drum	1.01974.6025
						190 l	Metal drum	1.01974.9190
	tert-Butyl methyl ether for analysis EMSURE® ACS	1634-04-4	≥ 99.5%	≤ 0.001%	≤ 0.03%	1 L	Glass bottle	1.01849.1000
						2.5 L	Glass bottle	1.01849.2500
						4 L	Glass bottle	1.01849.4000
						5 L	HDPE bottle	1.01849.5011
						190 L	Stainless steel drum	1.01849.6190
	tert-Butyl methyl ether EMPLURA®	1634-04-4	≥ 99.0%	≤ 0.005%	≤ 0.05%	2.5 L	Glass bottle	1.01843.2500
						10 L	Metal drum	1.01843.9011
						25 L	Stainless steel drum	1.01843.6025
						190 L	Stainless steel drum	1.01843.6190
	1-Butylpyrrolidin-2-one EMPLURA®	3470-98-2	≥ 99.8%		≤ 0.1%	1 L	Glass bottle	1.03818.1000
						2.5 L	Glass bottle	1.03818.2500
					NEW	25 L	Stainless steel drum	1.03818.6025
C	Carbon disulfide for analysis EMSURE® ACS, Reag. Ph Eur	75-15-0	≥ 99.9%	≤ 0.0010%	≤ 0.01%	1 L	Glass bottle	1.02214.1000
	Carbon disulfide EMPLURA®	75-15-0	≥ 99.5%	≤ 0.005%	≤ 0.02%	1 L	Glass bottle	1.02211.1000
	Chloroform for analysis EMSURE® ACS, ISO, Reag. Ph Eur	67-66-3	99.0 - 99.4 %	≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.02445.1000
						2.5 L	Glass bottle	1.02445.2500
						4 L	Glass bottle	1.02445.4000
						10 L	Stainless steel drum	1.02445.6010
						25 L	Stainless steel drum	1.02445.6025
						190 L	Stainless steel drum	1.02445.6190
	Chloroform for analysis EMPARTA® ACS	67-66-3	99.0 - 99.4 %	≤ 0.001%	≤ 0.01%	2.5 L	Glass bottle	1.07024.2500
						4 L	Glass bottle	1.07024.4000
	Chloroform EMPLURA®	67-66-3	≥ 99 %	≤ 0.001%	≤ 0.1%	1 L	Glass bottle	8.22265.1000
						2.5 L	Glass bottle	8.22265.2500
	Chloroform for analysis (for determinations with dithizone)	67-66-3	99.0 - 99.4 %	< 0.001%	< 0.01%	1 L	Glass bottle	1.02442.1000
						2.5 L	Glass bottle	1.02442.2500

Ordering information
Solvents

Solvents C-D

	Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
C	Cyclohexane for analysis EMSURE® ACS, ISO, Reag. Ph Eur	110-82-7	≥ 99.5%	≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.09666.1000
						2.5 L	Glass bottle	1.09666.2500
						2.5 L	HDPE bottle	1.09666.2511
						4 L	Glass bottle	1.09666.4000
						5 L	HDPE bottle	1.09666.5011
						10 L	Stainless steel drum	1.09666.6010
						25 L	Stainless steel drum	1.09666.6025
						190 L	Stainless steel drum	1.09666.6191
	Cyclohexane EMPLURA®	110-82-7	≥ 99.0%		≤ 0.05%	1 L	Glass bottle	1.02832.1000
						2.5 L	Glass bottle	1.02832.2500
						25 L	Stainless steel drum	1.02832.6025
						190 L	Metal drum	1.02832.9190
	Cylclohexane for denaturation	110-82-7	≥ 99.0%			190 L	Metal drum	1.02830.9190
	Cyclohexanone EMPLURA®	108-94-1	≥ 99.0%		≤ 0.2%	1 L	Glass bottle	1.02888.1000
						2.5 L	Glass bottle	1.02888.2500
						10 L	Stainless steel drum	1.02888.6010
						25 L	Stainless steel drum	1.02888.6025
						190 L	Metal drum	1.02888.9191
	Cyclopentyl methyl ether EMPLURA®	5614-37-9	≥ 99.0%		≤ 0.2%	1 L	Glass bottle	1.08293.1000
						2.5 L	Glass bottle	1.08293.2500
						4 L	Glass bottle	1.08293.4000
D	1,2-Dichlorobenzene for extraction analysis EMSURE®	95-50-1	≥ 99.0%		≤ 0.01%	1 L	Glass bottle	1.02930.1000
						2.5 L	Glass bottle	1.02930.2500
	Dichloromethane for analysis EMSURE® ACS, ISO, Reag. Ph Eur	75-09-2	≥ 99.8%	≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.06050.1000
						2.5 L	Glass bottle	1.06050.2500
						4 L	Glass bottle	1.06050.4000
						10 L	Stainless steel drum	1.06050.6010
						25 L	Stainless steel drum	1.06050.6025
	Dichloromethane for analysis EMPARTA® ACS	75-09-2	≥ 99.5%	≤ 0.002%	≤ 0.02%	2.5 L	Glass bottle	1.07020.2500
						4 L	Glass bottle	1.07020.4000
						10 L	Stainless steel drum	1.07020.6010
	Dichloromethane EMPLURA®	75-09-2	≥ 99.0%	≤ 0.002%	≤ 0.1%	1 L	Glass bottle	8.22271.1000
						2.5 L	Glass bottle	8.22271.2500
						25 L	Metal drum	8.22271.9025
	Diethanolamine for analysis EMSURE®	111-42-2	≥ 99.5%		≤ 0.25%	1 L	HDPE bottle	1.16205.1000
	Diethyl ether for analysis EMSURE® ACS, ISO, Reag. Ph Eur	60-29-7	≥ 99.7%	≤ 0.0005%	≤ 0.03%	1 L	Glass bottle	1.00921.1000
						2.5 L	Glass bottle	1.00921.2500
						10 L	Stainless steel drum	1.00921.6010
						25 L	Stainless steel drum	1.00921.6025
						190 L	Stainless steel drum	1.00921.6190

EMSURE® EMPARTA® EMPLURA®

Solvents D

	Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
D	Diethyl ether for analysis EMPARTA® ACS	60-29-7	≥ 99.5%	≤ 0.001%	≤ 0.1%	2.5 L	Glass bottle	1.07026.2500
	Diethyl ether EMPLURA®	60-29-7	≥ 99.0%		≤ 0.2%	1 L	Glass bottle	1.00923.1000
						2.5 L	Glass bottle	1.00923.2500
						25 L	Stainless steel drum	1.00923.6025
	Diethyl ether for analysis, Ethanol stabilized EMPARTA® ACS	60-29-7	≥ 98.0%	≤ 0.001%	≤ 0.5%	4 L	Glass bottle	1.07062.4000
	Diisopropyl ether for analysis EMSURE® ACS, Reag. Ph Eur	108-20-3	≥ 99.0%	≤ 0.005%	≤ 0.05%	1 L	Glass bottle	1.00867.1000
						2.5 L	Glass bottle	1.00867.2500
						4 L	Glass bottle	1.00867.4000
						10 L	Stainless steel drum	1.00867.6010
	N,N-Dimethylformamide for analysis EMSURE® ACS, ISO, Reag. Ph Eur	68-12-2	≥ 99.8%	≤ 0.001%	≤ 0.1%	1 L	Glass bottle	1.03053.1000
						1 L	HDPE bottle	1.03053.1011
						2.5 L	Glass bottle	1.03053.2500
						2.5 L	HDPE bottle	1.03053.2511
						4 L	Glass bottle	1.03053.4000
						25 L	Stainless steel drum	1.03053.6025
	N,N-Dimethylformamide EMPARTA®	68-12-2	≥ 99.5%	≤ 0.001%	≤ 0.1%	1 L	Glass bottle	1.03034.1000
						1 L	HDPE bottle	1.03034.1011
						2.5 L	Glass bottle	1.03034.2500
						2.5 L	HDPE bottle	1.03034.2511
						4 L	Glass bottle	1.03034.4000
						25 L	Stainless steel drum	1.03034.6025
	N,N-Dimethylformamide EMPLURA®	68-12-2	≥ 99.0%		≤ 0.1%	1 L	HDPE bottle	8.22275.1000
						2.5 L	HDPE bottle	8.22275.2500
						25 L	Stainless steel drum	8.22275.6025
	Dimethyl sulfoxide for analysis EMSURE® ACS	67-68-5	≥ 99.9%	≤ 0.001%	≤ 0.1%	1 L	Glass bottle	1.02952.1000
						1 L	HDPE bottle	1.02952.1011
						2.5 L	Glass bottle	1.02952.2500
						2.5 L	HDPE bottle	1.02952.2511
						4 L	Glass bottle	1.02952.4000
						5 L	HDPE bottle	1.02952.5011
						25 L	PE / Metal drum	1.02952.9025
						190 L	Stainless steel drum	1.02952.6190
	Dimethyl sulfoxide EMPLURA®	67-68-5	≥ 99.0%		≤ 0.2%	1 L	Glass bottle	1.16743.1000
						25 L	Stainless steel drum	1.16743.6025
	1,4-Dioxane for analysis EMSURE® ACS, ISO	123-91-1	≥ 99.5%	≤ 0.001%	≤ 0.05%	250 mL	Glass bottle	1.09671.0250
						1 L	Glass bottle	1.09671.1000
						2.5 L	Glass bottle	1.09671.2500
						25 L	Stainless steel drum	1.09671.6025
	1,4-Dioxane EMPLURA®	123-91-1	≥ 99.0%		≤ 0.1%	1 L	Glass bottle	1.03115.1000
						2.5 L	Glass bottle	1.03115.2500
						25 L	Stainless steel drum	1.03115.6025
						190 L	Metal drum	1.03115.9191

