СОВЛАБ
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RCI Labscan
GROUP

Chemicals For Electronic Industrial Applications

Quality excellence is at the heart of RCI Labscan strategy.

Reliability based on efficient and standardized processes.

Consistent quality to ensure reliable analyses.

RCI Labscan
RCI Labscan Limited

ELECTRONIC INDUSTRIAL

RCI Labscan offers a broad range of high purity chemicals for use in the electronic industry. Applications for our electronic grade chemicals are used in various electronic manufacturing processes, including semiconductor fabrication, printed circuit board assembly, and display manufacturing. Key characteristics of our chemicals include high purity (extremely low levels of impurities, such as metal ions, organic contaminants, and particulate matter), strict specifications (industry standards), stringent quality control (closely monitored and controlled to minimize the risk of contamination) and safety with packaging and handling, which we are committed to delivering the high standards of quality, precision, and reliability in the electronic chemicals industry. Our team of dedicated experts has been working tirelessly to develop cutting-edge solutions that cater to the unique needs of your industry. We believe that our electronic grade chemical products will bring added value to your operations and contribute to your success. Our goal is to be a trusted partner in your journey towards innovation and excellence.

Semig Grade

- High purity acids and solvents for electronic industrial applications.
- Low levels of metallic impurities.

Electro Extra Grade

- Acids for semi-conductor industry and other electronic industrial.
- Low levels of metallic impurities content 0.5 ppm maximum.

Electropure Grade

- High purity acids and solvents for cleaning and etching in electronic industrial applications.
- Low levels of metallic impurities.
- Nitric acid 65% and Sulfuric acid 98% low Hg, both suitable for trace metal analysis.

Extropure Grade

- High purity solvents for electronic industrial applications.
- Low levels of metallic impurities.
- Free of Silicone, DOP and Amide.

VLSI Grade

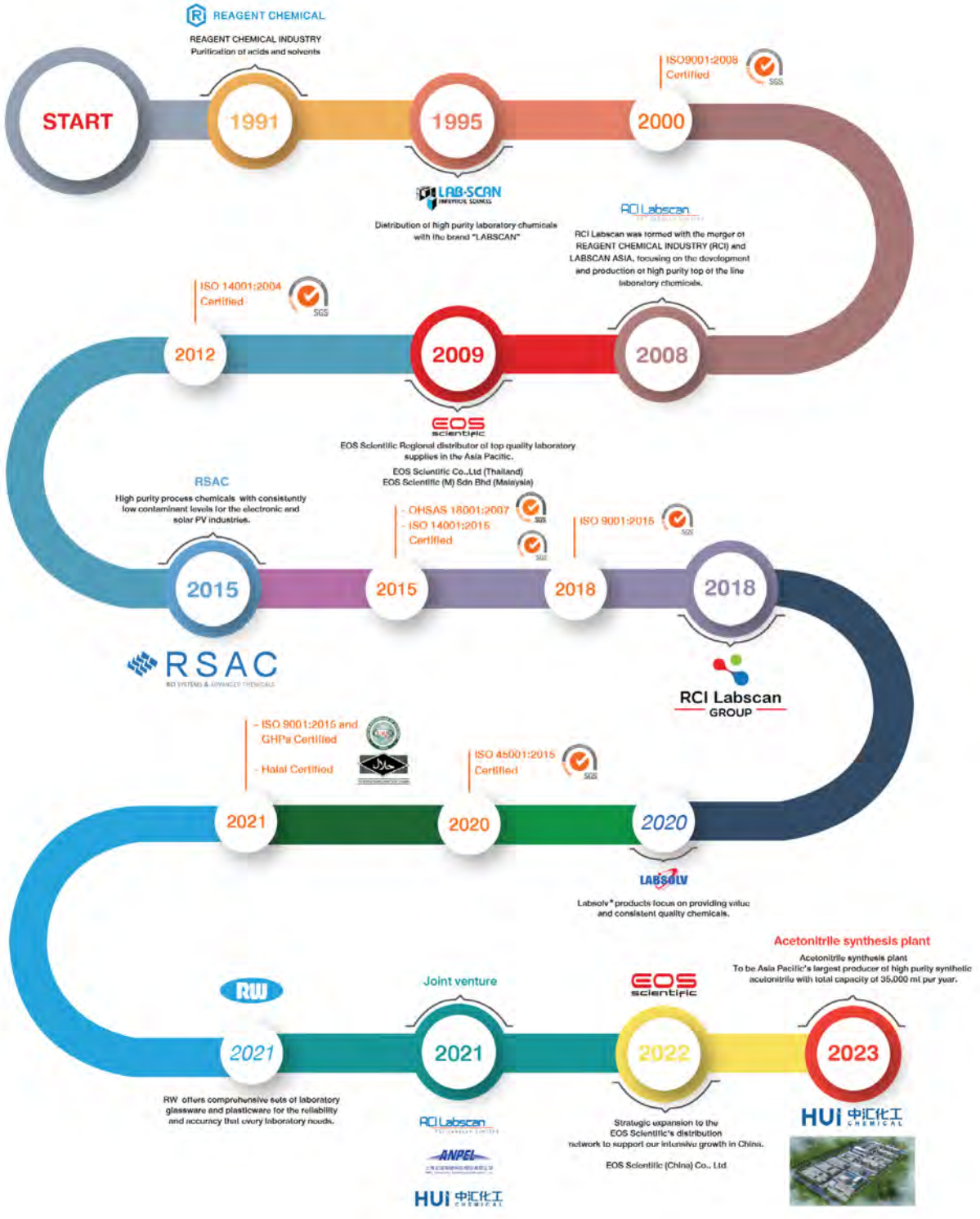
- Ultra purity acids and solvents for cleaning and etching wafers for the semi-conductor industry and other electronic industrial applications.
- Extremely low levels of metallic impurities.
- Used for trace metal analysis.

RCI Labscan is your reliable partner for custom made products.

A timeline of our RCI Labscan group history

We're an industry leader

Established in 1991, RCI Labscan Group is a conglomerate of companies, comprising of RCI Labscan Limited, EOS Scientific, and RCI Systems & Advanced Chemicals. We manufacture and distribute high-purity chemicals for businesses in a wide variety of industries in over 20 countries. In doing so, our company has grown to become one of Asia Pacific's leading high purity chemicals supplier.



COMPANY PROFILE - RCI Labscan Limited

Company History

RCI LABSCAN Limited was established in 2008, from the acquisition and merger of Labscan Asia Co.,Ltd and Reagent Chemical Industry Co.,Ltd. The intensive investment also included the acquisition of Technology and Capability from USA, Europe (UK and Germany), and Asia. The company is already the preferred OEM supplier to a number of global multinational companies. With latest validity equipment, our Quality Control Laboratory is recognized as the Final Quality Testing Lab by some of its Multi-Nation Customer (MNC).

Our products are made available to customers under the brand RCI Labscan for chemical products with various laboratories as well as industrial applications.

With world-class technology and expertise, a strong commitment to excellence in quality, service and value to customers, RCI Labscan has grown rapidly to become one of the leading manufacturers and distributors of purified reagents in Asia.

Labscan Asia Co., LTD. (Established in 1995)

- Joint venture with VS General Chem Group and Labscan Ireland Ltd.
- Production of HIGH PURITY Laboratory Reagents.
- Strong in OEM business and Research/Laboratories in Asia.

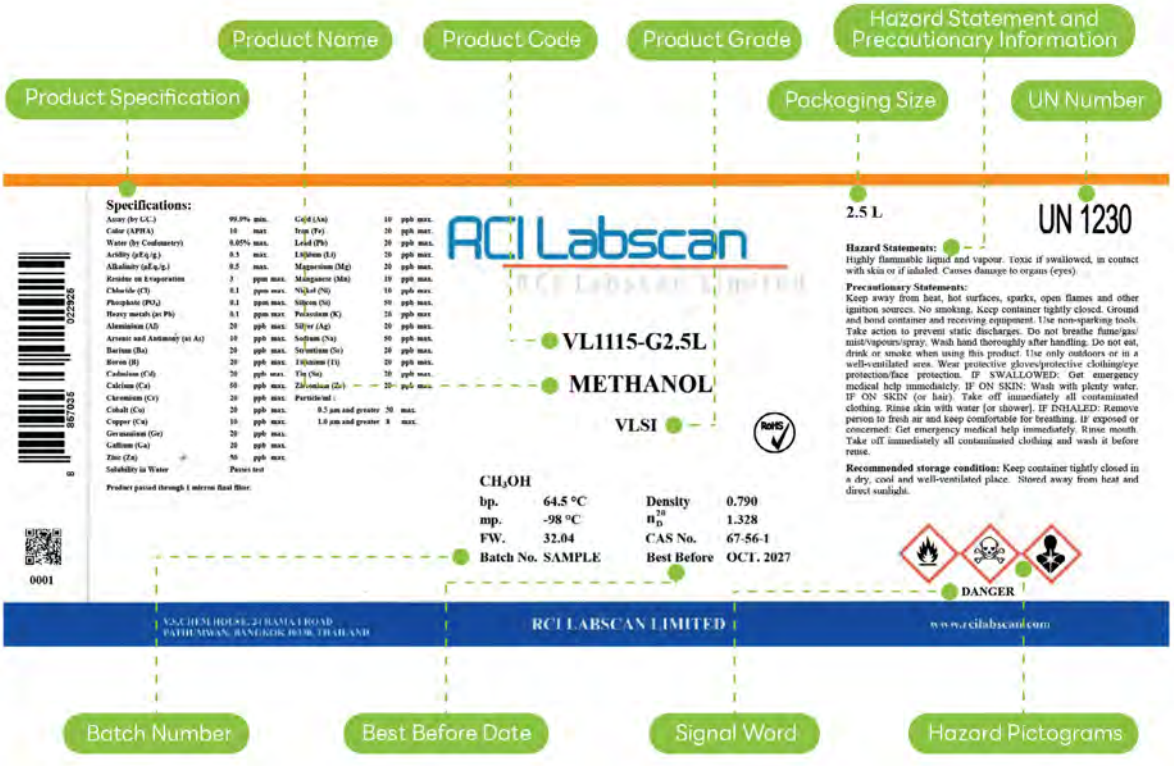
Reagent Chemical Co., LTD. (Established in 1991)

Plant designed to produce Electronic Grade and Laboratory Grade ACIDS and SOLVENTS.
Strong in OEM and Electronics Industry.

A timeline of our RCI Labscan group history

RCI Labscan Label

Our Label is designed to provide the necessary up to date information and is in compliant to the GHS system (Globally Harmonized System of Classification and Labelling of Chemicals)



Accreditations

ISO 9001 | ISO 14001 | ISO 45001 | GHP Certificate | Halal

Packaging

"Packaging for safety, convenience and product quality"

RCI Labscan offers a comprehensive range of packaging which is designed for safety, environmental protection, convenient handling and storage. All packaging are guaranteed to preserve the integrity of our products.

Amber Glass Bottles:

Suitable for photosensitive Chemicals.

We offer 100ml., 500ml., 1 Litre, 2.5 Litres and 4 Litres sizes

500 ml. and 1 Litre:	6 bottles per box
100 ml., 2.5 Litres and 4 Litres:	4 bottles per box

Plastic Bottles:

Plastic Bottle are supplied when chemical properties of the content and bottle are compatible, because they minimize the risk of breakage, are lighter in weight as well as being easier and more economical to transport.

We offer 25 grams, 100 grams, 500 grams, 1 kg., 500 ml., 1 Litre, 2.5 Litres and 4 Litres sizes

500 ml. and 1 Litre:	6 bottles per box
2.5 Litres and 4 Litres:	4 bottles per box
25 grams and 100 grams:	4 bottles per box
500 grams and 1 kg.:	6 bottles per box

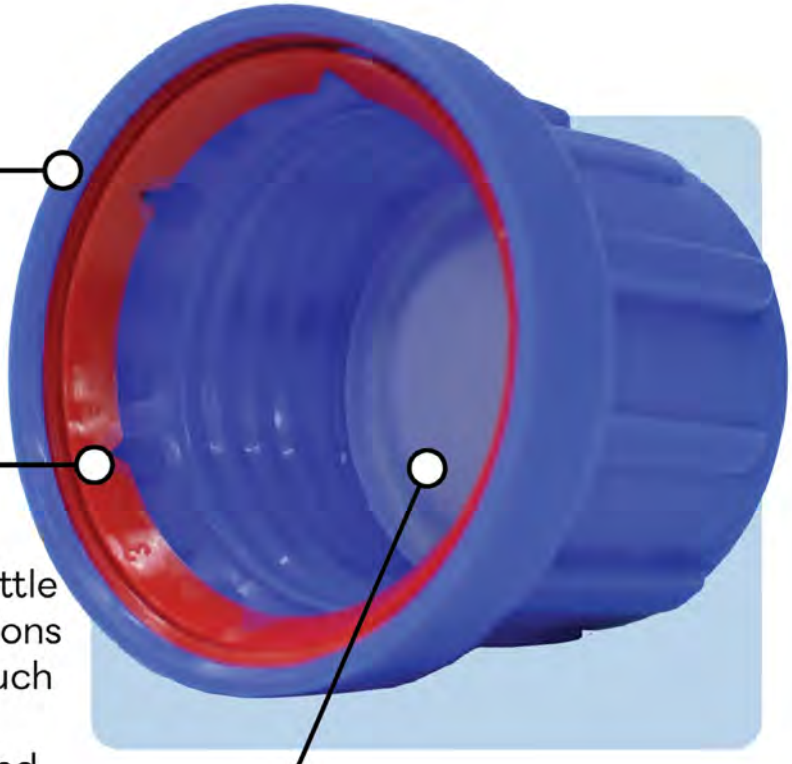
Drums for Bulk Quantities:

We currently offer the following sizes:
20 Litres HDPE drum
200 Litres HDPE drum
25 Litres Metal drum
200 Litres metal drum

Intermediate Bulk Containers (IBCs):

We currently offer the following size:
1,000 Litres

The Advantage of Our Signature Bottle Cap



Outer cap

Material : Polypropylene
Function : To seal and secure the contents of the chemical bottle.

Pilfer proof ring

Material : Polypropylene
Function : It remains on the bottle after opening and various options are available for this closure such as spray insert, rough groove, child resistant, pourer insert and cone sealing.

Inner plug and Teflon sheet

Material : Low Density Polyethylene (Inner plug) Polytetrafluorcethylene (Tefion sheet)
Function : It is a component with an inner plug that comes into contact with resistant to various types of chemicals, to enhances the sealing of chemicals for improved performance and prevent chemical leakage.

Bottle Package

for Amber Glass 2.5/4 Litre Plastic 2.5/4 Litre

Solvent Product

Acid Product

RCI Labscan bottle caps, designed to provide security and prevent tampering, securely seal the tops of our bottles, ensuring the preservation of your chemicals' integrity.

Exceptional Material Quality

Crafted from premium-grade materials, chemical resistance, and preventing any interactions.

Safety Compliance

Each of our caps adheres strictly to safety standards and regulatory requirements.

Secure Seal

an cirtight and leak-proof closure and mitigating the risk of spillage or contamination.

Innovative Design

User-friendly (convenience in mind) designs that make opening and closing.

Compatibility and Versatility

Designed to fit a wide orray of bottle sizes and shapes, with meeting various needs within the industry.

Longevity and Cost-Efficiency

The durability and reliability of our bottle caps contribute to the longevity of stored chemicals.