Ordering information
Solvents

Solvents E

E

Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
Ethanol 96% EMSURE® Reag. Ph Eur	64-17-5	95.1 - 96.9 %	≤ 25 mg/L		500 mL	Glass bottle	1.59010.0500
					2.5 L	Glass bottle	1.59010.2500
Ethanol absolute for analysis EMSURE® ACS, ISO, Reag. Ph Eur	64-17-5	≥ 99.9%	≤ 0.0005%	≤ 0.1%	1 L	Glass bottle	1.00983.1000
					1 L	HDPE bottle	1.00983.1011
					2.5 L	Glass bottle	1.00983.2500
					2.5 L	HDPE bottle	1.00983.2511
					4 L	Glass bottle	1.00983.4000
					5 L	HDPE bottle	1.00983.5000
					10 L	Stainless steel drum	1.00983.6010
					25 L	Stainless steel drum	1.00983.6025
					25 L	PE / Metal drum	1.00983.9025
					180 L	PE / Metal drum	1.00983.9180
Ethanol absolute for analysis EMPARTA® ACS	64-17-5	≥ 99.5%	≤ 0.001%	≤ 0.2%	2.5 L	HDPE bottle	1.07017.2511
					4 L	Glass bottle	1.07017.4000
					25 L	Metal drum	1.07017.9026
Ethanol absolute EMPLURA®	64-17-5	≥ 99.5%	≤ 0.0025%	≤ 0.2%	1 L	HDPE bottle	8.18760.1000
					2.5 L	HDPE bottle	8.18760.2500
					25 L	Metal drum	8.18760.9025
					180 L	PE / Metal drum	8.18760.9180
Ethanol for analysis completely denatured with 1% Ethyl methyl ketone, 1% Isopropyl alcohol, 1 g/ 100 L Denatonium benzoate EMSURE®		≥ 99.5%	≤ 0.005%	≤ 0.1%	2.5 L	HDPE bottle	1.03771.2500
					5 L	HDPE bottle	1.03771.5011
					180 L	PE / Metal drum	1.03771.9180
Ethanol denatured with about 1% Methyl ethyl ketone for analysis EMSURE®	64-17-5	≥ 99.5%	≤ 0.001%	≤ 0.1%	1 L	HDPE bottle	1.00974.1011
					2.5 L	Glass bottle	1.00974.2500
					2.5 L	HDPE bottle	1.00974.2511
					4 L	Glass bottle	1.00974.4000
					25 L	Stainless steel drum	1.00974.6025
					25 L	PE / Metal drum	1.00974.9025
					180 L	Metal drum	1.00974.9180
Ethanolamine for analysis EMSURE®	141-43-5	≥ 99.5%		≤ 0.2%	1 L	Glass bottle	1.00845.1000
					2.5 L	Glass bottle	1.00845.2500
Ethyl acetate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	141-78-6	≥ 99.5%	≤ 0.001%	≤ 0.05%	1 L	HDPE bottle	1.09623.1000
					2.5 L	Glass bottle	1.09623.2500
					2.5 L	HDPE bottle	1.09623.2511
					4 L	Glass bottle	1.09623.4000
					5 L	HDPE bottle	1.09623.5011
					10 L	Stainless steel drum	1.09623.6010
					25 L	Stainless steel drum	1.09623.6025
					25 L	PE / Metal drum	1.09623.9026
					180 L	PE / Metal drum	1.09623.9181
Ethyl acetate for analysis EMPARTA® ACS	141-78-6	≥ 99.5%	≤ 0.003%	≤ 0.2%	4 L	Glass bottle	1.07048.4000
Ethyl acetate EMPLURA®	141-78-6	≥ 99.5%	≤ 0.003%	≤ 0.1%	2.5 L	HDPE bottle	8.22277.2500
					5 L	HDPE bottle	8.22277.5000

EMSURE® EMPARTA® EMPLURA®

Solvents E–H

	Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
E	Ethylene glycol for analysis EMSURE® Reag. Ph Eur, Reag. USP	107-21-1	≥ 99.5%		≤ 0.1%	1 L	HDPE bottle	1.09621.1000
						2.5 L	HDPE bottle	1.09621.2500
						4 L	Glass bottle	1.09621.4000
						25 L	PE canister	1.09621.9028
	Ethylene glycol EMPLURA®	107-21-1	≥ 99.0%		≤ 0.3%	1 L	HDPE bottle	1.00949.1000
						2.5 L	HDPE bottle	1.00949.2500
						25 L	PE canister	1.00949.9028
	Ethylene glycol monomethyl ether for analysis EMSURE® ACS, Reag. Ph Eur	109-86-4	≥ 99.5%	≤ 0.003%	≤ 0.1%	1 L	Glass bottle	1.00859.1000
						2.5 L	Glass bottle	1.00859.2500
	Ethyl(-)-L-lactate EMPLURA®	687-47-8	≥ 99.0%		≤ 0.2%	1 L	Glass bottle	1.09639.1000
						2.5 L	Glass bottle	1.09639.2500
						4 L	Glass bottle	1.09639.4000
	Ethyl methyl ketone for analysis EMSURE® ACS, Reag. Ph Eur	78-93-3	≥ 99.5%	≤ 0.001%	≤ 0.05%	1 L	Glass bottle	1.09708.1000
						2.5 L	Glass bottle	1.09708.2500
						4 L	Glass bottle	1.09708.4000
						25 L	Stainless steel drum	1.09708.6025
						190 L	Stainless steel drum	1.09708.6190
	Ethyl methyl ketone for analysis EMPARTA® ACS	78-93-3	≥ 99.0%		≤ 0.2%	2.5 L	Glass bottle	1.07049.2500
	Ethyl methyl ketone (2-Butanone) EMPLURA®	78-93-3	≥ 99.0%		≤ 0.1%	1 L	Glass bottle	1.06014.1000
						2.5 L	Glass bottle	1.06014.2500
						10 L	Metal drum	1.06014.9011
						25 L	Stainless steel drum	1.06014.6025
						190 L	Metal drum	1.06014.9190
F	Formamide for analysis EMSURE®	75-12-7	≥ 99.5%		≤ 0.1%	1 L	HDPE bottle	1.09684.1000
						2.5 L	HDPE bottle	1.09684.2500
	Formamide EMPLURA®	75-12-7	≥ 99.0%		≤ 0.3%	1 L	HDPE bottle	1.04008.1000
						2.5 L	HDPE bottle	1.04008.2500
G	Glycerol (plant-origin) for analysis EMSURE® ACS, Reag. Ph Eur	56-81-5	≥ 99.5%		≤ 0.5%	2.5 L	HDPE bottle	1.04057.2511
						10 L	PE canister	1.04057.9011
						25 L	PE canister	1.04057.9026
H	n-Heptane about 85% EMPLURA®	142-82-5	≥ 85.0%	≤ 0.005%		1 L	Glass bottle	1.04307.1000
						2.5 L	Glass bottle	1.04307.2500
						4 L	Glass bottle	1.04307.4000

Ordering information
Solvents

Solvents H–I

	Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
H	n-Heptane for analysis EMSURE® Reag. Ph Eur	142-82-5	≥ 99.0%	≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.04379.1000
						2.5 L	Glass bottle	1.04379.2500
						2.5 L	HDPE bottle	1.04379.2511
						4 L	Glass bottle	1.04379.4000
						10 L	Stainless steel drum	1.04379.6010
						25 L	Stainless steel drum	1.04379.6025
						190 L	Stainless steel drum	1.04379.6190
	n-Heptane EMPLURA®	142-82-5	≥ 99.0%	≤ 0.005%		1 L	Glass bottle	1.04365.1000
						2.5 L	Glass bottle	1.04365.2500
						2.5 L	HDPE bottle	1.04365.2511
						10 L	Metal drum	1.04365.9011
						25 L	Stainless steel drum	1.04365.6025
						190 L	Stainless steel drum	1.04365.6190
	Hexanes for analysis EMPARTA® ACS	110-54-3	≥ 98.5%	≤ 0.01%		1 L	Glass bottle	1.07060.1000
						4 L	Glass bottle	1.07060.4000
	n-Hexane for analysis EMSURE® ACS	110-54-3	≥ 99.0%	≤ 0.001%	≤ 0.005%	1 L	Glass bottle	1.04367.1000
						2.5 L	Glass bottle	1.04367.2500
						2.5 L	HDPE bottle	1.04367.2511
						25 L	Stainless steel drum	1.04367.6025
						190 L	Stainless steel drum	1.04367.6190
	n-Hexane for analysis EMSURE® ACS, Reag. Ph Eur	110-54-3	≥ 96.0%	≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.04374.1000
						2.5 L	Glass bottle	1.04374.2500
						2.5 L	HDPE bottle	1.04374.2511
						4 L	Glass bottle	1.04374.4000
						25 L	Stainless steel drum	1.04374.6025
						190 L	Stainless steel drum	1.04374.6190
	n-Hexane for analysis EMPARTA® ACS	110-54-3	≥ 98.5%	≤ 0.001%	≤ 0.02%	2.5 L	HDPE bottle	1.07023.2511
						4 L	Glass bottle	1.07023.4000
						25 L	Stainless steel drum	1.07023.6025
	n-Hexane EMPLURA®	110-54-3	≥ 95.0%		≤ 0.02%	1 L	Glass bottle	1.04368.1000
						2.5 L	Glass bottle	1.04368.2500
						2.5 L	HDPE bottle	1.04368.2511
						10 L	Metal drum	1.04368.9011
						25 L	Stainless steel drum	1.04368.6025
						190 L	Stainless steel drum	1.04368.6190
						190 L	Metal drum	1.04368.9190
I	Isoamyl acetate EMPLURA®	123-92-2	≥ 99.0%		≤ 0.1%	1 L	Glass bottle	1.01231.1000
	Isoamyl alcohol for analysis EMSURE® ACS, Reag. Ph Eur	123-51-3	≥ 99.0%	≤ 0.002%	≤ 0.2%	1 L	Glass bottle	1.00979.1000
						2.5 L	Glass bottle	1.00979.2500
						4 L	Glass bottle	1.00979.4000
						25 L	Stainless steel drum	1.00979.6025
	Isoamyl alcohol EMPLURA®	30899-19-5	≥ 99.0%		≤ 0.3%	1 L	HDPE bottle	8.22255.1000
						2.5 L	HDPE bottle	8.22255.2500

EMSURE® EMPARTA® EMPLURA®

Solvents I–M

	Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
I	Isobutanol for analysis EMSURE® ACS, Reag. Ph Eur	78-83-1	≥ 99.0%	≤ 0.001%	≤ 0.05%	1 L	Glass bottle	1.00984.1000
						2.5 L	Glass bottle	1.00984.2500
	Isobutanol (Isobutyl alcohol) EMPLURA®	78-83-1	≥ 98.5%		≤ 0.05%	2.5 L	Glass bottle	1.00985.2500
						25 L	Stainless steel drum	1.00985.6025
						190 L	Metal drum	1.00985.9190
	Isobutyl methyl ketone for extraction analysis EMSURE® ACS, Reag. Ph Eur	108-10-1	≥ 99.0%	≤ 0.001%	≤ 0.1%	1 L	Glass bottle	1.06146.1000
						2.5 L	Glass bottle	1.06146.2500
						4 L	Glass bottle	1.06146.4000
						25 L	Stainless steel drum	1.06146.6025
	Isobutyl methyl ketone EMPLURA®	108-10-1	≥ 99.0%			2.5 L	Glass bottle	8.20820.2500
						10 L	Stainless steel drum	8.20820.6010
						25 L	Stainless steel drum	8.20820.6025
	Isohexane for analysis EMSURE®	92112-69-1	≥ 95.0%	≤ 10 mg/L	≤ 0.01%	1 L	Glass bottle	1.04333.1000
						2.5 L	Glass bottle	1.04333.2500
						190 L	Stainless steel drum	1.04333.6190
	Isooctane for analysis EMSURE® ACS, Reag. Ph Eur	540-84-1	≥ 99.5%	≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.04727.1000
						2.5 L	Glass bottle	1.04727.2500
						4 L	Glass bottle	1.04727.4000
						10 L	Stainless steel drum	1.04727.6010
						25 L	Stainless steel drum	1.04727.6025
						190 L	Stainless steel drum	1.04727.6190
K	Kerosene EMPLURA®	64742-48-9				4 L	Glass bottle	1.09774.4000
M	Methanol for analysis EMSURE® ACS, ISO, Reag. Ph Eur	67-56-1	≥ 99.9%	≤ 0.0005%	≤ 0.05%	1 L	Glass bottle	1.06009.1000
						1 L	HDPE bottle	1.06009.1011
						2.5 L	Glass bottle	1.06009.2500
						2.5 L	HDPE bottle	1.06009.2511
						4 L	Glass bottle	1.06009.4000
						5 L	HDPE bottle	1.06009.5000
						10 L	Stainless steel drum	1.06009.6010
						25 L	Stainless steel drum	1.06009.6025
						25 L	PE / Metal drum	1.06009.9025
						180 L	PE / Metal drum	1.06009.9180
	Methanol for analysis EMPARTA® ACS	67-56-1	≥ 99.8%	≤ 0.001%	≤ 0.1%	2.5 L	HDPE bottle	1.07018.2511
						4 L	Glass bottle	1.07018.4000
						25 L	Metal drum	1.07018.9026
	Methanol EMPLURA®	67-56-1	≥ 99.5%	≤ 0.001%	≤ 0.1%	1 L	HDPE bottle	8.22283.1000
						2.5 L	HDPE bottle	8.22283.2500
						5 L	HDPE bottle	8.22283.5000
						10 L	Metal drum	8.22283.9011
						25 L	Metal drum	8.22283.9025
						180 L	PE / Metal drum	8.22283.9180