Scan QR code
of our product

DISCOVER THE NEW GRADE SUPERPURE

PRODUCT HIGHLIGHT

- **Ultra-Low Elemental Impurities**
- **Critical for Trace Analysis**
- **Instrumental Versatility**
- **Quality Assurance**

We currently offer the following package : **Plastic bottle 1 Litre**

Nitric Acid 70%, Superpure — SP1137

	HNO_3	FW. 63.01	Density 1 L	= 1.41	Kg.
	CAS-No.	7697-37-2	Melting Point	- 41	°C
	Code	SP1137	Boiling Point	119.9	°C

Specifications

Assay (by acidimetry)	69.0 – 70.0%		Indium (In)	0.1	ppb max.
Appearance	Passes test		Iron (Fe)	15	ppb max.
Color (APHA)	7	max.	Lead (Pb)	0.3	ppb max.
Residue after Ignition	1	ppm max.	Lithium (Li)	0.1	ppb max.
Chloride (Cl)	0.08	ppm max.	Magnesium (Mg)	5	ppb max.
Phosphate (PO_4)	0.1	ppm max.	Manganese (Mn)	0.1	ppb max.
Sulfate (SO_4)	0.2	ppm max.	Mercury (Hg)	0.1	ppb max.
Silicate (as Si)	0.1	ppm max.	Molybdenum (Mo)	0.5	ppb max.
Aluminium (Al)	5	ppb max.	Nickel (Ni)	0.5	ppb max.
Antimony (Sb)	0.5	ppb max.	Niobium (Nb)	0.1	ppb max.
Arsenic (As)	0.5	ppb max.	Platinum (Pt)	0.5	ppb max.
Barium (Ba)	0.3	ppb max.	Potassium (K)	5	ppb max.
Beryllium (Be)	0.1	ppb max.	Silver (Ag)	1	ppb max.
Bismuth (Bi)	0.2	ppb max.	Sodium (Na)	10	ppb max.
Boron (B)	2	ppb max.	Strontium (Sr)	0.1	ppb max.
Cadmium (Cd)	0.5	ppb max.	Thallium (Tl)	0.1	ppb max.
Calcium (Ca)	15	ppb max.	Tin (Sn)	0.5	ppb max.
Chromium (Cr)	10	ppb max.	Titanium (Ti)	0.5	ppb max.
Cobalt (Co)	1	ppb max.	Vanadium (V)	0.5	ppb max.
Copper (Cu)	0.5	ppb max.	Zinc (Zn)	1	ppb max.
Gallium (Ga)	0.1	ppb max.	Zirconium (Zr)	0.1	ppb max.
Germanium (Ge)	0.1	ppb max.	Particle/ml :		
Gold (Au)	0.1	ppb max.	0.5 µm and greater	64	max.

Acetic Acid 96%, Electropure

EP1000

CH_3COOH	FW. 60.05	Melting Point	10 °C
CAS-No.	64-19-7	Boiling Point	118 °C
Density 1 L	1.06 Kg.		

Specifications

Assay (by acidimetry)	96.0%	min.
Color (APHA)	10	max.
Acetic Anhydride [$(CH_3CO)_2O$]	0.01%	max.
Solubility in water	Passes test	
Substances reducing dichromate	Passes test	
Substances reducing permanganate	Passes test	
Residue on Evaporation	5	ppm max.
Chloride (Cl)	0.5	ppm max.
Phosphate (PO_4)	1	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Aluminium (Al)	0.05	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Barium (Ba)	0.05	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.05	ppm max.
Boron (B)	0.05	ppm max.
Cadmium (Cd)	0.02	ppm max.
Calcium (Ca)	0.5	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.02	ppm max.
Gallium (Ga)	0.02	ppm max.

Germanium (Ge)	0.02	ppm max.
Gold (Au)	0.1	ppm max.
Indium (In)	0.02	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.02	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.2	ppm max.
Manganese (Mn)	0.02	ppm max.
Molybdenum (Mo)	0.02	ppm max.
Nickel (Ni)	0.02	ppm max.
Platinum (Pt)	0.02	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.5	ppm max.
Strontium (Sr)	0.05	ppm max.
Thallium (Tl)	0.02	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.05	ppm max.
Vanadium (V)	0.02	ppm max.
Zinc (Zn)	0.1	ppm max.
Zirconium (Zr)	0.05	ppm max.

Cat No.	Package	Size
EP1000-G500ML	Amber Glass bottle	500 ML
EP1000-G1L	Amber Glass bottle	1 L
EP1000-G2.5L	Amber Glass bottle	2.5 L
EP1000-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1000-G4L	Amber Glass bottle	4 L
EP1000-P4L	Plastic bottle	4 L
EP1000-P20L	Plastic drum	20 L
EP1000-P200L	Plastic drum	200 L

Acetic Acid, Glacial Electropure

EP1002

CH_3COOH	FW. 60.05	Melting Point	17 °C
CAS-No.	64-19-7	Boiling Point	118 °C
Density 1 L	1.05 Kg.		

Specifications

Assay (by acidimetry)	99.8%	min.
Color (APHA)	10	max.
Acetaldehyde	2	ppm max.
Acetic Anhydride [$(CH_3CO)_2O$]	100	ppm max.
Residue on Evaporation	5	ppm max.
Solubility in water	Passes test	
Substances reducing dichromate	Passes test	
Substances reducing permanganate	Passes test	
Chloride (Cl)	0.5	ppm max.
Phosphate (PO_4)	1	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Aluminium (Al)	0.05	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Barium (Ba)	0.05	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.05	ppm max.
Boron (B)	0.05	ppm max.
Cadmium (Cd)	0.02	ppm max.
Calcium (Ca)	0.5	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.02	ppm max.

Gallium (Ga)	0.02	ppm max.
Germanium (Ge)	0.02	ppm max.
Gold (Au)	0.1	ppm max.
Indium (In)	0.02	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.02	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.02	ppm max.
Molybdenum (Mo)	0.02	ppm max.
Nickel (Ni)	0.02	ppm max.
Platinum (Pt)	0.1	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.5	ppm max.
Strontium (Sr)	0.05	ppm max.
Thallium (Tl)	0.05	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.05	ppm max.
Vanadium (V)	0.02	ppm max.
Zinc (Zn)	0.1	ppm max.
Zirconium (Zr)	0.05	ppm max.

Cat No.	Package	Size
EP1002-G500ML	Amber Glass bottle	500 ML
EP1002-G1L	Amber Glass bottle	1 L
EP1002-G2.5L	Amber Glass bottle	2.5 L
EP1002-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1002-G4L	Amber Glass bottle	4 L
EP1002-P4L	Plastic bottle	4 L
EP1002-P20L	Plastic drum	20 L
EP1002-P200L	Plastic drum	200 L

Acetic Acid, Glacial Semig

SM1002

CH_3COOH	FW. 60.05	Melting Point	17 °C
CAS-No.	64-19-7	Boiling Point	118 °C
Density 1 L	1.05 Kg.		

Specifications

Assay (by acidimetry)	99.7%	min.
Color (APHA)	10	max.
Residue on Evaporation	5	ppm max.
Solubility in Water	Passes test	
Substances reducing dichromate	Passes test	
Substances reducing permanganate	Passes test	
Chloride (Cl)	0.5	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Aluminium (Al)	0.3	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Boron (B)	0.2	ppm max.
Calcium (Ca)	0.3	ppm max.

Chromium (Cr)	0.2	ppm max.
Copper (Cu)	0.1	ppm max.
Gold (Au)	0.3	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.3	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.3	ppm max.
Nickel (Ni)	0.1	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.3	ppm max.
Titanium (Ti)	0.3	ppm max.
Zinc (Zn)	0.3	ppm max.

Cat No.	Package	Size
SM1002-G500ML	Amber Glass bottle	500 ML
SM1002-G1L	Amber Glass bottle	1 L
SM1002-G2.5L	Amber Glass bottle	2.5 L
SM1002-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1002-G4L	Amber Glass bottle	4 L
SM1002-P4L	Plastic bottle	4 L
SM1002-P20L	Plastic drum	20 L
SM1002-P200L	Plastic drum	200 L

Acetic Acid, Glacial VLSI

VL1002

CH_3COOH	FW. 60.05	Melting Point	17 °C
CAS-No.	64-19-7	Boiling Point	118 °C
Density 1 L	1.05 Kg.		

Specifications

Assay (by acidimetry)	99.8%	min.
Color (APHA)	10	max.
Acetaldehyde	2	ppm max.
Acetic Anhydride [$(CH_3CO)_2O$]	100	ppm max.
Formic acid	100	ppm max.
Residue on Evaporation	5	ppm max.
Substances reducing dichromate	Passes test	
Substances reducing permanganate	Passes test	
Solubility in water	Passes test	
Chloride (Cl)	0.1	ppm max.
Phosphate (PO_4)	0.05	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Aluminium (Al)	20	ppm max.
Arsenic and Antimony (as As)	5	ppm max.
Barium (Ba)	10	ppm max.
Beryllium (Be)	10	ppm max.
Bismuth (Bi)	50	ppm max.
Boron (B)	10	ppm max.
Cadmium (Cd)	10	ppm max.
Calcium (Ca)	100	ppm max.
Chromium (Cr)	10	ppm max.
Cobalt (Co)	10	ppm max.
Copper (Cu)	10	ppm max.

Gallium (Ga)	10	ppm max.
Germanium (Ge)	20	ppm max.
Gold (Au)	20	ppm max.
Indium (In)	10	ppm max.
Iron (Fe)	100	ppm max.
Lead (Pb)	10	ppm max.
Lithium (Li)	10	ppm max.
Magnesium (Mg)	50	ppm max.
Manganese (Mn)	10	ppm max.
Molybdenum (Mo)	20	ppm max.
Nickel (Ni)	10	ppm max.
Platinum (Pt)	20	ppm max.
Potassium (K)	50	ppm max.
Silver (Ag)	0.5	ppm max.
Sodium (Na)	200	ppm max.
Strontium (Sr)	20	ppm max.
Thallium (Tl)	20	ppm max.
Tin (Sn)	50	ppm max.
Titanium (Ti)	50	ppm max.
Vanadium (V)	10	ppm max.
Zinc (Zn)	50	ppm max.
Zirconium (Zr)	20	ppm max.

Product passed through 1 micron final filter.

Cat No.	Package	Size
VL1002-G2.5L	Amber Glass bottle	2.5 L
VL1002-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
VL1002-G4L	Amber Glass bottle	4 L
VL1002-P4L	Plastic drum	4 L

Acetone, Electropure

EP1003

CH_3COOH_3	FW. 58.08	Melting Point	-95.4 °C
CAS-No.	67-64-1	Boiling Point	56.2 °C
Density 1 L	0.790 Kg.		

Specifications

Assay (by GC.)	99.8%	min.
Identity	Corresponds to IR spectrum	
Color (APHA)	10	max.
Water (by Coulometry)	0.2%	max.
Acidity (μEq./g.)	0.3	max.
Alkalinity (μEq./g.)	0.5	max.
Specific resistance (MΩ.cm)	5	min.
Residue on Evaporation	5	ppm max.
Ethanol (GC.)	100	ppm max.
Methanol (GC.)	500	ppm max.
Aldehydes (as HCHO)	10	ppm max.
Solubility in water	Passes test	
Substances reducing permanganate (as O)	2.5	ppm max.
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.1	ppm max.
Heavy metals (as Pb)	0.1	ppm max.
Aluminium (Al)	0.05	ppm max.
Antimony (Sb)	0.01	ppm max.
Arsenic (As)	0.01	ppm max.
Barium (Ba)	0.05	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.1	ppm max.
Boron (B)	0.01	ppm max.
Cadmium (Cd)	0.02	ppm max.
Calcium (Ca)	0.1	ppm max.

Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.01	ppm max.
Gallium (Ga)	0.02	ppm max.
Gold (Au)	0.05	ppm max.
Indium (In)	0.02	ppm max.
Iron (Fe)	0.05	ppm max.
Lead (Pb)	0.02	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.05	ppm max.
Manganese (Mn)	0.01	ppm max.
Molybdenum (Mo)	0.05	ppm max.
Nickel (Ni)	0.01	ppm max.
Platinum (Pt)	0.2	ppm max.
Potassium (K)	0.05	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.2	ppm max.
Strontium (Sr)	0.02	ppm max.
Thallium (Tl)	0.05	ppm max.
Tin (Sn)	0.05	ppm max.
Titanium (Ti)	0.05	ppm max.
Vanadium (V)	0.05	ppm max.
Zinc (Zn)	0.05	ppm max.
Zirconium (Zr)	0.2	ppm max.

Cat No.	Package	Size
EP1003-G500ML	Amber Glass bottle	500 ML
EP1003-G1L	Amber Glass bottle	1 L
EP1003-G2.5L	Amber Glass bottle	2.5 L
EP1003-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1003-G4L	Amber Glass bottle	4 L
EP1003-P4L	Plastic bottle	4 L
EP1003-P20L	Plastic drum	20 L
EP1003-P200L	Plastic drum	200 L

Acetone, Extropure

XP1003

CH_3COOH_3	FW. 58.08
CAS-No.	67-64-1
Density 1 L	0.790 Kg.
Melting Point	-95.4 °C
Boiling Point	56.2 °C

Specifications

Assay (by GC.)	99.9%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.3%	max.
Acidity (μEq./g.)	0.3	max.
Alkalinity (μEq./g.)	0.5	max.
Solubility in water	Passes test	
Residue on Evaporation	3	ppm max.
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.1	ppm max.
Heavy metals (as Pb)	100	ppb max.
Aluminium (Al)	50	ppb max.
Arsenic and Antimony (as As)	10	ppb max.
Barium (Ba)	20	ppb max.
Boron (B)	20	ppb max.
Cadmium (Cd)	20	ppb max.
Calcium (Ca)	50	ppb max.
Chromium (Cr)	20	ppb max.
Cobalt (Co)	20	ppb max.
Copper (Cu)	10	ppb max.
Gallium (Ga)	50	ppb max.
Germanium (Ge)	50	ppb max.

Gold (Au)	20	ppb max.
Iron (Fe)	20	ppb max.
Lead (Pb)	20	ppb max.
Lithium (Li)	50	ppb max.
Magnesium (Mg)	20	ppb max.
Manganese (Mn)	10	ppb max.
Nickel (Ni)	10	ppb max.
Potassium (K)	50	ppb max.
Silicon (Si)	50	ppb max.
Silver (Ag)	20	ppb max.
Sodium (Na)	50	ppb max.
Strontium (Sr)	20	ppb max.
Tin (Sn)	50	ppb max.
Titanium (Ti)	20	ppb max.
Zinc (Zn)	50	ppb max.
Silicone oil	Free	
DOP	Free	
Amide	Free	
Particle/ml :		
0.5 μm and greater	65	max.
1.0 μm and greater	8	max.

Cat No.	Package	Size
XP1003-G500ML	Amber Glass bottle	500 ML
XP1003-G1L	Amber Glass bottle	1 L
XP1003-G2.5L	Amber Glass bottle	2.5 L
XP1003-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
XP1003-P4L	Amber Glass bottle	4 L
XP1003-P4L	Plastic bottle	4 L
XP1003-P200L	Plastic drum	200 L

Acetone, Semig

SM1003

CH_3COOH_3	FW. 58.08	Melting Point	-95.4 °C
CAS-No.	67-64-1	Boiling Point	56.2 °C
Density 1 L	0.790 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.2%	max.
Acidity (µEq./g.)	0.3	max.
Alkalinity (µEq./g.)	0.5	max.
Solubility in water	Passes test	
Residue on Evaporation	3	ppm max.
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.1	ppm max.
Aluminium (Al)	0.1	ppm max.
Arsenic and Antimony (as As)	0.01	ppm max.
Boron (B)	0.1	ppm max.
Calcium (Ca)	0.1	ppm max.
Chromium (Cr)	0.1	ppm max.