Ordering information
Solvents

Solvents M-P

	Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
M	Methanol anhydrous for analysis (max. 0.003% H_2O)	67-56-1	≥ 99.9%	≤ 10 mg/L	≤ 0.003%	1 L	Glass bottle	1.06012.1000
						2.5 L	Glass bottle	1.06012.2500
						25 L	Stainless steel drum	1.06012.6025
	Methyl benzoate EMPLURA®	93-58-3	≥ 99.0%		≤ 0.1%	1 L	Glass bottle	1.06059.1000
	1-Methoxy-2-propanol EMPLURA®	107-98-2	≥ 99.5%		≤ 0.1%	1 L	Glass bottle	1.16738.1000
						25 L	Stainless steel drum	1.16738.6025
						190 L	Metal drum	1.16738.9190
	1-Methyl-2-pyrrolidone EMPLURA®	872-50-4	≥ 99.5%		≤ 0.1%	1 L	HDPE bottle	8.06072.1000
						2.5 L	HDPE bottle	8.06072.2500
						10 L	Metal drum	8.06072.9011
						25 L	PE canister	8.06072.9025
	2-Methyltetrahydrofuran EMPLURA®	96-47-9	≥ 99.0%		≤ 0.1%	1 L	Glass bottle	1.08292.1000
						2.5 L	Glass bottle	1.08292.2500
						4 L	Glass bottle	1.08292.4000
O	1-Octanol EMPLURA®	111-87-5	≥ 99.0%		≤ 0.1%	1 L	Glass bottle	1.00991.1000
						25 L	Stainless steel drum	1.00991.6025
P	n-Pentane about 95% EMPLURA®	109-66-0	≥ 95.0%	≤ 0.005%		1 L	Glass bottle	1.07176.1000
						2.5 L	Glass bottle	1.07176.2500
						190 L	Metal drum	1.07176.9190
	n-Pentane for analysis EMSURE®	109-66-0	≥ 99.0%	≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.07177.1000
						2.5 L	Glass bottle	1.07177.2500
						4 L	Glass bottle	1.07177.4000
	n-Pentane EMPLURA®	109-66-0	≥ 99.0%			1 L	Glass bottle	8.20957.1000
						2.5 L	Glass bottle	8.20957.2500
						25 L	Metal drum	8.20957.9025
	Petroleum for analysis EMSURE®	64742-48-9			≤ 0.01%	1 L	Glass bottle	1.09718.1000
						2.5 L	Glass bottle	1.09718.2500
						25 L	Stainless steel drum	1.09718.6025
						190 L	Stainless steel drum	1.09718.6190
	Petroleum benzine boiling range 30–50°C for analysis EMSURE®	64742-49-0		≤ 0.003%	≤ 0.01%	1 L	Glass bottle	1.01786.1000
						2.5 L	Glass bottle	1.01786.2500
	Petroleum benzine boiling range to about 40°C EMPLURA®	64742-49-0		≤ 0.002%	≤ 0.01%	1 L	Glass bottle	1.00915.1000
						2.5 L	Glass bottle	1.00915.2500
						25 L	Stainless steel drum	1.00915.6025
	Petroleum benzine for analysis boiling range 40–60°C EMSURE® ACS, ISO	64742-49-0		≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.01775.1000
						2.5 L	Glass bottle	1.01775.2500
						4 L	Glass bottle	1.01775.4000
						10 L	Stainless steel drum	1.01775.6010
						25 L	Stainless steel drum	1.01775.6025
						190 L	Stainless steel drum	1.01775.6190

Solvents P

Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
Petroleum benzine boiling range 40–80°C EMPLURA®			≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.01773.1000
					25 L	Stainless steel drum	1.01773.6025
Petroleum benzine boiling range 50–70°C EMPLURA®	64742-49-0		≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.00910.1000
					25 L	Stainless steel drum	1.00910.6025
Petroleum benzine boiling range 60–80°C for analysis EMSURE®			≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.01774.1000
					2.5 L	Glass bottle	1.01774.2500
					4 L	Glass bottle	1.01774.4000
					25 L	Stainless steel drum	1.01774.6025
Petroleum benzine boiling range 80–100°C for analysis EMSURE®	64742-49-0		≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.01777.1000
Petroleum benzine boiling range 100–120°C for analysis EMSURE® Reag. Ph Eur	64742-49-0		≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.01781.1000
Petroleum benzine boiling range 100–140°C (Naphta Benzine) EMPLURA®	64742-49-0		≤ 0.005%	≤ 0.01%	1 L	Glass bottle	1.01770.1000
					2.5 L	Glass bottle	1.01770.2500
					25 L	Stainless steel drum	1.01770.6025
Petroleum ether for denaturation					1 L	Glass bottle	1.01769.1000
					2.5 L	Glass bottle	1.01769.2500
					10 L	Stainless steel drum	1.01769.6010
					25 L	Stainless steel drum	1.01769.6025
					190 L	Metal drum	1.01769.9190
Piperidine for analysis EMSURE®	110-89-4	≥ 99.0%	≤ 0.1%	≤ 0.3%	500 mL	Glass bottle	1.09724.0500
1,2-Propanediol EMPLURA®	57-55-6	≥ 99.0%		≤ 0.2%	1 L	HDPE bottle	8.22324.1000
					5 L	HDPE bottle	8.22324.5000
1-Propanol for analysis EMSURE® ACS, Reag. Ph Eur	71-23-8	≥ 99.5%	≤ 0.001%	≤ 0.05%	1 L	Glass bottle	1.00997.1000
					2.5 L	Glass bottle	1.00997.2500
					4 L	Glass bottle	1.00997.4000
					25 L	Stainless steel drum	1.00997.6025
1-Propanol EMPLURA®	71-23-8	≥ 99.0%		≤ 0.2%	1 L	Glass bottle	1.00996.1000
					2.5 L	Glass bottle	1.00996.2500
					25 L	Stainless steel drum	1.00996.6025
2-Propanol for analysis EMSURE® ACS, ISO, Reag. Ph Eur	67-63-0	≥ 99.8%	≤ 0.001%	≤ 0.05%	1 L	Glass bottle	1.09634.1000
					1 L	HDPE bottle	1.09634.1011
					2.5 L	Glass bottle	1.09634.2500
					2.5 L	HDPE bottle	1.09634.2511
					4 L	Glass bottle	1.09634.4000
					5 L	HDPE bottle	1.09634.5000
					10 L	Stainless steel drum	1.09634.6010
					25 L	Stainless steel drum	1.09634.6025
					190 L	Stainless steel drum	1.09634.6190
					180 L	PE / Metal drum	1.09634.9180

Ordering information
Solvents

Solvents P-T

	Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
P	2-Propanol for analysis EMPARTA® ACS	67-63-0	≥ 99.5%	≤ 0.001%	≤ 0.2%	2.5 L	HDPE bottle	1.07022.2511
						4 L	Glass bottle	1.07022.4000
						25 L	Metal drum	1.07022.9026
	2-Propanol EMPLURA®	67-63-0	≥ 99.5%	≤ 0.002%	≤ 0.2%	1 L	HDPE bottle	8.18766.1000
						2.5 L	HDPE bottle	8.18766.2500
						10 L	Metal drum	8.18766.9011
						25 L	Metal drum	8.18766.9025
	Pyridine for analysis EMSURE® ACS, Reag. Ph Eur	110-86-1	≥ 99.5%	≤ 0.002%	≤ 0.1%	100 mL	Glass bottle	1.09728.0100
						500 mL	Glass bottle	1.09728.0500
						1 L	Glass bottle	1.09728.1000
						2.5 L	Glass bottle	1.09728.2500
						4 L	Glass bottle	1.09728.4000
						25 L	Stainless steel drum	1.09728.6025
						190 L	Stainless steel drum	1.09728.6190
	Pyridine for analysis EMPARTA® ACS	110-86-1	≥ 99.0%	≤ 0.002%	≤ 0.1%	0.5 L	Glass bottle	1.94601.0500
						2.5 L	Glass bottle	1.94601.2500
						4 L	Glass bottle	1.94601.4000
	Pyridine EMPLURA®	110-86-1	≥ 99.0%	≤ 0.01%	≤ 0.1%	1 L	Glass bottle	1.07462.1000
						2.5 L	Glass bottle	1.07462.2500
						25 L	Stainless steel drum	1.07462.6026
						190 L	Metal drum	1.07462.9190
T	Tetrachloroethylene EMPLURA®	127-18-4	≥ 99.0%	≤ 0.001%	≤ 0.005%	1 L	Glass bottle	1.00964.1000
						2.5 L	Glass bottle	1.00964.2500
						25 L	Stainless steel drum	1.00964.6025
						190 L	Metal drum	1.00964.9190
	Tetrahydrofuran for analysis EMSURE® ACS, Reag. Ph Eur	109-99-9	≥ 99.8%	≤ 0.0005%	≤ 0.03%	1 L	Glass bottle	1.09731.1000
						2.5 L	Glass bottle	1.09731.2500
						4 L	Glass bottle	1.09731.4000
						10 L	Stainless steel drum	1.09731.6010
						25 L	Stainless steel drum	1.09731.6025
						190 L	Stainless steel drum	1.09731.6190
	Tetrahydrofuran for analysis EMPARTA® ACS	109-99-9	≥ 99.5%	≤ 0.03%	≤ 0.05%	2.5 L	Glass bottle	1.07025.2500
						4 L	Glass bottle	1.07025.4000
	Tetrahydrofuran EMPLURA®	109-99-9	≥ 99.0%		≤ 0.1%	1 L	Glass bottle	1.08114.1000
						2.5 L	Glass bottle	1.08114.2500
						25 L	Stainless steel drum	1.08114.6025
						190 L	Stainless steel drum	1.08114.6190
						190 L	Metal drum	1.08114.9190

EMSURE® EMPARTA® EMPLURA®

Solvents T-Z

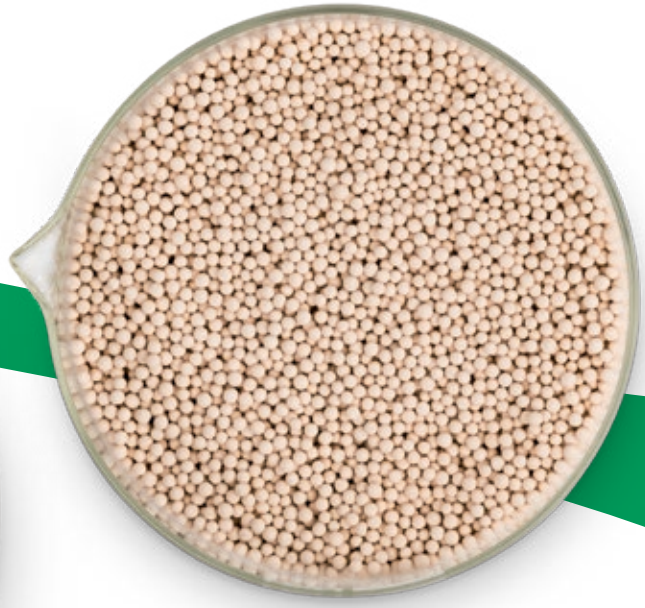
	Product	CAS No.	Purity (GC)	Evap. residue	Water	Content	Packaging	Ord. No.
T	Toluene for analysis EMSURE® ACS, ISO, Reag. Ph Eur	108-88-3	≥ 99.9%	≤ 0.0005%	≤ 0.03%	1 L	Glass bottle	1.08325.1000
						2.5 L	Glass bottle	1.08325.2500
						2.5 L	HDPE bottle	1.08325.2511
						4 L	Glass bottle	1.08325.4000
						5 L	HDPE bottle	1.08325.5011
						10 L	Stainless steel drum	1.08325.6010
						25 L	Stainless steel drum	1.08325.6025
						190 L	Stainless steel drum	1.08325.6190
	Toluene for analysis EMPARTA® ACS	108-88-3	≥ 99.5%	≤ 0.001%	≤ 0.03%	2.5 L	Glass bottle	1.07019.2500
						2.5 L	HDPE bottle	1.07019.2511
						4 L	Glass bottle	1.07019.4000
	Toluene EMPLURA®	108-88-3	≥ 99.0%			1 L	Glass bottle	1.08323.1000
						2.5 L	Glass bottle	1.08323.2500
						10 L	Metal drum	1.08323.9011
						25 L	Stainless steel drum	1.08323.6025
						190 L	Metal drum	1.08323.9190
	Triethanolamine EMPLURA®	102-71-6			≤ 0.3%	5 L	PE canister	8.22341.5000
						25 L	PE canister	8.22341.9026
W	Water for analysis EMSURE®	7732-18-5	≥ 99.0%	≤ 1 mg/L	≤ 0.01%	4 L	Titripac	1.16754.4000
						5 L	HDPE bottle	1.16754.5000
						10 L	Titripac	1.16754.9010
X	p-Xylene for analysis EMSURE® ISO	106-42-3	≥ 99.0%	≤ 0.001%	≤ 0.01%	1 L	Glass bottle	1.08684.1000
						2.5 L	Glass bottle	1.08684.2500
						25 L	Stainless steel drum	1.08684.6025
	Xylene (isomeric mixture) for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1330-20-7	≥ 98.5%	≤ 0.002%	≤ 0.03%	2.5 L	Glass bottle	1.08297.2500
						4 L	Glass bottle	1.08297.4000
	Xylenes (isomeric mixture) for analysis EMPARTA® ACS	1330-20-7	≥ 98.5%	≤ 0.002%	≤ 0.05%	2.5 L	Glass bottle	1.08633.2500
						4 L	Glass bottle	1.08633.4000
	Xylenes (isomeric mixture) EMPLURA®	1330-20-7		≤ 0.002%	≤ 0.05%	2.5 L	Glass bottle	1.08634.2500

▶ **For more details about our packaging, please see "Packaging and Safe Handling" on page 42**

Essentials for daily lab routines

Safety, simplicity and sustainability

We offer a comprehensive range of general application chemicals, which are designed to maximize safety and simplicity in daily lab work. Wherever possible, we use natural products to ensure that we both work more sustainably and achieve our environmental targets.



▶ For more information about drying agents see page 130

▶ For more information about absorbents for spilled liquids see page 128

▶ For more information about cleaning applications see page 122

▶ For more information about absorption and filtration see page 134

Cleaning Applications

Extran® detergents for reliable, residue-free cleaning

Thorough, residue-free cleaning is essential for reliable processes. This applies to both: laboratories and production facilities. Everything that comes into contact with chemicals or biological substances must be free of impurities, both before and after use.

Put your trust in many years of Extran® experience from MilliporeSigma and use our detergents for **manual cleaning** (MA) or **machine cleaning** in laboratory washing machines (AP).

Your advantages

Extran® is a reliable cleaning agent of consistent composition that ensures proper scientific working procedures and avoids a frequently modification of processes and applications.

- **Reliable results** by long-term detergent experience, constant product quality and composition, outstanding solubility and flowability
- **Environmental protection** by bio-degradable active ingredients
- **Reliable residue-free cleaning with validation support** to prove the absence of nonionic surfactants by means of a photometric test
- **Health protection** no known allergy risk or smell nuisance because Extran® is free of scent, dyestuff, oxidants, chlorine, enzymes and NTA. Extran® replaces toxic cleaning agents
- **Save time and money** with highly concentrated Extran® detergents and technical application support
- **High flexibility and safety** by a broad range of different pack sizes – from 1 L to 25 L, from 2 kg to 25 kg – and specially developed withdrawal products and adapters

Learn more: The following pages present a selection of Extran® cleaning agents. For further products and information, please visit **SigmaAldrich.com/cleaning**

Properties							Applications cleaning effectiveness (x - good, xx - very good, xxx - outstanding)							
liquid	powder	acidic	neutral	mildly alkaline	alkaline	special properties	Food residues	Fat / wax / silicones	Organic residues	Inorganic residues	Colors/ lacquer/ pigments	Blood / cells / proteins	**Extran® type**	**Cat. number***
Manual cleaning														
x					x		xx		xx	xx	xx	xx	MA 01	107555
x			x					xx	x	xx	x		MA 02	107553
x					x	phosphate-free	x	xx	x	x	xx	x	MA 05	140000
Aparative cleaning (dishwasher)														
	x			x			x	xx	x	xx	x	x	AP 11	107558
	x				x		xx	x	xx	xx	xxx	xx	AP 12	107563
x					x	phosphate-free	xx	xx		xx	xx	xx	AP 17	140006
x				x		phosphate-free	x			xx	x	x	AP 18	140118
x		x				with phosphoric acid	x	x	xx	x			AP 21	107559
x		x				with citric acid, phosphate-free	x	x	xx	x			AP 22	107561
	x					enzymatic	xx	xx	x	x			AP 41	107570

***please see following pages for available pack sizes**

Cleaning Applications
Extran® detergents for manual washing

Manual washing – Application

The Extran® MA types for manual washing are universally applicable concentrates for the production of water baths which work reliably and without residue.

- Water is used to prepare the cleaning solution. If slight sedimentation of the hardener occurs, more Extran® must be added. De-mineralized water boosts the cleaning effect.
- For cleaning, the items to be cleaned are simply immersed completely in the solution.
- Once cleaning is finished, they are rinsed first with tap water and then with demineralised water.
- The baths can be used for a longer time without a noticeable decrease in the cleaning effect.
- If necessary, the rinsing liquid can be supplemented with fresh Extran®.
- The length of application is less than 2 hours.
- For “difficult cases” such as plaster, blood or heavy oil, the items to be cleaned are simply left in the bath a little longer.
- Heat speeds up the cleaning process.
- Extran® is also ideally suited to ultrasound cleaning.