Copper (Cu)	0.1	ppm max.
Gallium (Ga)	0.1	ppm max.
Gold (Au)	0.1	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.1	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.1	ppm max.
Nickel (Ni)	0.1	ppm max.
Potassium (K)	0.1	ppm max.
Sodium (Na)	0.1	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.1	ppm max.
Zinc (Zn)	0.1	ppm max.

Cat No.	Package	Size
SM1003-G500ML	Amber Glass bottle	500 ML
SM1003-G1L	Amber Glass bottle	1 L
SM1003-G2.5L	Amber Glass bottle	2.5 L
SM1003-P2.5L	Plastic bottle	2.5 L
SM1003-G4L	Amber Glass bottle	4 L

Cat No.	Package	Size
SM1003-P4L	Plastic bottle	4 L
SM1003-P20L	Plastic drum	20 L
SM1003-P200L	Plastic drum	200 L
SM1003-M200L	Metal drum	200 L

Acetone, VLSI

VL1003

CH_3COOH_3	FW. 58.08	Melting Point	-95.4 °C
CAS-No.	67-64-1	Boiling Point	56.2 °C
Density 1 L	0.790 Kg.		

Specifications

Assay (by GC.)	99.8%	min.
Identity	Corresponds to IR spectrum	
Water (by Coulometry)	0.2%	max.
Acidity (µEq./g.)	0.3	max.
Alkalinity (µEq./g.)	0.5	max.
Specific resistance (MΩ.cm)	5	min.
Residue on Evaporation	3	ppm max.
Ethanol (GC.)	50	ppm max.
Methanol (GC.)	500	ppm max.
Aldehydes (as HCHO)	10	ppm max.
Substances reducing permanganate (as O)	2.5	ppm max.
Heavy metals (as Pb)	0.1	ppm max.
Aluminium (Al)	50	ppb max.
Antimony (Sb)	10	ppb max.
Arsenic (As)	10	ppb max.
Barium (Ba)	20	ppb max.
Beryllium (Be)	10	ppb max.
Bismuth (Bi)	20	ppb max.
Boron (B)	10	ppb max.
Cadmium (Cd)	10	ppb max.
Calcium (Ca)	100	ppb max.
Chromium (Cr)	10	ppb max.
Cobalt (Co)	10	ppb max.
Copper (Cu)	10	ppb max.

Gallium (Ga)		10	ppb max.
Gold (Au)		20	ppb max.
Indium (In)		10	ppb max.
Iron (Fe)		10	ppb max.
Lead (Pb)		10	ppb max.
Lithium (Li)		10	ppb max.
Magnesium (Mg)		20	ppb max.
Manganese (Mn)		10	ppb max.
Molybdenum (Mo)		10	ppb max.
Nickel (Ni)		10	ppb max.
Platinum (Pt)		50	ppb max.
Potassium (K)		20	ppb max.
Silver (Ag)		10	ppb max.
Sodium (Na)		100	ppb max.
Strontium (Sr)		10	ppb max.
Thallium (Tl)		10	ppb max.
Tin (Sn)		20	ppb max.
Titanium (Ti)		20	ppb max.
Vanadium (V)		10	ppb max.
Zinc (Zn)		20	ppb max.
Zirconium (Zr)		20	ppb max.
Particle/ml :			
	0.5 µm and greater	30	max.
	1.0 µm and greater	8	max.

Product passed through 1 micron final filter.

Cat No.	Package	Size
VL1003-G2.5L	Amber Glass bottle	2.5 L
VL1003-G4L	Amber Glass bottle	4 L

Cat No.	Package	Size
VL1003-P2.5L	Plastic bottle	2.5 L
VL1003-P4L	Plastic bottle	4 L

Ammonium Hydroxide 28% Solution, Electropure

EP1404

NH_4OH	FW. 35.05	Melting Point	-72 °C
CAS-No.	1336-21-6	Boiling Point	32 °C
Density 1 L	0.900 Kg.		

Specifications

Assay (by acidimetry)	28%	min.
Appearance	Passes test	
Color (APHA)	10	max.
Carbon dioxide (CO_2)	20	ppm max.
Residue after Ignition	10	ppm max.
Substances reducing permanganate	Passes test	
Chloride (Cl)	0.3	ppm max.
Nitrate (NO_3)	1	ppm max.
Phosphate (PO_4)	2	ppm max.
Sulfate (SO_4)	0.3	ppm max.
Heavy metals (as Pb)	0.2	ppm max.
Aluminium (Al)	0.05	ppm max.
Arsenic (As)	0.05	ppm max.
Barium (Ba)	0.01	ppm max.
Beryllium (Be)	0.01	ppm max.
Bismuth (Bi)	0.02	ppm max.
Boron (B)	0.01	ppm max.
Cadmium (Cd)	0.01	ppm max.
Calcium (Ca)	0.1	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.01	ppm max.

Copper (Cu)	0.02	ppm max.
Gallium (Ga)	0.01	ppm max.
Germanium (Ge)	0.05	ppm max.
Gold (Au)	0.01	ppm max.
Iron (Fe)	0.05	ppm max.
Lead (Pb)	0.01	ppm max.
Lithium (Li)	0.01	ppm max.
Magnesium (Mg)	0.02	ppm max.
Manganese (Mn)	0.005	ppm max.
Molybdenum (Mo)	0.01	ppm max.
Nickel (Ni)	0.01	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.005	ppm max.
Sodium (Na)	0.1	ppm max.
Thallium (Tl)	0.01	ppm max.
Tin (Sn)	0.01	ppm max.
Titanium (Ti)	0.01	ppm max.
Vanadium (V)	0.01	ppm max.
Zinc (Zn)	0.02	ppm max.
Zirconium (Zr)	0.02	ppm max.

Cat No.	Package	Size
EP1404-G500ML	Amber Glass bottle	500 ML
EP1404-G1L	Amber Glass bottle	1 L

Cat No.	Package	Size
EP1404-G2.5L	Amber Glass bottle	2.5 L
EP1404-G4L	Amber Glass bottle	4 L

Chloroform, Electropure

EP1027E

$CHCl_3$	FW. 119.38	Melting Point	-63 °C
CAS-No.	67-66-3	Boiling Point	61 °C
Density 1 L	1.479 Kg.		

Specifications

Assay (by GC.)	99.8%	min.
Identity	Corresponds to IR spectrum	
Color (APHA)	10	max.
Water (by Coulometry)	0.01%	max.
Acidity (mEq./g.)	0.0005	max.
Residue on Evaporation	0.001%	max.
Carbonyl Compounds (as CO)	0.005%	max.
Free Chlorine (Cl)	0.0005%	max.
Chloride (Cl)	0.0001%	max.
Acetone and Aldehyde	Passes test	
Acid and Chloride	Passes test	
Substances darkened by sulfuric acid	Passes test	
Suitability for use in dithizone tests	Passes test	
Carbon tetrachloride (GC.)	0.01%	max.
Dichloromethane (GC.)	0.01%	max.
Tetrachloroethylene (GC.)	0.01%	max.
Trichloroethylene (GC.)	0.01%	max.
Aluminium (Al)	0.5	ppm max.
Arsenic (As)	0.02	ppm max.
Barium (Ba)	0.1	ppm max.
Boron (B)	0.02	ppm max.

Cadmium (Cd)	0.05	ppm max.
Calcium (Ca)	0.5	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.02	ppm max.
Gallium (Ga)	0.02	ppm max.
Germanium (Ge)	0.02	ppm max.
Gold (Au)	0.02	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.05	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.02	ppm max.
Nickel (Ni)	0.02	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.5	ppm max.
Strontium (Sr)	0.05	ppm max.
Tin (Sn)	0.1	ppm max.
Zinc (Zn)	0.1	ppm max.

Stabilized with about 1% ethanol.

Cat No.	Package	Size
EP1027E-G500ML	Amber Glass Bottle	500 ML
EP1027E-G1L	Amber Glass Bottle	1 L

Cat No.	Package	Size
EP1027E-G2.5L	Amber Glass Bottle	2.5 L
EP1027E-G4L	Amber Glass Bottle	4 L

Cyclohexane, Extropure

XP1033

C_6H_{12}	FW. 84.16	Melting Point	-6 °C
CAS-No.	110-82-7	Boiling Point	81 °C
Density 1 L	0.779 Kg.		

Specifications

Assay (by GC.)	99.8%	min.
Appearance	Clear	
Color (APHA)	10	max.
Water (by Coulometry)	0.01%	max.
Acidity (mEq./g.)	0.0003	max.
Residue on Evaporation	0.001%	max.
Cyclohexene (GC.)	0.05%	max.
Ethanol (GC.)	0.01%	max.
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	50	ppb max.
Arsenic (As)	20	ppb max.
Barium (Ba)	10	ppb max.
Boron (B)	10	ppb max.
Cadmium (Cd)	20	ppb max.
Calcium (Ca)	50	ppb max.
Chromium (Cr)	10	ppb max.
Cobalt (Co)	10	ppb max.

Copper (Cu)	10	ppb max.
Gallium (Ga)	20	ppb max.
Germanium (Ge)	20	ppb max.
Gold (Au)	20	ppb max.
Iron (Fe)	50	ppb max.
Lead (Pb)	20	ppb max.
Lithium (Li)	20	ppb max.
Magnesium (Mg)	20	ppb max.
Manganese (Mn)	20	ppb max.
Nickel (Ni)	20	ppb max.
Potassium (K)	50	ppb max.
Silver (Ag)	20	ppb max.
Sodium (Na)	50	ppb max.
Strontium (Sr)	20	ppb max.
Tin (Sn)	20	ppb max.
Zinc (Zn)	50	ppb max.
Silicone oil	Free	

Cat No.	Package	Size
XP1033-M200L	Metal drum	200 L

Dichloromethane, Electropure

EP1040A

CH_2Cl_2	FW. 84.93	Melting Point	-95 °C
CAS-No.	75-09-02	Boiling Point	40 °C
Density 1 L	1.330 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Appearance	Passes test	
Color (APHA)	10	max.
Water (by Coulometry)	0.02%	max.
Acidity (mEq./g.)	0.0003	max.
Residue on Evaporation	0.0005%	max.
Free Chlorine (Cl)	0.0002%	max.
Aluminium (Al)	0.5	ppm max.
Arsenic (As)	0.02	ppm max.
Barium (Ba)	0.1	ppm max.
Boron (B)	0.02	ppm max.
Cadmium (Cd)	0.05	ppm max.
Calcium (Ca)	0.5	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.02	ppm max.

Gallium (Ga)	0.02	ppm max.
Germanium (Ge)	0.02	ppm max.
Gold (Au)	0.02	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.05	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.02	ppm max.
Nickel (Ni)	0.02	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.5	ppm max.
Strontium (Sr)	0.05	ppm max.
Tin (Sn)	0.1	ppm max.
Zinc (Zn)	0.1	ppm max.

Stabilized with about 50 ppm amylene.

Cat No.	Package	Size
EP1040A-G500ML	Amber Glass bottle	500 ML
EP1040A-G1L	Amber Glass bottle	1 L
EP1040A-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
EP1040A-G4L	Amber Glass bottle	4 L
EP1040A-M20L	Metal drum	20 L
EP1040A-M200L	Metal drum	200 L

Dichloromethane, Extropure

XP1040A

CH_2Cl_2	FW. 84.93	Melting Point	-95 °C
CAS-No.	75-09-2	Boiling Point	40 °C
Density 1 L	1.330 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Appearance	Clear	
Color (APHA)	10	max.
Water (by Coulometry)	0.02%	max.
Acidity (mEq./g.)	0.0003	max.
Residue on Evaporation	0.0005%	max.
Free Chlorine (Cl)	0.0002%	max.
Aluminium (Al)	0.5	ppm max.
Arsenic (As)	0.02	ppm max.
Barium (Ba)	0.1	ppm max.
Boron (B)	0.02	ppm max.
Cadmium (Cd)	0.05	ppm max.
Calcium (Ca)	0.5	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.02	ppm max.
Gallium (Ga)	0.02	ppm max.

Germanium (Ge)	0.02	ppm max.
Gold (Au)	0.02	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.05	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.02	ppm max.
Nickel (Ni)	0.02	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.5	ppm max.
Strontium (Sr)	0.05	ppm max.
Tin (Sn)	0.1	ppm max.
Zinc (Zn)	0.1	ppm max.
Silicone oil	Free	ppm max.
DOP	Free	ppm max.
Amide	Free	ppm max.

Stabilized with about 50 ppm amylene.

Cat No.	Package	Size
XP1040A-G500ML	Amber Glass bottle	500 ML
XP1040A-G1L	Amber Glass bottle	1 L
XP1040A-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
XP1040A-G4L	Amber Glass bottle	4 L
XP1040A-M200L	Metal drum	200 L

Diethyl Ether, Electropure

EP1047E

$(C_2H_5)_2O$	FW. 74.12	Melting Point	-116.3 °C
CAS-No.	67-56-1	Boiling Point	34.6 °C
Density 1 L	0.710 Kg.		

Specifications

Assay (by GC.)	99.5%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.1%	max.
Acidity (mEq./g.)	0.0005	max.
Residue on Evaporation	5	ppm max.
Heavy metals (as Pb)	200	ppb max.
Aluminium (Al)	50	ppb max.
Arsenic and Antimony (as As)	10	ppb max.
Barium (Ba)	20	ppb max.
Boron (B)	10	ppb max.
Cadmium (Cd)	20	ppb max.
Calcium (Ca)	50	ppb max.
Chromium (Cr)	20	ppb max.
Cobalt (Co)	20	ppb max.
Copper (Cu)	10	ppb max.
Gallium (Ga)	30	ppb max.

Germanium (Ge)	30	ppb max.
Gold (Au)	20	ppb max.
Iron (Fe)	50	ppb max.
Lead (Pb)	20	ppb max.
Lithium (Li)	50	ppb max.
Magnesium (Mg)	20	ppb max.
Manganese (Mn)	20	ppb max.
Nickel (Ni)	10	ppb max.
Potassium (K)	100	ppb max.
Silver (Ag)	50	ppb max.
Sodium (Na)	100	ppb max.
Strontium (Sr)	20	ppb max.
Tin (Sn)	100	ppb max.
Titanium (Ti)	20	ppb max.
Zinc (Zn)	50	ppb max.

Stabilized with about 2% ethanol.

Cat No.	Package	Size
EP1047E-G500ML	Amber Glass bottle	500 ML
EP1047E-G1L	Amber Glass bottle	1 L
EP1047E-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
EP1047E-G4L	Amber Glass bottle	4 L
EP1047E-M20L	Metal drum	20 L
EP1047E-M200L	Metal drum	200 L

Hexanes, SDF Low Chloride — XP1101

C_6H_{14}	FW. 86.18	Melting Point	-94.3°C
CAS-No.	110-54-3	Boiling Point	69 °C
Density 1 L	0.660 Kg.		

Specifications

Assay (by GC. : Total C_6 Isomers)	99.5%	min.
Water (by Coulometry)	0.02%	max.
Acidity (mEq./g.)	0.0003%	max.
Residue on Evaporation	0.0005%	max.
Chloride (Cl)	0.02	ppm max.

Sulfur Compounds (S)	0.001%	max.
Thiophene	Passes test	
Silicone oil	Free	
DOP	Free	
Amide	Free	

Cat No.	Package	Size
XP1101-G500ML	Amber Glass bottle	500 ML
XP1101-G1L	Amber Glass bottle	1 L
XP1101-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
XP1101-G4L	Amber Glass bottle	4 L
XP1101-M200L	Metal drum	200 L

Hexanes, SDF — XP1100

C_6H_{14}	FW. 86.18	Melting Point	-94.3°C
CAS-No.	110-54-3	Boiling Point	69 °C
Density 1 L	0.660 Kg.		

Specifications

Assay (by GC. : Total C_6 Isomers)	99.5%	min.
Water (by Coulometry)	0.02%	max.
Acidity (mEq./g.)	0.0003	max.
Residue on Evaporation	0.0005%	max.
Sulfur Compounds (S)	0.001%	max.

Thiophene	Passes test
Silicone oil	Free
DOP	Free
Amide	Free

Total isomers : n-Hexane, Methylpentane, Methylcyclopentane and Dimethylbutane.

Cat No.	Package	Size
XP1100-G500ML	Amber Glass bottle	500 ML
XP1100-G1L	Amber Glass bottle	1 L
XP1100-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
XP1100-G4L	Amber Glass bottle	4 L
XP1100-M200L	Metal drum	200 L

Hydrochloric Acid 3%, Semig — SM1301

HCl	FW. 36.46
CAS-No.	7647-01-0
Density 1 L	1.02 Kg.

Specifications

Assay (by acidimetry)	3%	min.
Appearance	Passes test	
Color (APHA)	10	max.
Residue after Ignition	3	ppm max.
Ammonium (NH_4)	0.5	ppm max.
Free Chlorine (Cl)	0.5	ppm max.
Bromide (Br)	5	ppm max.
Phosphate (PO_4)	0.05	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Sulfite (SO_3)	0.5	ppm max.
Extractable Organic Substance	5	ppm max.
Heavy metals (as Pb)	0.1	ppm max.
Aluminium (Al)	0.2	ppm max.
Antimony (Sb)	0.005	ppm max.
Arsenic (As)	0.005	ppm max.

Boron (B)	0.1	ppm max.
Calcium (Ca)	0.2	ppm max.
Chromium (Cr)	0.1	ppm max.
Copper (Cu)	0.05	ppm max.
Gold (Au)	0.2	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.005	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.2	ppm max.
Nickel (Ni)	0.03	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.1	ppm max.
Zinc (Zn)	0.01	ppm max.

Cat No.	Package	Size
SM1301-G500ML	Amber Glass bottle	500 ML
SM1301-G1L	Amber Glass bottle	1 L
SM1301-G2.5L	Amber Glass bottle	2.5 L
SM1301-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1301-G4L	Amber Glass bottle	4 L
SM1301-P4L	Plastic bottle	4 L
SM1301-P20L	Plastic drum	20 L
SM1301-P200L	Plastic drum	200 L

Hydrochloric Acid 37%, Electropure

EP1107

HCl	FW. 36.46	Melting Point	-30 °C
CAS-No.	7647-01-0	Boiling Point	51 °C
Density 1 L	1.19 Kg.		

Specifications

Assay (by acidimetry)	36.5 - 38.0%	
Appearance	Passes test	
Color (APHA)	10	max.
Residue after Ignition	5	ppm max.
Free Chlorine (Cl)	0.5	ppm max.
Ammonium (NH_4)	2	ppm max.
Bromide (Br)	10	ppm max.
Phosphate (PO_4)	0.2	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Sulfite (SO_3)	1	ppm max.
Aluminium (Al)	0.05	ppm max.
Antimony (Sb)	0.01	ppm max.
Arsenic (As)	0.01	ppm max.
Barium (Ba)	0.05	ppm max.
Beryllium (Be)	0.01	ppm max.
Bismuth (Bi)	0.05	ppm max.
Boron (B)	0.05	ppm max.
Cadmium (Cd)	0.02	ppm max.
Calcium (Ca)	0.5	ppm max.
Chromium (Cr)	0.05	ppm max.
Cobalt (Co)	0.01	ppm max.
Copper (Cu)	0.05	ppm max.

Gallium (Ga)	0.02	ppm max.
Gold (Au)	0.05	ppm max.
Indium (In)	0.02	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.02	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.02	ppm max.
Molybdenum (Mo)	0.05	ppm max.
Nickel (Ni)	0.02	ppm max.
Platinum (Pt)	0.1	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.3	ppm max.
Strontium (Sr)	0.05	ppm max.
Thallium (Tl)	0.01	ppm max.
Tin (Sn)	0.05	ppm max.
Titanium (Ti)	0.1	ppm max.
Vanadium (V)	0.05	ppm max.
Zinc (Zn)	0.1	ppm max.
Zirconium (Zr)	0.05	ppm max.

Cat No.	Package	Size
EP1107-G500ML	Amber Glass bottle	500 ML
EP1107-G1L	Amber Glass bottle	1 L
EP1107-G2.5L	Amber Glass bottle	2.5 L
EP1107-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1107-G4L	Amber Glass bottle	4 L
EP1107-P4L	Plastic bottle	4 L
EP1107-P20L	Plastic drum	20 L
EP1107-P200L	Plastic drum	200 L

Hydrochloric Acid 37%, Semig

SM1107

HCl	FW. 36.46	Melting Point	-30 °C
CAS-No.	7647-01-0	Boiling Point	51 °C
Density 1 L	1.19 Kg.		

Specifications

Assay (by acidimetry)	36.5-38.0%	
Appearance	Passes test	
Color (APHA)	10	max.
Residue after Ignition	3	ppm max.
Ammonium (NH_4)	1	ppm max.
Free Chlorine (Cl)	1	ppm max.
Bromide (Br)	10	min.
Phosphate (PO_4)	0.05	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Sulfite (SO_3)	0.8	ppm max.
Extractable Organic Substance	5	ppm max.
Heavy metals (as Pb)	0.1	ppm max.
Aluminium (Al)	0.3	ppm max.
Antimony (Sb)	0.005	ppm max.
Arsenic (As)	0.005	ppm max.

Boron (B)	0.1	ppm max.
Calcium (Ca)	0.3	ppm max.
Chromium (Cr)	0.1	ppm max.
Copper (Cu)	0.05	ppm max.
Gold (Au)	0.3	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.1	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.3	ppm max.
Nickel (Ni)	0.03	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.3	ppm max.
Titanium (Ti)	0.1	ppm max.
Zinc (Zn)	0.1	ppm max.

Cat No.	Package	Size
SM1107-G500ML	Amber Glass bottle	500 ML
SM1107-G1L	Amber Glass bottle	1 L
SM1107-G2.5L	Amber Glass bottle	2.5 L
SM1107-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1107-G4L	Amber Glass bottle	4 L
SM1107-P4L	Plastic bottle	4 L
SM1107-P20L	Plastic drum	20 L
SM1107-P200L	Plastic drum	200 L

Hydrochloric Acid 37%, VLSI

VL1107

HCl	FW. 36.46	Melting Point	-30 °C
CAS-No.	7647-01-0	Boiling Point	51 °C
Density 1 L	1.19 Kg.		

Specifications

Assay (by acidimetry)	36.5 - 38.0%	
Appearance	Passes test	
Color (APHA)	10	max.
Residue after Ignition	2	ppm max.
Ammonium (NH_4)	1	ppm max.
Free Chlorine (Cl)	0.5	ppm max.
Bromide (Br)	10	ppm max.
Phosphate (PO_4)	0.05	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Sulfite (SO_3)	0.5	ppm max.
Aluminium (Al)	20	ppb max.
Antimony (Sb)	1	ppb max.
Arsenic (As)	1	ppb max.
Barium (Ba)	5	ppb max.
Beryllium (Be)	1	ppb max.
Bismuth (Bi)	5	ppb max.
Boron (B)	10	ppb max.
Cadmium (Cd)	1	ppb max.
Calcium (Ca)	50	ppb max.
Chromium (Cr)	1	ppb max.
Cobalt (Co)	1	ppb max.
Copper (Cu)	1	ppb max.
Gallium (Ga)	1	ppb max.
Germanium (Ge)	5	ppb max.

Gold (Au)		1	ppb max.
Indium (In)		1	ppb max.
Iron (Fe)		50	ppb max.
Lead (Pb)		5	ppb max.
Lithium (Li)		1	ppb max.
Magnesium (Mg)		20	ppb max.
Manganese (Mn)		5	ppb max.
Molybdenum (Mo)		1	ppb max.
Nickel (Ni)		1	ppb max.
Platinum (Pt)		1	ppb max.
Potassium (K)		20	ppb max.
Silver (Ag)		5	ppb max.
Sodium (Na)		50	ppb max.
Strontium (Sr)		1	ppb max.
Thallium (Tl)		1	ppb max.
Tin (Sn)		5	ppb max.
Titanium (Ti)		10	ppb max.
Vanadium (V)		10	ppb max.
Zinc (Zn)		20	ppb max.
Zirconium (Zr)		1	ppb max.
Particle/ml			
	0.5 µm and greater	250	max.
	1.0 µm and greater	10	max.

Cat No.	Package	Size
VL1107 -G2.5L	Amber Glass bottle	2.5 L
VL1107 -P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
VL1107 -G4L	Amber Glass bottle	4 L
VL1107 -P4L	Plastic bottle	4 L

Hydrochloric Acid 6%, Semig

SM1415

HCl	FW. 36.46
CAS-No.	7647-01-0
Density 1 L	1.03 Kg.

Specifications

Assay (by acidimetry)	6%	min.
Appearance	Passes test	
Color (APHA)	10	max.
Residue after Ignition	3	ppm max.
Ammonium (NH_4)	0.5	ppm max.
Free Chlorine (Cl)	0.5	ppm max.
Bromide (Br)	5	ppm max.
Phosphate (PO_4)	0.05	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Sulfite (SO_3)	0.5	ppm max.
Extractable Organic Substance	5	ppm max.
Heavy metals (as Pb)	0.1	ppm max.
Aluminium (Al)	0.2	ppm max.
Antimony (Sb)	0.005	ppm max.
Arsenic (As)	0.005	ppm max.

Boron (B)	0.1	ppm max.
Calcium (Ca)	0.2	ppm max.
Chromium (Cr)	0.1	ppm max.
Copper (Cu)	0.05	ppm max.
Gold (Au)	0.2	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.005	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.2	ppm max.
Nickel (Ni)	0.03	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.1	ppm max.
Zinc (Zn)	0.01	ppm max.

Cat No.	Package	Size
SM1415-G500ML	Amber Glass bottle	ppm max.
SM1415-G1L	Amber Glass bottle	ppm max.
SM1415-G2.5L	Amber Glass bottle	ppm max.
SM1415-P2.5L	Plastic bottle	ppm max.

Cat No.	Package	Size
SM1415-G4L	Amber Glass bottle	4 L
SM1415-P4L	Plastic bottle	4 L
SM1415-P20L	Plastic drum	20 L
SM1415-P200L	Plastic drum	200 L

Hydrofluoric Acid 49%, Electropure

EP1337

HF	FW. 20.01	Melting Point	-36 °C
CAS-No.	7664-39-3	Boiling Point	106 °C
Density 1 L	1.15 Kg.		

Specifications

Assay	48.5 - 49.5%	
Color (APHA)	10	max.
Fluosilicic acid(H_2SiF_6)	50	ppm max.
Residue after Ignition	5	ppm max.
Chloride (Cl)	5	ppm max.
Nitrate (NO_3)	3	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Sulfate and Sulfite (as SO_4)	1	ppm max.
Heavy metals (as Pb)	100	ppb max.
Aluminium (Al)	50	ppb max.
Arsenic and Antimony (as As)	10	ppb max.
Barium (Ba)	10	ppb max.
Beryllium (Be)	10	ppb max.
Bismuth (Bi)	20	ppb max.
Boron (B)	10	ppb max.
Cadmium (Cd)	10	ppb max.
Calcium (Ca)	100	ppb max.
Chromium (Cr)	10	ppb max.
Cobalt (Co)	10	ppb max.
Copper (Cu)	10	ppb max.
Gallium (Ga)	10	ppb max.
Germanium (Ge)	20	ppb max.
Gold (Au)	10	ppb max.

Iron (Fe)	100	ppb max.
Lead (Pb)	10	ppb max.
Lithium (Li)	10	ppb max.
Magnesium (Mg)	100	ppb max.
Manganese (Mn)	10	ppb max.
Molybdenum (Mo)	10	ppb max.
Nickel (Ni)	10	ppb max.
Niobium (Nb)	10	ppb max.
Potassium (K)	20	ppb max.
Silicon (Si)	1000	ppb max.
Silver (Ag)	10	ppb max.
Sodium (Na)	50	ppb max.
Strontium (Sr)	10	ppb max.
Tantalum (Ta)	10	ppb max.
Thallium (Tl)	10	ppb max.
Tin (Sn)	20	ppb max.
Titanium (Ti)	50	ppb max.
Vanadium (V)	10	ppb max.
Zinc (Zn)	20	ppb max.
Zirconium (Zr)	10	ppb max.
Particle/ml		
0.5 µm and greater	100	max.

Cat No.	Package	Size
EP1337-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1337-P4L	Plastic bottle bottle	4 L

Methanol, Electropure

EP1115

CH_3OH	FW. 32.04	Melting Point	-98°C
CAS-No.	67-56-1	Boiling Point	64.5 °C
Density 1 L	0.790 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.3	max.
Alkalinity (µEq./g.)	0.5	max.
Residue on Evaporation	5	ppm max.
Solubility in Water	Passes test	
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.1	ppm max.
Heavy metals (as Pb)	100	ppb max.
Aluminium (Al)	50	ppb max.
Arsenic and Antimony (as As)	10	ppb max.
Barium (Ba)	20	ppb max.
Boron (B)	20	ppb max.
Cadmium (Cd)	20	ppb max.
Calcium (Ca)	50	ppb max.
Chromium (Cr)	10	ppb max.
Cobalt (Co)	20	ppb max.

Copper (Cu)	10	ppb max.
Gallium (Ga)	50	ppb max.
Germanium (Ge)	50	ppb max.
Gold (Au)	20	ppb max.
Iron (Fe)	20	ppb max.
Lead (Pb)	20	ppb max.
Lithium (Li)	50	ppb max.
Magnesium (Mg)	20	ppb max.
Manganese (Mn)	10	ppb max.
Nickel (Ni)	10	ppb max.
Potassium (K)	50	ppb max.
Silicon (Si)	50	ppb max.
Silver (Ag)	20	ppb max.
Sodium (Na)	50	ppb max.
Strontium (Sr)	20	ppb max.
Tin (Sn)	50	ppb max.
Titanium (Ti)	20	ppb max.
Zinc (Zn)	50	ppb max.

Cat No.	Package	Size
EP1115-G500ML	Amber Glass bottle	500 ML
EP1115-G1L	Amber Glass bottle	1 L
EP1115-G2.5L	Amber Glass bottle	2.5 L
EP1115-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1115-G4L	Amber Glass bottle	4 L
EP1115-P4L	Plastic bottle	4 L
EP1115-P20L	Plastic drum	20 L
EP1115-P200L	Plastic drum	200 L

Methanol, Extropure

XP1115

CH_3OH FW. 32.04

CAS-No. 67-56-1

Density 1 L 0.790 Kg.