Extran® MA 01 liquid, alkaline	Content	Packaging	Ord. No.
Extran® MA 01 alkaline	1 L	HDPE bottle	1.07555.1000
	2.5 L	HDPE bottle	1.07555.2500
	5 L	HDPE bottle	1.07555.5000
	10 L	PE canister	1.07555.9010
	25 L	PE canister	1.07555.9025

Extran® MA 02 liquid, neutral	Content	Packaging	Ord. No.
Extran® MA 02 neutral	1 L	HDPE bottle	1.07553.1000
	2.5 L	HDPE bottle	1.07553.2500
	5 L	HDPE bottle	1.07553.5000
	10 L	PE canister	1.07553.9010
	25 L	PE canister	1.07553.9025

Extran® MA 05 liquid, alkaline, phosphate-free	Content	Packaging	Ord. No.
Extran® MA 05 alkaline, phosphate-free concentrate	1 L	HDPE bottle	1.40000.1000
	2.5 L	HDPE bottle	1.40000.2500
	5 L	HDPE bottle	1.40000.5000
	10 L	PE canister	1.40000.9010
	25 L	PE canister	1.40000.9025

Accessories	Ord. No.
Bottle opening key for S40 and S28 screw caps	1.08801.0001

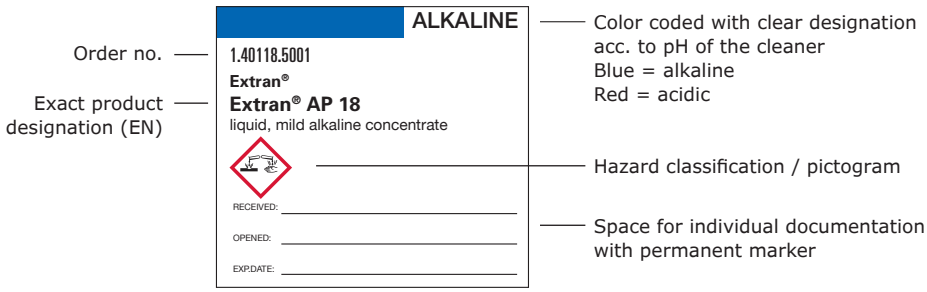
Cleaning Applications
Extran® detergents for automated cleaning

Automated cleaning

Extran® AP automated cleaning detergents were created and tested in cooperation with leading appliance manufacturers especially for use in laboratory washing machines. The products ensure effective cleaning, while significantly limiting foam formation and minimizing residues. The good solubility in water of all components minimizes residues on appliances which have been cleaned.

Type	Designation	Content	Packaging	Ord. No.
AP 11	powder, mildly alkaline	2 kg	HDPE bottle	1.07558.2000
		10 kg	PE drum	1.07558.9010
		25 kg	PE drum	1.07558.9025
AP 12	powder, alkaline	2 kg	HDPE bottle	1.07563.2000
		10 kg	PE drum	1.07563.9010
		25 kg	PE canister	1.07563.9025
AP 17	liquid, alkaline concentrate	2.5 L	HDPE bottle	1.40006.2500
		5 L	HDPE bottle	1.40006.5000
		5 L	PE canister	1.40006.5001
		10 L	PE canister	1.40006.9010
		25 L	PE canister	1.40006.9025
AP 18	liquid, mild alkaline concentrate	2.5 L	HDPE bottle	1.40118.2500
		5 L	HDPE bottle	1.40118.5000
		5 L	PE canister	1.40118.5001
		10 L	PE canister	1.40118.9010
		25 L	PE canister	1.40118.9025
AP 21	liquid, acidic, concentrate (contains phosphoric acid)	2.5 L	HDPE bottle	1.07559.2500
		5 L	PE canister	1.07559.5001
		10 L	PE canister	1.07559.9010
		25 L	PE canister	1.07559.9025
AP 22	liquid, acidic concentrate (contains citric acid)	2.5 L	HDPE bottle	1.07561.2500
		5 L	PE canister	1.07561.5001
		10 L	PE canister	1.07561.9010
		25 L	PE canister	1.07561.9025
AP 41	powder, enzymatic	2 kg	HDPE bottle	1.07570.2000
		25 kg	PE drum	1.07570.9025

Top label with contents & essential safety information



Your benefits

Safe

- no detergent contact from filling
- TOP LABEL with always visible product and safety information, additional blank space for individual documentation

Convenient

- direct connection
- no refill
- lightweight

Economical

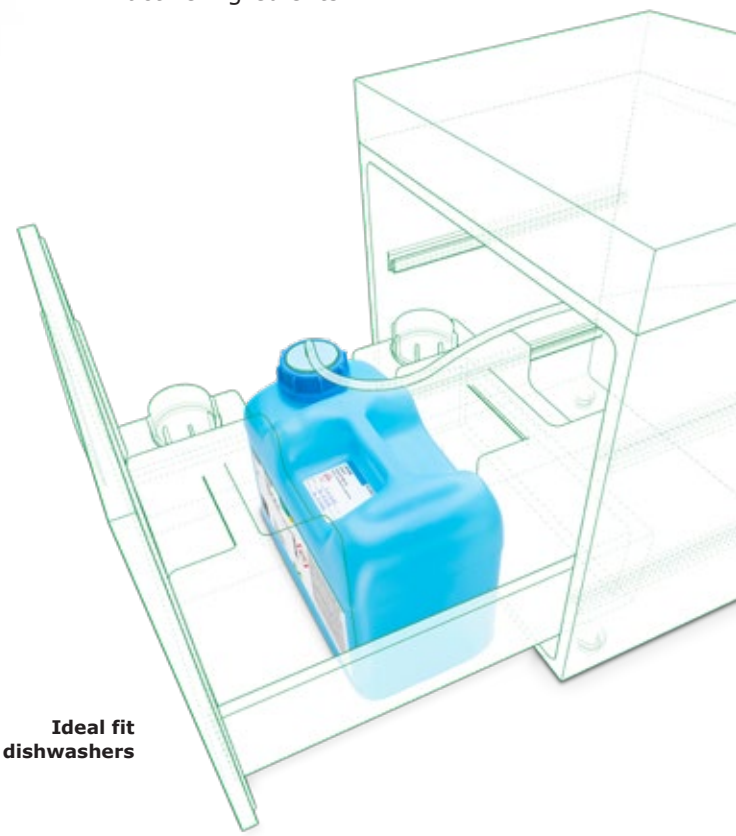
- process automation
- reduces dishwasher repairs

Ecological

- non-toxic, biodegradable active ingredients

Extran® AP liquids in 5 L canisters

Careful cleaning is essential in every lab. But it can pose risks and challenges, like accidental contact with harmful cleaner concentrates, frequent refilling of cleaning agents, or costly dishwasher repairs. That's why we now also offer our powerful, non-toxic, residue-free and biodegradable Extran® cleaners in 5 L canisters – making them the ideal fit for lab dishwashers. Discover quality perfected for your intended use.



Ideal fit for lab dishwashers

Chemizorb® absorbents

The fast, safe and easy way to clear up chemical spills

Accidents happen in every lab at any time. With Chemizorb® absorbents, you can clear away aggressive or unpleasant spilled liquids quickly and safely. Our fast-acting absorbents consist of porous mineral or synthetic copolymers that are chemically inert, and capable of absorbing up to 400% of their own weight.

Your benefits:

- Easy dosing due to the wide bottle neck
- Clear process monitoring
- Bright red bottle stands out among other HDPE bottles

Learn more
For further products and information and the current brochure "Soak it up", please visit **SigmaAldrich.com/spillage-absorption**

The »all-rounders« - quick help for multiple spillages

Chemizorb® powder and granule absorbents are insoluble in water and in all other media that are liquid at room temperature. These “all-rounders” are suitable for removing nearly all kinds of aqueous spills, such as acids, alkalis and solvents.

Chemizorb® powder	Content	Packaging	Ord. No.
Chemizorb® powder absorbent for spilled liquids	500 g	HDPE bottle	1.02051.0500
	25 kg	Fibre carton	1.02051.9025

Chemizorb® granules	Content	Packaging	Ord. No.
Chemizorb® granules absorbent for spilled liquids	1 kg	HDPE bottle	1.01568.1000
	5 kg	Bucket, plastic	1.01568.5000
	20 kg	PE drum	1.01568.9021

The »specialists« - make use of our experience

We offer specific absorbents for alkalis, acids, and hydrofluoric acid. Each contains special carrier materials and water-soluble neutralizers, as well as pH indicators that help you visually monitor the neutralization of the spilled chemicals. Please note that the reaction may generate heat and gas.

Chemizorb® OH^-	Content	Packaging	Ord. No.
Chemizorb® OH^- absorbent and neutralizer for spilled alkalis, with indicator	1 kg	HDPE bottle	1.01596.1000

Chemizorb® H^+	Content	Packaging	Ord. No.
Chemizorb® H^+ absorbent and neutralizer for spilled acids, with indicator	2 kg	HDPE bottle	1.03874.2000
	5 kg	Bucket, plastic	1.03847.5000

Chemizorb® HF	Content	Packaging	Ord. No.
Chemizorb® HF absorbent and neutralizer for spilled hydrofluoric acid, with indicator	1 kg	HDPE bottle	1.01591.1000

The »all-in-one« set for mercury

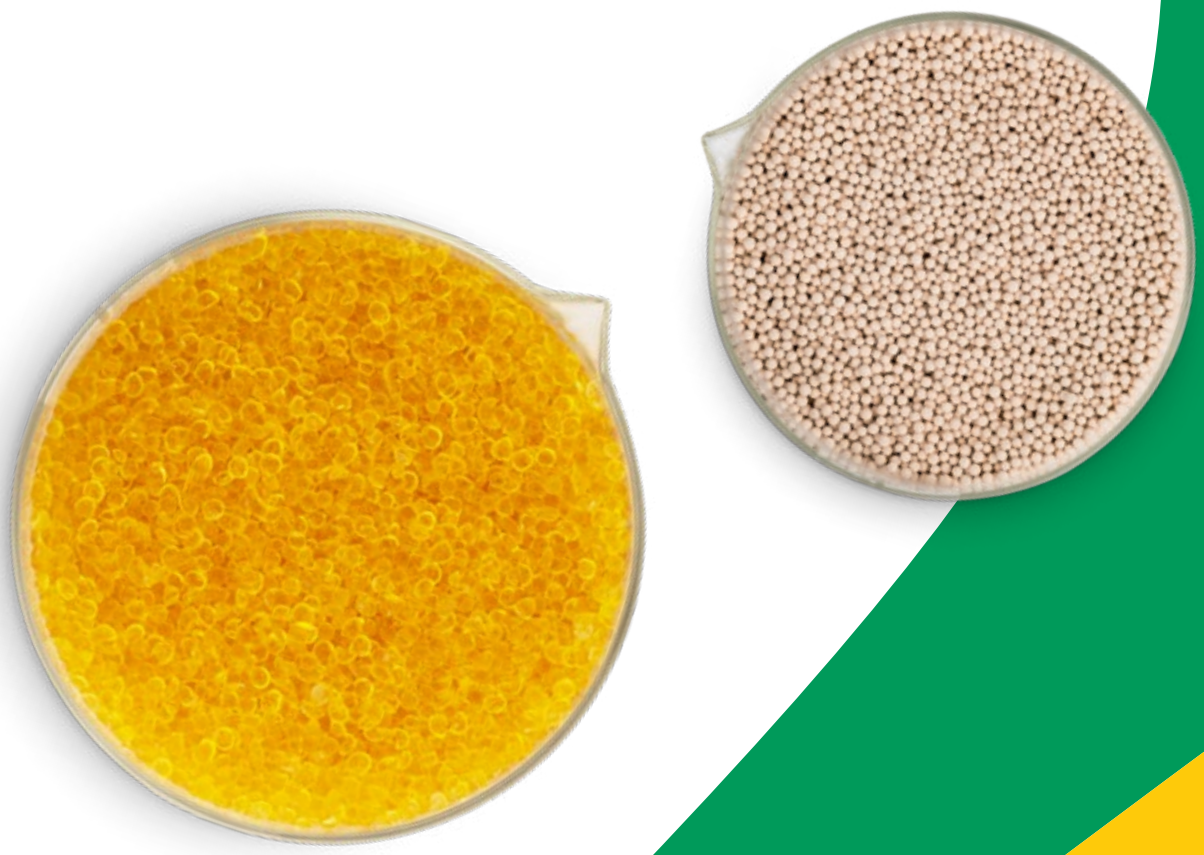
Chemizorb® Hg kit Mercury is an all-inclusive set of reagents and auxiliaries for safe and complete removal of mercury drops and traces of elementary mercury. The reagents in the set are sufficient for decontaminating an area of roughly one square meter.

Chemizorb® Hg	Content	Packaging	Ord. No.
Chemizorb® Hg Reagents and accessories for absorbent for mercury	1 set	PE case	1.12576.0001
1 set consisting of: 500 g of reagent 1, 100 mL of reagent 2, one small tub, one large disposal can, protective gloves …			
Chemizorb® Hg reagents refill pack for Cat. No. 1.12576.0001	1 set	PE can	1.01569.0001
1 set consisting of: 500 g reagent 1 and 100 mL reagent 2			

Drying Agents

Optimize desiccation with absolute reliability

Our Drying agents (desiccants) are developed, produced and rigorously tested to ensure optimal drying processes, whether in the laboratory, during storage, or for transportation. Our comprehensive portfolio offers user-friendly solutions for a wide range of applications – from drying gases, liquids or solids using static or dynamic drying processes, to protecting sensitive goods and materials from moisture, mold or corrosion. Regardless of your application, you can always expect reliable, reproducible results. Because, at MilliporeSigma, **consistency is our standard.**



Safety information: Dangers of silica gel with blue indicator According to the European Chemicals Agency (ECHA), cobalt dichloride ($CoCl_2$) is a substance of very high concern (SVHC), which is classified as carcinogenic and toxic for reproduction*. This hazardous inorganic compound is present in silica gel containing blue indicator. When working with the desiccant, any dust particles emitted may be easily inhaled, posing serious health hazards. To protect users from these risks, we offer a broad range of non-toxic silica gels, which are based on iron-salt instead of cobalt dichloride indicator. Explore our safe and reliable silica gels.

*Source: ECHA "Candidate List of Substances of Very High Concern for Authorization"

Your benefits

- Safety: We strictly avoid the use of carcinogenic blue gel to **protect your health.**
- Economical: Optimal protection of goods, equipment or substances avoids replacement costs; **recoverable drying agents** can be used longer to reduce expenses.
- Reliability: **Effective moisture reduction** helps maintain your product's original condition, and ensures accurate results

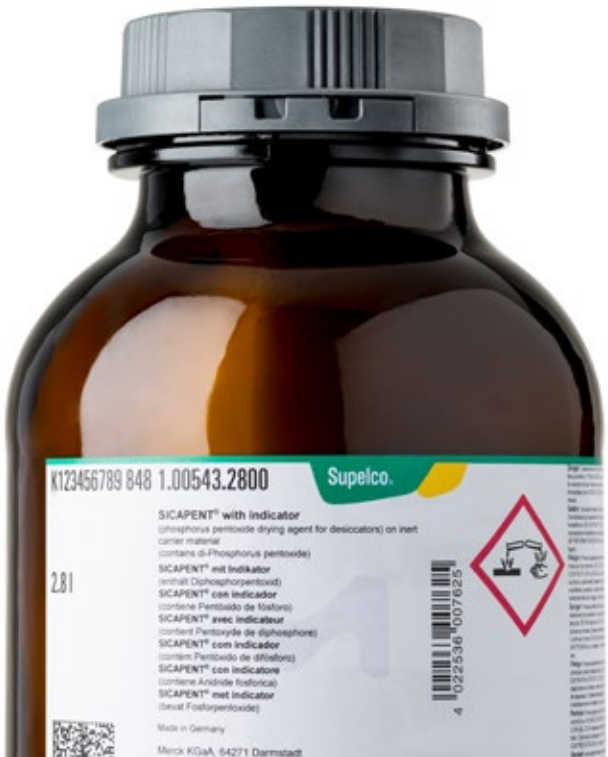
Drying Agents

Optimize desiccation with absolute reliability

Calcium chloride [$CaCl_2$]	CAS No.	Content	Packaging	Ord. No.
Calcium chloride anhydrous, granules Reag. Ph Eur	10043-52-4	500 g	HDPE bottle	1.02378.0500
		2.5 kg	HDPE bottle	1.02378.2500
		25 kg	Fibre carton	1.02378.9025
Calcium chloride anhydrous, granular ~ 1–2 mm	10043-52-4	1 kg	HDPE bottle	1.02379.1000
		5 kg	HDPE bottle	1.02379.5000
		25 kg	Fibre carton	1.02379.9025
Calcium chloride anhydrous, granular ~ 2–6 mm	10043-52-4	1 kg	HDPE bottle	1.02391.1000
		5 kg	Fibre carton	1.02391.5000
		25 kg	Fibre carton	1.02391.9025