Melting Point -98 °C

Boiling Point 64.5 °C

Specifications

Assay (by GC.)	99.9%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.3	max.
Alkalinity (µEq./g.)	0.5	max.
Solubility in water	Passes test	
Residue on Evaporation	5	ppm max.
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.1	ppm max.
Heavy metals (as Pb)	100	ppb max.
Aluminium (Al)	50	ppb max.
Arsenic and Antimony (as As)	10	ppb max.
Barium (Ba)	20	ppb max.
Boron (B)	20	ppb max.
Cadmium (Cd)	20	ppb max.
Calcium (Ca)	50	ppb max.
Chromium (Cr)	20	ppb max.
Cobalt (Co)	20	ppb max.
Copper (Cu)	10	ppb max.
Gallium (Ga)	50	ppb max.

Germanium (Ge)	50	ppb max.
Gold (Au)	20	ppb max.
Iron (Fe)	20	ppb max.
Lead (Pb)	20	ppb max.
Lithium (Li)	50	ppb max.
Magnesium (Mg)	20	ppb max.
Manganese (Mn)	10	ppb max.
Nickel (Ni)	10	ppb max.
Potassium (K)	50	ppb max.
Silicon (Si)	50	ppb max.
Silver (Ag)	20	ppb max.
Sodium (Na)	50	ppb max.
Strontium (Sr)	20	ppb max.
Tin (Sn)	50	ppb max.
Titanium (Ti)	20	ppb max.
Zinc (Zn)	50	ppb max.
Silicone oil	Free	
DOP	Free	
Amide	Free	

Cat No.	Package	Size
XP1115-G500ML	Amber Glass bottle	500 ML
XP1115-G1L	Amber Glass bottle	1 L
XP1115-G2.5L	Amber Glass bottle	2.5 L
XP1115-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
XP1115-G4L	Amber Glass bottle	4 L
XP1115-P4L	Plastic bottle	4 L
XP1115-P200L	Plastic drum	200 L

Methanol, Semig

SM1115

CH_3OH FW. 32.04

CAS-No. 67-56-1

Density 1 L 0.790 Kg.

Melting Point -98 °C

Boiling Point 64.5 °C

Specifications

Assay (by GC.)	99.9%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.3	max.
Alkalinity (µEq./g.)	0.1	max.
Carbonyl Compounds	0.003%	max.
Solubility in water	Passes test	
Residue on Evaporation	5	ppm max.
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Heavy metals (as Pb)	0.5	ppm max.
Aluminium (Al)	0.1	ppm max.
Arsenic and Antimony (as As)	0.01	ppm max.
Boron (B)	0.1	ppm max.
Calcium (Ca)	0.1	ppm max.

Chromium (Cr)	0.1	ppm max.
Copper (Cu)	0.1	ppm max.
Gallium (Ga)	0.1	ppm max.
Gold (Au)	0.1	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.1	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.1	ppm max.
Nickel (Ni)	0.1	ppm max.
Potassium (K)	0.1	ppm max.
Sodium (Na)	0.1	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.1	ppm max.
Zinc (Zn)	0.1	ppm max.

Cat No.	Package	Size
SM1115-G500ML	Amber Glass bottle	500 ML
SM1115-G1L	Amber Glass bottle	1 L
SM1115-G2.5L	Amber Glass bottle	2.5 L
SM1115-P2.5L	Plastic bottle	2.5 L
SM1115-G4L	Amber Glass bottle	4 L

Cat No.	Package	Size
SM1115-P4L	Plastic bottle	4 L
SM1115-P20L	Plastic drum	20 L
SM1115-P200L	Plastic drum	200 L
SM1115-M200L	Metal drum	200 L

Methanol, VLSI

VL1115

CH_3OH	FW. 32.04	Melting Point	-98 °C
CAS-No.	67-56-1	Boiling Point	64.5 °C
Density 1 L	0.790 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.3	max.
Alkalinity (µEq./g.)	0.5	max.
Solubility in Water	Passes test	
Residue on Evaporation	3	ppm max.
Chloride (Cl)	0.1	ppm max.
Phosphate (PO_4)	0.1	ppm max.
Heavy metals (as Pb)	0.1	ppm max.
Aluminium (Al)	20	ppb max.
Arsenic and Antimony (as As)	10	ppb max.
Barium (Ba)	20	ppb max.
Boron (B)	20	ppb max.
Cadmium (Cd)	20	ppb max.
Calcium (Ca)	50	ppb max.
Chromium (Cr)	20	ppb max.
Cobalt (Co)	20	ppb max.
Copper (Cu)	10	ppb max.
Gallium (Ga)	20	ppb max.

Germanium (Ge)		20	ppb max.
Gold (Au)		10	ppb max.
Iron (Fe)		20	ppb max.
Lead (Pb)		20	ppb max.
Lithium (Li)		20	ppb max.
Magnesium (Mg)		20	ppb max.
Manganese (Mn)		10	ppb max.
Nickel (Ni)		10	ppb max.
Potassium (K)		20	ppb max.
Silicon (Si)		50	ppb max.
Silver (Ag)		20	ppb max.
Sodium (Na)		50	ppb max.
Strontium (Sr)		20	ppb max.
Tin (Sn)		20	ppb max.
Titanium (Ti)		20	ppb max.
Zinc (Zn)		50	ppb max.
Zirconium (Zr)		20	ppb max.
Particle/ml :			
	0.5 µm and greater	30	max.
	1.0 µm and greater	8	max.

Cat No.	Package	Size
VL1115-G2.5L	Amber Glass bottle	2.5 L
VL1115-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
VL1115-G4L	Amber Glass bottle	4 L
VL1115-P4L	Plastic bottle	4 L

Methyl ethyl ketone, Electropure

EP1122

$C_2H_5COCH_3$	FW. 72.11	Melting Point	-86 °C
CAS-No.	78-93-3	Boiling Point	79.6 °C
Density 1 L	0.805 Kg.		

Specifications

Assay (by GC.)	99.5%	min.
Water (by Coulometry)	0.05%	max.
Specific resistance (MΩ.cm)	10	min.
Free acid (as CH_3COOH)	20	ppm max.
Residue on Evaporation	5	ppm max.
Heavy metals (as Pb)	0.2	ppm max.
Aluminium (Al)	0.2	ppm max.
Antimony (Sb)	0.01	ppm max.
Arsenic (As)	0.01	ppm max.
Barium (Ba)	0.1	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.1	ppm max.
Boron (B)	0.01	ppm max.
Cadmium (Cd)	0.05	ppm max.
Calcium (Ca)	0.5	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.02	ppm max.
Gallium (Ga)	0.02	ppm max.
Gold (Au)	0.1	ppm max.

Indium (In)	0.02	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.05	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.02	ppm max.
Molybdenum (Mo)	0.05	ppm max.
Nickel (Ni)	0.02	ppm max.
Platinum (Pt)	0.2	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.5	ppm max.
Strontium (Sr)	0.02	ppm max.
Thallium (Tl)	0.05	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.1	ppm max.
Vanadium (V)	0.05	ppm max.
Zinc (Zn)	0.1	ppm max.
Zirconium (Zr)	0.2	ppm max.

Cat No.	Package	Size
EP1122-G500ML	Amber Glass bottle	500 ML
EP1122-G1L	Amber Glass bottle	1 L
EP1122-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
EP1122-G4L	Amber Glass bottle	4 L
EP1122-M20L	Metal drum	20 L
EP1122-M200L	Metal drum	200 L

Methyl ethyl ketone, Extropure

XP1122

$C_2H_5COCH_3$	FW. 72.11	Melting Point	-86 °C
CAS-No.	78-93-3	Boiling Point	79.6 °C
Density 1 L	0.805 Kg.		

Specifications

Assay (by GC.)	99.5%	min.
Identity (IR)	Passes test	
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.5	max.
Alkalinity (µEq./g.)	0.5	max.
Alcohol, ether and benzene miscibility	Complete	
Water Soluble Matter	Passes test	
Residue on Evaporation	5	ppm max.
Aldehyde (Formaldehyde)	20	ppm max.
Substances reducing permanganate (as O)	2	ppm max.
Heavy metals (as Pb)	1	ppm max.
Aluminium (Al)	100	ppb max.
Barium (Ba)	50	ppb max.
Boron (B)	20	ppb max.
Cadmium (Cd)	50	ppb max.

Calcium (Ca)	100	ppb max.
Chromium (Cr)	20	ppb max.
Cobalt (Co)	20	ppb max.
Copper (Cu)	20	ppb max.
Iron (Fe)	100	ppb max.
Lead (Pb)	100	ppb max.
Magnesium (Mg)	100	ppb max.
Manganese (Mn)	20	ppb max.
Nickel (Ni)	20	ppb max.
Tin (Sn)	100	ppb max.
Zinc (Zn)	100	ppb max.
Silicone oil	Free	
DOP	Free	
Amide	Free	

Cat No.	Package	Size
XP1122-G500ML	Amber Glass bottle	500 ML
XP1122-G1L	Amber Glass bottle	1 L
XP1122-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
XP1122-G4L	Amber Glass bottle	4 L
XP1122-M200L	Metal drum	200 L

n-Butyl acetate, Electropure

EP1025

$CH_3COO(CH_2)_3CH_3$	FW. 116.16	Melting Point	-76 °C
CAS-No.	123-86-4	Boiling Point	126 °C
Density 1 L	0.880 Kg.		

Specifications

Assay (by GC.)	99.5%	min.
Identity	Corresponds to IR spectrum	
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.5	max.
Specific resistance (MΩ.cm)	5	min.
Residue on Evaporation	10	ppm max.
n-Butanol (GC.)	0.8%	max.
n-Butyl formate (GC.)	0.5%	max.
n-Butyl propionate (GC.)	0.5%	max.
Heavy metals (as Pb)	0.2	ppm max.
Aluminium (Al)	0.2	ppm max.
Antimony (Sb)	0.01	ppm max.
Arsenic (As)	0.01	ppm max.
Barium (Ba)	0.1	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.1	ppm max.
Boron (B)	0.01	ppm max.
Cadmium (Cd)	0.05	ppm max.
Calcium (Ca)	0.5	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.02	ppm max.

Gallium (Ga)	0.02	ppm max.
Gold (Au)	0.1	ppm max.
Indium (In)	0.02	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.05	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.02	ppm max.
Molybdenum (Mo)	0.05	ppm max.
Nickel (Ni)	0.02	ppm max.
Platinum (Pt)	0.2	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.5	ppm max.
Strontium (Sr)	0.02	ppm max.
Thallium (Tl)	0.05	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.1	ppm max.
Vanadium (V)	0.05	ppm max.
Zinc (Zn)	0.1	ppm max.
Zirconium (Zr)	0.2	ppm max.

Cat No.	Package	Size
EP1025-G500ML	Amber Glass bottle	500 ML
EP1025-G1L	Amber Glass bottle	1 L
EP1025-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
EP1025-G4L	Amber Glass bottle	4 L
EP1025-M20L	Metal drum	20 L
EP1025-M200L	Metal drum	200 L

n-Butyl Acetate, VLSI

VL1025

$CH_3COO(CH_2)_3CH_3$ FW. 116.16

CAS-No. 123-86-4

Density 1 L 0.880 Kg.

Melting Point -76 °C

Boiling Point 126 °C

Specifications

Assay (by GC.)	99.5%	min.
Identity	Corresponds to IR spectrum	
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.5	max.
Specific resistance (MΩ.cm)	5	min.
Residue on Evaporation	10	ppm max.
n-Butanol (GC.)	0.5%	max.
n-Butyl formate (GC.)	0.2%	max.
n-Butyl propionate (GC.)	0.2%	max.
Heavy metals (as Pb)	0.1	ppm max.
Aluminium (Al)	50	ppb max.
Antimony (Sb)	10	ppb max.
Arsenic (As)	10	ppb max.
Barium (Ba)	20	ppb max.
Beryllium (Be)	10	ppb max.
Bismuth (Bi)	20	ppb max.
Boron (B)	10	ppb max.
Cadmium (Cd)	10	ppb max.
Calcium (Ca)	100	ppb max.
Chromium (Cr)	10	ppb max.
Cobalt (Co)	10	ppb max.
Copper (Cu)	10	ppb max.
Gallium (Ga)	10	ppb max.

Gold (Au)	20	ppb max.
Indium (In)	10	ppb max.
Iron (Fe)	20	ppb max.
Lead (Pb)	10	ppb max.
Lithium (Li)	10	ppb max.
Magnesium (Mg)	20	ppb max.
Manganese (Mn)	10	ppb max.
Molybdenum (Mo)	10	ppb max.
Nickel (Ni)	10	ppb max.
Platinum (Pt)	50	ppb max.
Potassium (K)	20	ppb max.
Silver (Ag)	10	ppb max.
Sodium (Na)	100	ppb max.
Strontium (Sr)	10	ppb max.
Thallium (Tl)	10	ppb max.
Tin (Sn)	20	ppb max.
Titanium (Ti)	20	ppb max.
Vanadium (V)	10	ppb max.
Zinc (Zn)	20	ppb max.
Zirconium (Zr)	20	ppb max.
Particle/ml :	8	
0.5 µm and greater	30	max.
1.0 µm and greater	8	max.

Product passed through 1 micron final filter.

Cat No.	Package	Size
VL1025-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
VL1025-G4L	Amber Glass bottle	4 L

Nitric Acid 65%, Low Mercury

EP1134

HNO_3 FW. 63.01

CAS-No. 7697-37-2

Density 1 L 1.39 Kg.

Melting Point -29.1 °C

Boiling Point 119.6 °C

Specifications

Assay (by acidimetry)	65.0%	min.
Mercury (Hg)	0.0000003%	max.
Appearance	Passes test	
Color (APHA)	10	max.
Residue after Ignition	2	ppm max.
Chloride (Cl)	0.08	ppm max.
Phosphate (PO_4)	0.2	ppm max.
Sulfate (SO_4)	0.1	ppm max.
Heavy metals (as Pb)	0.1	ppm max.
Aluminium (Al)	0.01	ppm max.
Antimony (Sb)	0.005	ppm max.
Arsenic (As)	0.005	ppm max.
Barium (Ba)	0.005	ppm max.
Beryllium (Be)	0.001	ppm max.
Bismuth (Bi)	0.005	ppm max.
Boron (B)	0.005	ppm max.
Cadmium (Cd)	0.001	ppm max.
Calcium (Ca)	0.05	ppm max.
Chromium (Cr)	0.005	ppm max.
Cobalt (Co)	0.001	ppm max.
Copper (Cu)	0.001	ppm max.
Gallium (Ga)	0.001	ppm max.

Germanium (Ge)	0.005	ppm max.
Gold (Au)	0.005	ppm max.
Indium (In)	0.001	ppm max.
Iron (Fe)	0.08	ppm max.
Lead (Pb)	0.005	ppm max.
Lithium (Li)	0.001	ppm max.
Magnesium (Mg)	0.01	ppm max.
Manganese (Mn)	0.001	ppm max.
Molybdenum (Mo)	0.001	ppm max.
Nickel (Ni)	0.005	ppm max.
Platinum (Pt)	0.001	ppm max.
Potassium (K)	0.005	ppm max.
Silver (Ag)	0.001	ppm max.
Sodium (Na)	0.05	ppm max.
Strontium (Sr)	0.001	ppm max.
Tantalum (Ta)	0.002	ppm max.
Thallium (Tl)	0.001	ppm max.
Tin (Sn)	0.002	ppm max.
Titanium (Ti)	0.001	ppm max.
Vanadium (V)	0.001	ppm max.
Zinc (Zn)	0.01	ppm max.
Zirconium (Zr)	0.001	ppm max.

Cat No.	Package	Size
EP1134-G500ML	Amber Glass bottle	500 ML
EP1134-G1L	Amber Glass bottle	1 L
EP1134-G2.5L	Amber Glass bottle	2.5 L
EP1134-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1134-G4L	Amber Glass bottle	4 L
EP1134-P4L	Plastic bottle	4 L
EP1134-P20L	Plastic drum	20 L
EP1134-P200L	Plastic drum	200 L

Nitric Acid 65%, Semig

SM1133

HNO_3	FW. 63.01	Melting Point	-29.1 °C
CAS-No.	7697-37-2	Boiling Point	119.6 °C
Density 1 L	1.39 Kg.		

Specifications

Assay (by acidimetry)	65.0%	min.
Color (APHA)	10	max.
Chloride (Cl)	0.08	ppm max.
Phosphate (PO_4)	0.2	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Aluminium (Al)	0.2	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Boron (B)	0.1	ppm max.
Calcium (Ca)	0.2	ppm max.
Chromium (Cr)	0.1	ppm max.
Copper (Cu)	0.05	ppm max.

Gold (Au)	0.3	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.1	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.2	ppm max.
Nickel (Ni)	0.05	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.3	ppm max.
Titanium (Ti)	0.3	ppm max.
Zinc (Zn)	0.3	ppm max.

Cat No.	Package	Size
SM1133-G500ML	Amber Glass bottle	500 ML
SM1133-G1L	Amber Glass bottle	1 L
SM1133-G2.5L	Amber Glass bottle	2.5 L
SM1133-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1133-G4L	Amber Glass bottle	4 L
SM1133-P4L	Plastic bottle	4 L
SM1133-P20L	Plastic drum	20 L
SM1133-P200L	Plastic drum	200 L

Nitric Acid 70%, Electropure

EP1137

HNO_3	FW. 63.01	Melting Point	-41 °C
CAS-No.	7697-37-2	Boiling Point	119.9 °C
Density 1 L	1.41 Kg.		

Specifications

Assay (by acidimetry)	69.0 – 70.0%	min.
Appearance	Passes test	
Color (APHA)	10	max.
Residue after Ignition	2	max.
Chloride (Cl)	0.1	ppm max.
Phosphate (PO_4)	0.2	ppm max.
Sulfate (SO_4)	0.2	ppm max.
Heavy metals (as Pb)	0.1	ppm max.
Aluminium (Al)	0.05	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Barium (Ba)	0.05	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.05	ppm max.
Boron (B)	0.05	ppm max.
Cadmium (Cd)	0.05	ppm max.
Calcium (Ca)	0.1	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.01	ppm max.
Gallium (Ga)	0.02	ppm max.
Germanium (Ge)	0.1	ppm max.

Gold (Au)	0.05	ppm max.
Indium (In)	0.02	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.05	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.05	ppm max.
Manganese (Mn)	0.02	ppm max.
Molybdenum (Mo)	0.05	ppm max.
Nickel (Ni)	0.02	ppm max.
Platinum (Pt)	0.2	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.2	ppm max.
Strontium (Sr)	0.05	ppm max.
Thallium (Tl)	0.05	ppm max.
Tin (Sn)	0.05	ppm max.
Titanium (Ti)	0.05	ppm max.
Vanadium (V)	0.05	ppm max.
Zinc (Zn)	0.05	ppm max.
Zirconium (Zr)	0.05	ppm max.

Cat No.	Package	Size
EP1137 -G500ML	Amber Glass bottle	500 ML
EP1137 -G1L	Amber Glass bottle	1 L
EP1137 -G2.5L	Amber Glass bottle	2.5 L
EP1137 -P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1137 -G4L	Amber Glass bottle	4 L
EP1137 -P4L	Plastic bottle	4 L
EP1137 -P20L	Plastic drum	20 L
EP1137 -P200L	Plastic drum	200 L

Nitric Acid 70%, Semig

SM1137

HNO_3	FW. 63.01	Melting Point	-41 °C
CAS-No.	7697-37-2	Boiling Point	119.9 °C
Density 1 L	1.41 Kg.		

Specifications

Assay (by acidimetry)	69.0 – 70.0%	
Color (APHA)	10	max.
Chloride (Cl)	0.08	ppm max.
Phosphate (PO_4)	0.2	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Aluminium (Al)	0.2	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Boron (B)	0.1	ppm max.
Calcium (Ca)	0.2	ppm max.
Chromium (Cr)	0.1	ppm max.
Copper (Cu)	0.05	ppm max.

Gold (Au)	0.3	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.1	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.2	ppm max.
Nickel (Ni)	0.05	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.3	ppm max.
Titanium (Ti)	0.3	ppm max.
Zinc (Zn)	0.3	ppm max.

Cat No.	Package	Size
SM1137-G500ML	Amber Glass bottle	500 ML
SM1137-G1L	Amber Glass bottle	1 L
SM1137-G2.5L	Amber Glass bottle	2.5 L
SM1137-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1137-G4L	Amber Glass bottle	4 L
SM1137-P4L	Plastic bottle	4 L
SM1137-P20L	Plastic drum	20 L
SM1137-P200L	Plastic drum	200 L

Nitric Acid 70%, Semig Plus

SM1136

HNO_3	FW. 63.01	Melting Point	-41 °C
CAS-No.	7697-37-2	Boiling Point	119.9 °C
Density 1 L	1.41 Kg.		

Specifications

Assay (by acidimetry)	69.0 - 70.0%	
Appearance	Passes test	
Color (APHA)	10	max.
Residue after Ignition	2	ppm max.
Chloride (Cl)	0.8	ppm max.
Phosphate (PO_4)	0.2	ppm max.
Sulfate (SO_4)	0.5	ppm max.
Heavy metals (as Pb)	0.1	ppm max.
Aluminium (Al)	0.2	ppm max.
Arsenic (As)	0.005	ppm max.
Antimony (Sb)	0.005	ppm max.
Boron (B)	0.01	ppm max.
Calcium (Ca)	0.2	ppm max.

Chromium (Cr)	0.03	ppm max.
Copper (Cu)	0.02	ppm max.
Gold (Au)	0.02	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.1	ppm max.
Magnesium (Mg)	0.02	ppm max.
Manganese (Mn)	0.01	ppm max.
Nickel (Ni)	0.02	ppm max.
Potassium (K)	0.05	ppm max.
Sodium (Na)	0.2	ppm max.
Tin (Sn)	0.02	ppm max.
Titanium (Ti)	0.01	ppm max.
Zinc (Zn)	0.03	ppm max.

Cat No.	Package	Size
SM1136-G500ML	Amber Glass bottle	500 ML
SM1136-G1L	Amber Glass bottle	1 L
SM1136-G2.5L	Amber Glass bottle	2.5 L
SM1136-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1136-G4L	Amber Glass bottle	4 L
SM1136-P4L	Plastic bottle	4 L
SM1136-P20L	Plastic drum	20 L
SM1136-P200L	Plastic drum	200 L

Nitric Acid 70%, VLSI

VL1137

HNO_3	FW. 63.01	Melting Point	-41 °C
CAS-No.	7697-37-2	Boiling Point	119.9 °C
Density 1 L	1.41 Kg.		

Specifications

Assay (by acidimetry)	69.0 – 70.0%	
Appearance	Passes test	
Color (APHA)	7	max.
Residue after Ignition	1	ppm max.
Chloride (Cl)	0.08	ppm max.
Phosphate (PO_4)	0.1	ppm max.
Sulfate (SO_4)	0.2	ppm max.
Silicate (as Si)	0.1	ppm max.
Aluminium (Al)	20	ppb max.
Antimony (Sb)	1	ppb max.
Arsenic (As)	1	ppb max.
Barium (Ba)	5	ppb max.
Beryllium (Be)	1	ppb max.
Bismuth (Bi)	5	ppb max.
Boron (B)	5	ppb max.
Cadmium (Cd)	1	ppb max.
Calcium (Ca)	50	ppb max.
Chromium (Cr)	10	ppb max.
Cobalt (Co)	1	ppb max.
Copper (Cu)	5	ppb max.
Gallium (Ga)	1	ppb max.
Germanium (Ge)	5	ppb max.
Gold (Au)	1	ppb max.

Indium (In)	1	ppb max.
Iron (Fe)	50	ppb max.
Lead (Pb)	5	ppb max.
Lithium (Li)	1	ppb max.
Magnesium (Mg)	10	ppb max.
Manganese (Mn)	5	ppb max.
Molybdenum (Mo)	1	ppb max.
Nickel (Ni)	5	ppb max.
Platinum (Pt)	1	ppb max.
Potassium (K)	5	ppb max.
Silver (Ag)	5	ppb max.
Sodium (Na)	50	ppb max.
Strontium (Sr)	1	ppb max.
Tantalum (Ta)	1	ppb max.
Thallium (Tl)	1	ppb max.
Tin (Sn)	1	ppb max.
Titanium (Ti)	5	ppb max.
Vanadium (V)	5	ppb max.
Zinc (Zn)	10	ppm max.
Zirconium (Zr)	1	ppb max.
Particle/ml :		
0.5 µm and greater	64	max.

Cat No.	Package	Size
VL1137-G500ML	Amber Glass bottle	500 ML
VL1137-G1L	Amber Glass bottle	1 L

Cat No.	Package	Size
VL1137-G2.5L	Amber Glass bottle	2.5 L
VL1137-G4L	Amber Glass bottle	4 L

Nitric Acid 95% Fuming, Semig

SM1139

HNO_3	FW. 63.01	Melting Point	-49.5°C
CAS-No.	7697-37-2	Boiling Point	87.1 °C
Density 1 L	1.49 Kg.		

Specifications

Assay (by acidimetry)	95%	min.
Residue after Ignition	0.002%	max.
Chloride (Cl)	0.5	ppm max.
Sulfate (SO_4)	2	ppm max.
Aluminium (Al)	0.05	ppm max.
Arsenic (As)	0.02	ppm max.
Barium (Ba)	0.02	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.05	ppm max.
Calcium (Ca)	0.5	ppm max.
Cadmium (Cd)	0.02	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.02	ppm max.
Germanium (Ge)	0.02	ppm max.

Iron (Fe)	1	ppm max.
Lead (Pb)	0.03	ppm max.
Magnesium (Mg)	0.05	ppm max.
Manganese (Mn)	0.02	ppm max.
Molybdenum (Mo)	0.02	ppm max.
Nickel (Ni)	0.05	ppm max.
Potassium (K)	0.5	ppm max.
Silver (Ag)	0.05	ppm max.
Sodium (Na)	0.5	ppm max.
Strontium (Sr)	0.02	ppm max.
Titanium (Ti)	0.05	ppm max.
Thallium (Tl)	0.05	ppm max.
Vanadium (V)	0.02	ppm max.
Zinc (Zn)	0.1	ppm max.
Zirconium (Zr)	0.05	ppm max.

Cat No.	Package	Size
SM1139-G1L	Amber Glass bottle	1 L

n-Methyl-2-Pyrrolidone, Extropure Plus

XP1278

C_5H_9NO	FW. 99.13	Melting Point	-24 °C
CAS-No.	872-50-4	Boiling Point	202 °C
Density 1 L	1.030 Kg.		

Specifications

Assay (by GC.)	99.8%	min.
Color (APHA)	50	max.
Water (by Coulometry)	0.05%	max.
Acidity (mEq./g.)	0.0005	max.
Residue on Evaporation	0.001%	max.
Free amine (as CH_3NH_2)	0.01%	max.
Bromide (Br)	0.01	ppm max.
Chloride (Cl)	0.05	ppm max.
Fluoride (F)	0.01	ppm max.
Nitrate (NO_3)	0.03	ppm max.
Nitrite (NO_2)	0.03	ppm max.
Sulfate (SO_4)	0.03	ppm max.
Phosphate (PO_4)	0.01	ppm max.
pH value	8.5 - 10	
Aluminium (Al)	20	ppb max.
Barium (Ba)	10	ppb max.
Boron (B)	10	ppb max.
Cadmium (Cd)	10	ppb max.

Calcium (Ca)		100	ppb max.
Chromium (Cr)		20	ppb max.
Cobalt (Co)		10	ppb max.
Copper (Cu)		10	ppb max.
Iron (Fe)		50	ppb max.
Lead (Pb)		20	ppb max.
Magnesium (Mg)		50	ppb max.
Manganese (Mn)		10	ppb max.
Nickel (Ni)		10	ppb max.
Tin (Sn)		20	ppb max.
Zinc (Zn)		20	ppb max.
Silicone oil		Free	
DOP		Free	
Amide		Free	
Particle/ml :			
	0.5 µm and greater	60	max.
	1.0 µm and greater	15	max.

Cat No.	Package	Size
XP1278-G500ML	Amber Glass bottle	500 ML
XP1278-G1L	Amber Glass bottle	1 L
XP1278-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
XP1278-G4L	Amber Glass bottle	4 L
XP1278-M200L	Metal drum	200 L

Acetone, Electropure

EP1162

$(CH_3)_2CHOH$	FW. 60.10	Melting Point	-89.5 °C
CAS-No.	67-63-0	Boiling Point	82.4 °C
Density 1 L	0.786 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Identity	Corresponds to IR spectrum	
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.2	max.
Alkalinity (µEq./g.)	0.1	max.
Specific resistance (MΩ.cm)	10	min.
Residue on Evaporation	5	ppm max.
Aldehyde and Ketones (as propionic aldehyde)	100	ppm max.
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Solubility in Water	Passes test	
Heavy metals (as Pb)	0.2	ppm max.
Aluminium (Al)	0.1	ppm max.
Antimony (Sb)	0.01	ppm max.
Arsenic (As)	0.01	ppm max.
Barium (Ba)	0.05	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.1	ppm max.
Boron (B)	0.01	ppm max.
Cadmium (Cd)	0.02	ppm max.
Calcium (Ca)	0.1	ppm max.
Chromium (Cr)	0.02	ppm max.

Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.01	ppm max.
Gallium (Ga)	0.02	ppm max.
Gold (Au)	0.05	ppm max.
Indium (In)	0.02	ppm max.
Iron (Fe)	0.05	ppm max.
Lead (Pb)	0.05	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.05	ppm max.
Manganese (Mn)	0.02	ppm max.
Molybdenum (Mo)	0.05	ppm max.
Nickel (Ni)	0.01	ppm max.
Platinum (Pt)	0.2	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.2	ppm max.
Strontium (Sr)	0.02	ppm max.
Thallium (Tl)	0.05	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.05	ppm max.
Vanadium (V)	0.05	ppm max.
Zinc (Zn)	0.05	ppm max.
Zirconium (Zr)	0.2	ppm max.

Cat No.	Package	Size
EP1162-G500ML	Amber Glass bottle	500 ML
EP1162-G1L	Amber Glass bottle	1 L
EP1162-G2.5L	Amber Glass bottle	2.5 L
EP1162-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1162-G4L	Amber Glass bottle	4 L
EP1162-P4L	Plastic bottle	4 L
EP1162-P20L	Plastic drum	20 L
EP1162-P200L	Plastic drum	200 L

Propan-2-ol, Extroplus

XP1163

$(CH_3)_2CHOH$	FW. 60.10	Melting Point	-89.5 °C
CAS-No.	67-63-0	Boiling Point	82.4 °C
Density 1 L	0.786 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.2	max.
Alkalinity (µEq./g.)	0.1	max.
Solubility in water	Passes test	
Residue on Evaporation	3	ppm max.
All anions (Br, Cl, F, NO_2, NO_3, SO_4, PO_4)	0.2	ppm max.
Heavy metals (as Pb)	200	ppb max.
Aluminium (Al)	50	ppb max.
Arsenic and Antimony (as As)	10	ppb max.
Barium (Ba)	20	ppb max.
Boron (B)	10	ppb max.
Cadmium (Cd)	20	ppb max.
Calcium (Ca)	50	ppb max.
Chromium (Cr)	20	ppb max.
Cobalt (Co)	20	ppb max.
Copper (Cu)	10	ppb max.
Gallium (Ga)	30	ppb max.
Germanium (Ge)	30	ppb max.
Gold (Au)	20	ppb max.