Desiccant sachets [SiO_2]	Content	Packaging	Ord. No.
Desiccant sachet 10 g silica gel with humidity indicator (orange gel) sachet: 7 x 9 cm	50 units	Metal can	1.03804.0001
Desiccant sachet 100 g silica gel with humidity indicator (orange gel) sachet: 15 x 14 cm	10 units	Metal can	1.03805.0001
Desiccant sachet 250 g silica gel with humidity indicator (orange gel) sachet: 15 x 20.5 cm	10 units	Metal can	1.03806.0001
Desiccant sachet 3 g silica gel with humidity indicator (orange gel) sachet: 4 x 7 cm	100 units	Metal can	1.03803.0001
	1000 units	Fibre carton	1.03803.0002

▶ Further desiccant sachets, e.g. 500 g, on request.



SICAPENT® drying agent

Molecular sieves	CAS No.	Content	Packaging	Ord. No.
Molecular sieve 0.3 nm beads ~ 2 mm[1] (suitable for use in Karl Fischer titration)	1318-02-1	250 g	HDPE bottle	1.05704.0250
		1 kg	HDPE bottle	1.05704.1000
		10 kg	Bucket, plastic	1.05704.9010
Molecular sieve 0.3 nm beads, with moisture indicator ~ 2 mm[1]	–	250 g	HDPE bottle	1.05734.0250
		1 kg	HDPE bottle	1.05734.1000
Molecular sieve 0.3 nm rods ~ 1.6 mm (1/16")	1318-02-1	250 g	HDPE bottle	1.05741.0250
		1 kg	HDPE bottle	1.05741.1000
Molecular sieve 0.4 nm beads ~ 2 mm Reag. Ph Eur	1318-02-1	250 g	Glass bottle	1.05708.0250
		1 kg	Glass bottle	1.05708.1000
		10 kg	Bucket, plastic	1.05708.9010
Molecular sieve 0.4 nm beads, with moisture indicator ~ 2 mm	–	250 g	Glass bottle	1.05739.0250
		1 kg	Glass bottle	1.05739.1000
Molecular sieve 0.4 nm rods ~ 1.6 mm (1/16")	1318-02-1	1 kg	HDPE bottle	1.05743.1000
Molecular sieve 1.0 nm beads ~ 2 mm	1318-02-1	1 kg	Glass bottle	1.05703.1000

▶ 1) Molecular sieves with 0.3 nm bead form (105704) and with indicator brown gel (105734) are suitable for use in Karl Fischer titrators.

Phosphorus pentoxide [P_2O_5]	CAS No.	Content	Packaging	Ord. No.
di-Phosphorus pentoxide extra pure	1314-56-3	1 kg	Glass bottle	1.00540.1000
		25 kg	Plastic drum	1.00540.9025
di-Phosphorus pentoxide for analysis ACS, ISO, Reag. Ph Eur	1314-56-3	100 g	Glass bottle	1.00570.0100
		500 g	Glass bottle	1.00570.0500

Silica gel [SiO_2]	CAS No.	Content	Packaging	Ord. No.
Silica gel granules, desiccant ~ 0.2–1 mm	7631-86-9	1 kg	HDPE bottle	1.01905.1000
Silica gel granules, desiccant ~ 2–5 mm	7631-86-9	1 kg	HDPE bottle	1.01907.1000
		5 kg	Plastic bottle	1.01907.5000
Silica gel with moisture indicator (brown gel) desiccant ~ 1–4 mm	–	1 kg	HDPE bottle	1.01972.1000
		5 kg	HDPE bottle	1.01972.5000
		25 kg	Plastic drum	1.01972.9025
Silica gel with indicator (orange gel), granulate ~ 1–3 mm	–	1 kg	HDPE bottle	1.01969.1000
		5 kg	HDPE bottle	1.01969.5000
		25 kg	Plastic drum	1.01969.9025
Silica gel beads, desiccant ~ 2–5 mm	7631-86-9	1 kg	HDPE bottle	1.07735.1000

SICAPENT® drying agent	Content	Packaging	Ord. No.
SICAPENT® drying agent with indicator (phosphorus pentoxide for desiccators) on inert carrier material	500 mL	Glass bottle	1.00543.0500
	2.8 L	Glass bottle	1.00543.2800

Absorption and Filtration

Quality materials for absorption, adsorption & filtration

Purification is one of the most important applications in analytical laboratories. To ease your daily work, we offer a complete range of absorption and adsorption reagents, as well as filtration and clarification materials – all with excellent take-up properties. Our products are suitable for a wide variety of applications, such as absorbing or binding substances, as well as for decolorization, clarification and filtration. Regardless of the purpose, they deliver quality perfected for your intended use.

Your benefits

- Reliability: All natural products used are tested for organic impurities, and various anions and cations. The products are specified and offer excellent **batch-to-batch consistency.**

- Convenience: **Comprehensive portfolio** allows successful implementation of a wide variety of purification methods.

- Sustainability: Most of our absorption, adsorption and filtration materials are natural reagents which are **not harmful to the environment.**

Absorption and Filtration

Quality materials for absorption, adsorption & filtration

Calcium oxide	CAS No.	Content	Packaging	Ord. No.
Calcium oxide from marble small lumps ~ 3–20 mm	1305-78-8	1 kg	HDPE bottle	1.02109.1000
		25 kg	Fibre carton	1.02109.9025

Charcoal activated	CAS No.	Content	Packaging	Ord. No.
Charcoal activated for analysis	7440-44-0	250 g	Metal can	1.02186.0250
		1 kg	Metal can	1.02186.1000
		20 kg	Fibre carton	1.02186.9020
Charcoal activated granular about 1.5 mm extra pure	7440-44-0	1 kg	Plastic bag	1.02514.1000
		5 kg	Fibre carton	1.02514.5000
		25 kg	Fibre carton	1.02514.9025
Charcoal activated powder extra pure	7440-44-0	1 kg	Metal can	1.02184.1000
		5 kg	Fibre carton	1.02184.5000
		20 kg	Fibre carton	1.02184.9020
Charcoal activated pure	7440-44-0	1 kg	Plastic bag	1.02183.1000
		15 kg	Fibre carton	1.02183.9015

Charcoal activated

Calcium oxide

Sea sand

Sea sand	CAS No.	Content	Packaging	Ord. No.
Sea sand extra pure	7631-86-9	1 kg	HDPE bottle	1.07711.1000
		5 kg	HDPE bottle	1.07711.5000
		25 kg	Fibre carton	1.07711.9025
Sea sand purified by acid and calcined for analysis	7631-86-9	1 kg	HDPE bottle	1.07712.1000
		5 kg	HDPE bottle	1.07712.5000
		10 kg	HDPE bottle	1.07712.9010
		25 kg	Fibre carton	1.07712.9025

Sodalime	CAS No.	Content	Packaging	Ord. No.
Sodalime, granules ~ 1–2.5 mm with indicator for analysis	–	500 g	HDPE bottle	1.06733.0501
		2.5 kg	HDPE bottle	1.06733.2500
Sodalime pellets with indicator for analysis	–	1 kg	HDPE bottle	1.06839.1001
		5 kg	HDPE bottle	1.06839.5001
		25 kg	Fibre carton	1.06839.9025

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