Iron (Fe)		50	ppb max.
Lead (Pb)		20	ppb max.
Lithium (Li)		50	ppb max.
Magnesium (Mg)		20	ppb max.
Manganese (Mn)		20	ppb max.
Nickel (Ni)		10	ppb max.
Potassium (K)		100	ppb max.
Silicon (Si)		50	ppb max.
Silver (Ag)		20	ppb max.
Sodium (Na)		100	ppb max.
Strontium (Sr)		20	ppb max.
Tin (Sn)		100	ppb max.
Titanium (Ti)		20	ppb max.
Zinc (Zn)		50	ppb max.
Silicone oil		Free	
DOP		Free	
Amide		Free	
pH		6-7	
Particle/ml :			
	0.5 µm and greater	50	max.
	1.0 µm and greater	8	max.

Cat No.	Package	Size
XP1163-G500ML	Amber Glass bottle	500 ML
XP1163-G1L	Amber Glass bottle	1 L
XP1163-G2.5L	Amber Glass bottle	2.5 L
XP1163-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
XP1163-G4L	Amber Glass bottle	4 L
XP1163-P4L	Plastic bottle	4 L
XP1163-P200L	Plastic drum	200 L

Propan-2-ol, Extropure

XP1162

$(CH_3)_2CHOH$	FW. 60.10	Melting Point	-89.5 °C
CAS-No.	67-63-0	Boiling Point	82.4 °C
Density 1 L	0.786 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.2	max.
Alkalinity (µEq./g.)	0.1	max.
Solubility in water	Passes test	
Residue on Evaporation	3	ppm max.
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Heavy metals (as Pb)	200	ppb max.
Aluminium (Al)	50	ppb max.
Arsenic and Antimony (as As)	10	ppb max.
Barium (Ba)	20	ppb max.
Boron (B)	10	ppb max.
Cadmium (Cd)	20	ppb max.
Calcium (Ca)	50	ppb max.
Chromium (Cr)	20	ppb max.
Cobalt (Co)	20	ppb max.
Copper (Cu)	10	ppb max.
Gallium (Ga)	30	ppb max.
Germanium (Ge)	30	ppb max.

Gold (Au)		20	ppb max.
Iron (Fe)		50	ppb max.
Lead (Pb)		20	ppb max.
Lithium (Li)		50	ppb max.
Magnesium (Mg)		20	ppb max.
Manganese (Mn)		20	ppb max.
Nickel (Ni)		10	ppb max.
Potassium (K)		100	ppb max.
Silicon (Si)		50	ppb max.
Silver (Ag)		20	ppb max.
Sodium (Na)		100	ppb max.
Strontium (Sr)		20	ppb max.
Tin (Sn)		100	ppb max.
Titanium (Ti)		20	ppb max.
Zinc (Zn)		50	ppb max.
Silicone oil		Free	
DOP		Free	
Amide		Free	
Particle/ml :			
	0.5 µm and greater	50	max.
	1.0 µm and greater	8	max.

Cat No.	Package	Size
XP1162-P2.5L	Plastic bottle	2.5 L
XP1162-P4L	Plastic bottle	4 L

Cat No.	Package	Size
XP1162-P200L	Plastic drum	200 L

Propan-2-ol, Extropure Plus

XP1277

$(CH_3)_2CHOH$	FW. 60.10	Melting Point	-89.5 °C
CAS-No.	67-63-0	Boiling Point	82.4 °C
Density 1 L	0.786 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.2	max.
Alkalinity (µEq./g.)	0.1	max.
Solubility in water	Passes test	
Residue on Evaporation	3	ppm max.
Bromide (Br)	0.01	ppm max.
Chloride (Cl)	0.05	ppm max.
Fluoride (F)	0.01	ppm max.
Nitrate (NO_3)	0.03	ppm max.
Nitrite (NO_2)	0.03	ppm max.
Sulfate (SO_4)	0.03	ppm max.
Phosphate (PO_4)	0.01	ppm max.
pH Value	6 - 9	
Heavy metals (as Pb)	100	ppb max.
Aluminium (Al)	20	ppb max.
Arsenic and Antimony (as As)	10	ppb max.
Barium (Ba)	10	ppb max.
Beryllium (Be)	10	ppb max.
Bismuth (Bi)	10	ppb max.
Boron (B)	5	ppb max.
Cadmium (Cd)	5	ppb max.
Calcium (Ca)	10	ppb max.
Chromium (Cr)	5	ppb max.
Cobalt (Co)	5	ppb max.
Copper (Cu)	5	ppb max.
Gallium (Ga)	10	ppb max.

Gold (Au)	10	ppb max.
Indium (In)	10	ppb max.
Iron (Fe)	10	ppb max.
Lead (Pb)	10	ppb max.
Lithium (Li)	5	ppb max.
Magnesium (Mg)	5	ppb max.
Manganese (Mn)	5	ppb max.
Molybdenum (Mo)	10	ppb max.
Nickel (Ni)	5	ppb max.
Platinum (Pt)	20	ppb max.
Potassium (K)	10	ppb max.
Silicon (Si)	50	ppb max.
Silver (Ag)	5	ppb max.
Sodium (Na)	100	ppb max.
Strontium (Sr)	5	ppb max.
Thallium (Tl)	10	ppb max.
Tin (Sn)	10	ppb max.
Titanium (Ti)	10	ppb max.
Vanadium (V)	10	ppb max.
Zinc (Zn)	5	ppb max.
Zirconium (Zr)	10	ppb max.
Silicone oil	Free	
DOP	Free	
Amide	Free	
Particle/ml :		
0.5 µm and greater	50	max.
1.0 µm and greater	8	max.

Cat No.	Package	Size
XP1277-G500ML	Amber Glass bottle	500 ML
XP1277-G1L	Amber Glass bottle	1 L
XP1277-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
XP1277-G4L	Amber Glass bottle	4 L
XP1277-P4L	Plastic bottle	4 L
XP1277-P200L	Plastic drum	200 L

Propan-2-ol, Extropure-MS

XP1292

$(CH_3)_2CHOH$	FW. 60.10	Melting Point	-89.5 °C
CAS-No.	67-63-0	Boiling Point	82.4 °C
Density 1 L	0.786 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.2	max.
Alkalinity (µEq./g.)	0.1	max.
Solubility in water	Passes test	
Residue on Evaporation	3	ppm max.
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Heavy metals (as Pb)	200	ppm max.
Aluminium (Al)	50	ppb max.
Arsenic and Antimony (as As)	10	ppb max.
Barium (Ba)	20	ppb max.
Boron (B)	10	ppb max.
Cadmium (Cd)	20	ppb max.
Calcium (Ca)	50	ppb max.
Chromium (Cr)	20	ppb max.
Cobalt (Co)	20	ppb max.
Copper (Cu)	10	ppb max.
Gallium (Ga)	30	ppb max.
Germanium (Ge)	30	ppb max.
Gold (Au)	20	ppb max.

Iron (Fe)	50	ppb max.
Lead (Pb)	20	ppb max.
Lithium (Li)	50	ppb max.
Magnesium (Mg)	20	ppb max.
Manganese (Mn)	20	ppb max.
Nickel (Ni)	10	ppb max.
Potassium (K)	100	ppb max.
Silicon (Si)	50	ppb max.
Silver (Ag)	20	ppb max.
Sodium (Na)	100	ppb max.
Strontium (Sr)	20	ppb max.
Tin (Sn)	100	ppb max.
Titanium (Ti)	20	ppb max.
Zinc (Zn)	50	ppb max.
Hydrocarbons Content (Between C10 - C40)	Not detectable	
Silicone oil	Not detectable	
DOP	Not detectable	
Amide	Not detectable	
Particle/ml :		
0.5 µm and greater	50	max.
1.0 µm and greater	8	max.

Cat No.	Package	Size
XP1292-P2.5L	Plastic bottle	2 L

Cat No.	Package	Size
XP1292-P4L	Plastic bottle	4 L

Propan-2-ol, Semig

SM1162

$(CH_3)_2CHOH$	FW. 60.10	Melting Point	-89.5 °C
CAS-No.	67-63-0	Boiling Point	82.4 °C
Density 1 L	0.786 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.2	max.
Alkalinity (µEq./g.)	0.1	max.
Solubility in water	Passes test	
Residue on Evaporation	5	ppm max.
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	0.1	ppm max.
Arsenic and Antimony (as As)	0.01	ppm max.
Boron (B)	0.1	ppm max.
Calcium (Ca)	0.1	ppm max.

Chromium (Cr)	0.1	ppm max.
Copper (Cu)	0.01	ppm max.
Gold (Au)	0.1	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.1	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.1	ppm max.
Nickel (Ni)	0.01	ppm max.
Potassium (K)	0.1	ppm max.
Sodium (Na)	0.1	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.1	ppm max.
Zinc (Zn)	0.1	ppm max.

Cat No.	Package	Size
SM1162-G500ML	Amber Glass bottle	500 ML
SM1162-G1L	Amber Glass bottle	1 L
SM1162-G2.5L	Amber Glass bottle	2.5 L
SM1162-P2.5L	Plastic bottle	2.5 L
SM1162-G4L	Amber Glass bottle	4 L

Cat No.	Package	Size
SM1162-P4L	Plastic	4 L
SM1162-P20L	Plastic	20 L
SM1162-P200L	Plastic	200 L
SM1162-M200L	Metal	200 L

Propan-2-ol, Semig Plus

SM1163

$(CH_3)_2CHOH$	FW. 60.10	Melting Point	-89.5 °C
CAS-No.	67-63-0	Boiling Point	82.4 °C
Density 1 L	0.786 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Appearance	Colorless	
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (as CH_3COOH)	0.001%	max.
Specific resistance (MΩ.cm)	10	max.
Residue on Evaporation	5	max.
Chloride (Cl)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	0.05	ppm max.
Arsenic (As)	0.01	ppm max.
Antimony (Sb)	0.01	ppm max.
Barium (Ba)	0.05	ppm max.
Boron (B)	0.01	ppm max.
Cadmium (Cd)	0.05	ppm max.
Calcium (Ca)	0.05	ppm max.

Chromium (Cr)	0.02	ppm max.
Copper (Cu)	0.001	ppm max.
Gold (Au)	0.05	ppm max.
Iron (Fe)	0.03	ppm max.
Lead (Pb)	0.005	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.02	ppm max.
Manganese (Mn)	0.01	ppm max.
Nickel (Ni)	0.01	ppm max.
Potassium (K)	0.05	ppm max.
Silver (Ag)	0.05	ppm max.
Sodium (Na)	0.05	ppm max.
Strontium (Sr)	0.01	ppm max.
Tin (Sn)	0.05	ppm max.
Titanium (Ti)	0.01	ppm max.
Zinc (Zn)	0.02	ppm max.

Cat No.	Package	Size
SM1163-G500ML	Amber Glass bottle	500 ML
SM1163-G1L	Amber Glass bottle	1 L
SM1163-G2.5L	Amber Glass bottle	2.5 L
SM1163-P2.5L	Plastic bottle	2.5 L
SM1163-G4L	Amber Glass bottle	4 L

Cat No.	Package	Size
SM1163-P4L	Plastic bottle	4 L
SM1163-P20L	Plastic drum	20 L
SM1163-P200L	Plastic drum	200 L
SM1163-M200L	Metal drum	200 L

Propan-2-ol, VLSI

VL1162

$(CH_3)_2CHOH$	FW. 60.10	Melting Point	-89.5 °C
CAS-No.	67-63-0	Boiling Point	82.4 °C
Density 1 L	0.786 Kg.		

Specifications

Assay (by GC.)	99.9%	min.
Identity	Corresponds to IR spectrum	
Color (APHA)	10	max.
Water (by Coulometry)	0.05%	max.
Acidity (µEq./g.)	0.2	max.
Alkalinity (µEq./g.)	0.1	max.
Specific resistance (MΩ.cm)	10	min.
Residue on Evaporation	3	ppm max.
Aldehyde and Ketones (as propionic aldehyde)	50	ppm max.
Substances reducing permanganate (as O)	2.5	ppm max.
Chloride (Cl)	0.1	ppm max.
Phosphate (PO_4)	0.1	ppm max.
Sulfate (SO_4)	1.0	ppm max.
Heavy metals (as Pb)	0.1	ppm max.
Aluminium (Al)	20	ppb max.
Antimony (Sb)	10	ppb max.
Arsenic (As)	10	ppb max.
Barium (Ba)	10	ppb max.
Beryllium (Be)	10	ppb max.
Bismuth (Bi)	10	ppb max.
Boron (B)	5	ppb max.
Cadmium (Cd)	5	ppb max.
Calcium (Ca)	10	ppb max.
Chromium (Cr)	5	ppb max.
Cobalt (Co)	5	ppb max.

Copper (Cu)	5	ppb max.
Gallium (Ga)	10	ppb max.
Gold (Au)	10	ppb max.
Indium (In)	10	ppb max.
Iron (Fe)	10	ppb max.
Lead (Pb)	10	ppb max.
Lithium (Li)	5	ppb max.
Magnesium (Mg)	5	ppb max.
Manganese (Mn)	5	ppb max.
Molybdenum (Mo)	10	ppb max.
Nickel (Ni)	5	ppb max.
Platinum (Pt)	20	ppb max.
Potassium (K)	10	ppb max.
Silver (Ag)	5	ppb max.
Sodium (Na)	100	ppb max.
Strontium (Sr)	5	ppb max.
Thallium (Tl)	10	ppb max.
Tin (Sn)	10	ppb max.
Titanium (Ti)	10	ppb max.
Vanadium (V)	10	ppb max.
Zinc (Zn)	5	ppb max.
Zirconium (Zr)	10	ppb max.
Particle/ml :		
0.5 µm and greater	30	max.
1.0 µm and greater	8	max.

Product passed through 1 micron final filter.

Cat No.	Package	Size
VL1162-G2.5L	Amber Glass bottle	2.5 L
VL1162-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
VL1162-G4L	Amber Glass bottle	4 L
VL1162-P4L	Plastic bottle	4 L

Sulfuric Acid 20%, Semig

SM1280

H_2SO_4	FW. 98.08	Melting Point	-13.5 °C
CAS-No.	7664-93-9	Boiling Point	104.6 °C
Density 1 L	1.14 Kg.		

Specifications

Assay (by acidimetry)	19.0 – 21.0%	
Color (APHA)	10	max.
Residue after Ignition	5	ppm max.
Substances reducing permanganate (as SO_2)	2	ppm max.
Ammonium (NH_4)	0.5	ppm max.
Chloride (Cl)	0.1	ppm max.
Nitrate (NO_3)	0.2	min.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	0.2	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Boron (B)	0.02	ppm max.
Calcium (Ca)	0.3	ppm max.
Chromium (Cr)	0.2	ppm max.

Copper (Cu)	0.1	ppm max.
Gold (Au)	0.3	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.3	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.2	ppm max.
Nickel (Ni)	0.1	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.2	ppm max.
Titanium (Ti)	0.3	ppm max.
Zinc (Zn)	0.2	ppm max.

Cat No.	Package	Size
SM1280-G500ML	Amber Glass bottle	500 ML
SM1280-G1L	Amber Glass bottle	1 L
SM1280-G2.5L	Amber Glass bottle	2.5 L
SM1280-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1280-G4L	Amber Glass bottle	4 L
SM1280-P4L	Plastic bottle	4 L
SM1280-P30KG	Plastic drum	30 KG
SM1280-P320KG	Plastic drum	320 KG

Sulfuric Acid 40%, Electropure

EP1183

H_2-SO_4	FW. 98.08	Melting Point	-68.2 °C
CAS-No.	7664-93-9	Boiling Point	113.4 °C
Density 1 L	1.30 Kg.		

Specifications

Assay (by acidimetry)	39.0 - 41.0%	
Color (APHA)	10	max.
Residue after Ignition	3	ppm max.
Substances reducing permanganate (as SO_2)	2	ppm max.
Ammonium (NH_4)	2	ppm max.
Chloride (Cl)	0.1	ppm max.
Nitrate (NO_3)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	0.05	ppm max.
Arsenic and Antimony (as As)	0.01	ppm max.
Barium (Ba)	0.05	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.1	ppm max.
Boron (B)	0.05	ppm max.
Cadmium (Cd)	0.05	ppm max.
Calcium (Ca)	0.2	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.01	ppm max.
Gallium (Ga)	0.02	ppm max.

Germanium (Ge)	0.1	ppm max.
Gold (Au)	0.1	ppm max.
Indium (In)	0.02	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.05	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.02	ppm max.
Molybdenum (Mo)	0.05	ppm max.
Nickel (Ni)	0.02	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	50	ppm max.
Strontium (Sr)	0.05	ppm max.
Thallium (Tl)	0.05	ppm max.
Tin (Sn)	0.05	ppm max.
Titanium (Ti)	0.1	ppm max.
Vanadium (V)	0.05	ppm max.
Zinc (Zn)	0.1	ppm max.
Zirconium (Zr)	0.1	ppm max.

Cat No.	Package	Size
EP1183-G500ML	Amber Glass bottle	500 ML
EP1183-G1L	Amber Glass bottle	1 L
EP1183-G2.5L	Amber Glass bottle	2.5 L
EP1183-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1183-G4L	Amber Glass bottle	4 L
EP1183-P4L	Plastic bottle	4 L
EP1183-P30KG	Plastic drum	30 KG
EP1183-P320KG	Plastic drum	320 KG

Sulfuric Acid 50%, Semig

SM1184

H_2SO_4	FW. 98.08	Melting Point	-36.5 °C
CAS-No.	7664-93-9	Boiling Point	123.3 °C
Density 1 L	1.40 Kg.		

Specifications

Assay (by acidimetry)	49.0 – 51.0%	
Color (APHA)	10	max.
Residue after Ignition	5	ppm max.
Substances reducing permanganate (as SO_2)	2	ppm max.
Ammonium (NH_4)	0.5	ppm max.
Chloride (Cl)	0.1	ppm max.
Nitrate (NO_3)	0.5	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	0.2	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Boron (B)	0.02	ppm max.
Calcium (Ca)	0.3	ppm max.
Chromium (Cr)	0.2	ppm max.

Copper (Cu)	0.1	ppm max.
Gold (Au)	0.3	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.3	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.2	ppm max.
Nickel (Ni)	0.1	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.2	ppm max.
Titanium (Ti)	0.3	ppm max.
Zinc (Zn)	0.2	ppm max.

Cat No.	Package	Size
SM1184-G500ML	Amber Glass bottle	500 ML
SM1184-G1L	Amber Glass bottle	1 L
SM1184-G2.5L	Amber Glass bottle	2.5 L
SM1184-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1184-G4L	Amber Glass bottle	4 L
SM1184-P4L	Plastic bottle	4 L
SM1184-P30KG	Plastic drum	30 KG
SM1184-P320KG	Plastic drum	320 KG

Sulfuric Acid 60%, Electropure

EP1185

H_2SO_4	FW. 98.08	Melting Point	-28.7 °C
CAS-No.	7664-93-9	Boiling Point	140 °C
Density 1 L	1.49 Kg.		

Specifications

Assay (by acidimetry)	60.0%	min.
Color (APHA)	10	max.
Residue after Ignition	3	ppm max.
Substance reducing permanganate (as SO_2)	2	ppm max.
Ammonium (NH_4)	2	ppm max.
Chloride (Cl)	0.1	ppm max.
Nitrate (NO_3)	0.2	ppm max.
Phosphate (PO_4)	0.3	ppm max.
Aluminium (Al)	0.05	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Barium (Ba)	0.05	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.1	ppm max.
Boron (B)	0.01	ppm max.
Cadmium (Cd)	0.05	ppm max.
Calcium (Ca)	0.1	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.01	ppm max.
Gallium (Ga)	0.02	ppm max.
Germanium (Ge)	0.1	ppb max.
Gold (Au)	0.02	ppb max.

Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.05	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.05	ppm max.
Manganese (Mn)	0.01	ppm max.
Molybdenum (Mo)	0.05	ppm max.
Nickel (Ni)	0.02	ppm max.
Potassium (K)	0.1	ppm max.
Silicon (Si)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.1	ppm max.
Strontium (Sr)	0.05	ppm max.
Thallium (Tl)	0.05	ppm max.
Tin (Sn)	0.05	ppm max.
Titanium (Ti)	0.05	ppm max.
Vanadium (V)	0.05	ppm max.
Zinc (Zn)	0.05	ppm max.
Zirconium (Zr)	0.1	ppm max.
Particle/ml :		
0.5 µm and greater (drums)	150	max.
1.0 µm and greater (drums)	25	max.

Cat No.	Package	Size
EP1185-G500ML	Amber Glass bottle	500 ML
EP1185-G1L	Amber Glass bottle	1 L
EP1185-G2.5L	Amber Glass bottle	2.5 L
EP1185-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1185-G4L	Amber Glass bottle	4 L
EP1185-P4L	Plastic bottle	4 L
EP1185-P30KG	Plastic drum	30 KG
EP1185-P320KG	Plastic drum	320 KG

Sulfuric Acid 60%, Semig

SM1185

H_2SO_4	FW. 98.08	Melting Point	-28.7 °C
CAS-No.	7664-93-9	Boiling Point	140 °C
Density 1 L	1.49 Kg.		

Specifications

Assay (by acidimetry)	60.0 – 61.0%	
Color (APHA)	10	max.
Residue after Ignition	5	ppm max.
Substances reducing permanganate (as SO_2)	2	ppm max.
Ammonium (NH_4)	0.5	ppm max.
Chloride (Cl)	0.1	ppm max.
Nitrate (NO_3)	0.5	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	0.2	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Boron (B)	0.02	ppm max.
Calcium (Ca)	0.3	ppm max.
Chromium (Cr)	0.2	ppm max.

Copper (Cu)	0.1	ppm max.
Gold (Au)	0.3	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.3	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.2	ppm max.
Nickel (Ni)	0.1	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.2	ppm max.
Titanium (Ti)	0.3	ppm max.
Zinc (Zn)	0.2	ppm max.

Cat No.	Package	Size
SM1185-G500ML	Amber Glass bottle	500 ML
SM1185-G1L	Amber Glass bottle	1 L
SM1185-G2.5L	Amber Glass bottle	2.5 L
SM1185-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1185-G4L	Amber Glass bottle	4 L
SM1185-P4L	Plastic bottle	4 L
SM1185-P30KG	Plastic drum	30 KG
SM1185-P320KG	Plastic drum	320 KG

Sulfuric Acid 81%, VLSI

VL1151

H_2SO_4	FW. 98.08	Melting Point	2.5 °C
CAS-No.	7664-93-9	Boiling Point	210 °C
Density 1 L	1.74 Kg.		

Specifications

Assay (by acidimetry)	81-82%	
Color (APHA)	10	max.
Residue after Ignition	3	ppm max.
Substances reducing permanganate (as SO_2)	1	ppm max.
Ammonium (NH_4)	0.5	ppm max.
Chloride (Cl)	0.1	ppb max.
Nitrate (NO_3)	0.2	ppb max.
Phosphate (PO_4)	0.2	ppb max.
Aluminium (Al)	50	ppb max.
Arsenic and Antimony (as As)	5	ppb max.
Barium (Ba)	50	ppb max.
Beryllium (Be)	20	ppb max.
Bismuth (Bi)	50	ppb max.
Boron (B)	20	ppb max.
Cadmium (Cd)	10	ppb max.
Calcium (Ca)	200	ppb max.
Chromium (Cr)	20	ppb max.
Copper (Cu)	20	ppb max.
Chromium (Cr)	10	ppb max.
Gallium (Ga)	20	ppb max.
Germanium (Ge)	100	ppb max.

Gold (Au)	100	ppb max.
Indium (In)	20	ppb max.
Iron (Fe)	100	ppb max.
Lead (Pb)	10	ppb max.
Lithium (Li)	20	ppb max.
Magnesium (Mg)	50	ppb max.
Manganese (Mn)	20	ppb max.
Molybdenum (Mo)	50	ppb max.
Nickel (Ni)	20	ppb max.
Platinum (Pt)	100	ppb max.
Potassium (K)	100	ppb max.
Silver (Ag)	20	ppb max.
Sodium (Na)	200	ppb max.
Strontium (Sr)	10	ppb max.
Thallium (Tl)	50	ppb max.
Tin (Sn)	100	ppb max.
Titanium (Ti)	100	ppb max.
Vanadium (V)	50	ppb max.
Zinc (Zn)	20	ppb max.
Zirconium (Zr)	100	ppb max.

Product passed through 1 micron final filter.

Cat No.	Package	Size
VL1151-G2.5L	Amber Glass bottle	2.5 L
VL1151-G4L	Amber Glass bottle	4 L
VL1151-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
VL1151-P4L	Plastic bottle	4 L
VL1151-P320KG	Plastic drum	320 KG

Sulfuric Acid 89%, Electro Extra

EX1189

H_2SO_4	FW. 98.08	Melting Point	-1.5 °C
CAS-No.	7664-93-9	Boiling Point	256 °C
Density 1 L	1.81 Kg.		

Specifications

Assay (by acidimetry)	89.0 - 91.0%	
Color (APHA)	3	max.
Residue after Ignition	3	ppm max.
Chloride (Cl)	0.05	ppm max.
Nitrate (NO_3)	0.1	ppm max.
Phosphate (PO_4)	0.1	ppm max.
Aluminium (Al)	0.02	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Barium (Ba)	0.01	ppm max.
Beryllium (Be)	0.01	ppm max.
Bismuth (Bi)	0.01	ppm max.
Boron (B)	0.01	ppm max.
Cadmium (Cd)	0.01	ppm max.
Calcium (Ca)	0.2	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.01	ppm max.
Copper (Cu)	0.01	ppm max.
Gallium (Ga)	0.01	ppm max.
Germanium (Ge)	0.05	ppm max.
Gold (Au)	0.05	ppm max.

Indium (In)	0.01	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.01	ppm max.
Lithium (Li)	0.01	ppm max.
Magnesium (Mg)	0.05	ppm max.
Manganese (Mn)	0.01	ppm max.
Molybdenum (Mo)	0.05	ppm max.
Nickel (Ni)	0.01	ppm max.
Platinum (Pt)	0.01	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.01	ppm max.
Sodium (Na)	0.5	ppm max.
Strontium (Sr)	0.01	ppm max.
Thallium (Tl)	0.01	ppm max.
Tin (Sn)	0.01	ppm max.
Titanium (Ti)	0.1	ppm max.
Vanadium (V)	0.05	ppm max.
Zinc (Zn)	0.1	ppm max.
Zirconium (Zr)	0.05	ppm max.

Cat No.	Package	Size
EX1189-G500ML	Amber Glass bottle	500 ML
EX1189-G1L	Glass bottle	1 L
EX1189-G2.5L	Glass bottle	2.5 L
EX1189-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EX1189-G4L	Amber Glass bottle	4 L
EX1189-P4L	Plastic bottle	4 L
EX1189-P30KG	Plastic drum	30 KG
EX1189-P320KG	Plastic drum	320 KG

Sulfuric Acid 89%, Semig

SM1189

H_2SO_4	FW. 98.08	Melting Point	-1.5 °C
CAS-No.	7664-93-9	Boiling Point	256 °C
Density 1 L	1.81 Kg.		

Specifications

Assay (by acidimetry)	89.0 - 91.0%	
Color (APHA)	10	max.
Residue after Ignition	3	ppm max.
Chloride (Cl)	0.1	ppm max.
Nitrate (NO_3)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	0.2	ppm max.
Arsenic (As)	0.005	ppm max.
Boron (B)	0.02	ppm max.
Calcium (Ca)	0.3	ppm max.
Chromium (Cr)	0.2	ppm max.
Copper (Cu)	0.1	ppm max.

Gold (Au)	0.3	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.1	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.2	ppm max.
Nickel (Ni)	0.1	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.2	ppm max.
Titanium (Ti)	0.3	ppm max.
Zinc (Zn)	0.2	ppm max.

Cat No.	Package	Size
SM1189-G500ML	Amber Glass bottle	500 ML
SM1189-G1L	Amber Glass bottle	1 L
SM1189-G2.5L	Amber Glass bottle	2.5 L
SM1189-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1189-G4L	Amber Glass bottle	4 L
SM1189-P4L	Plastic bottle	4 L
SM1189-P30KG	Plastic drum	30 KG
SM1189-P320KG	Plastic drum	320 KG

Sulfuric Acid 96%, Electropure

EP1191

H_2SO_4	FW. 98.08	Melting Point	-11.1 °C
CAS-No.	7664-93-9	Boiling Point	310 °C
Density 1 L	1.84 Kg.		

Specifications

Assay (by acidimetry)	95.0 - 97.0%	
Color (APHA)	10	max.
Residue after Ignition	3	ppm max.
Substances reducing permanganate (as SO_2)	2	ppm max.
Ammonium (NH_4)	1	ppm max.
Chloride (Cl)	0.1	ppm max.
Nitrate (NO_3)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	0.05	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Barium (Ba)	0.05	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.1	ppm max.
Boron (B)	0.02	ppm max.
Cadmium (Cd)	0.01	ppm max.
Calcium (Ca)	0.2	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.01	ppm max.
Gallium (Ga)	0.02	ppm max.
Germanium (Ge)	0.1	ppm max.

Gold (Au)	0.1	ppm max.
Indium (In)	0.02	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.01	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.02	ppm max.
Mercury (Hg)	0.005	ppm max.
Molybdenum (Mo)	0.05	ppm max.
Nickel (Ni)	0.02	ppm max.
Platinum (Pt)	0.2	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.2	ppm max.
Strontium (Sr)	0.05	ppm max.
Thallium (Tl)	0.05	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.1	ppm max.
Vanadium (V)	0.05	ppm max.
Zinc (Zn)	0.02	ppm max.
Zirconium (Zr)	0.1	ppm max.

Cat No.	Package	Size
EP1191-G500ML	Amber Glass bottle	500 ML
EP1191-G1L	Amber Glass bottle	1 L
EP1191-G2.5L	Amber Glass bottle	2.5 L
EP1191-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1191-G4L	Amber Glass bottle	4 L
EP1191-P4L	Plastic bottle	4 L
EP1191-P30KG	Plastic drum	30 KG
EP1191-P320KG	Plastic drum	320 KG

Acetone, Extropure

SM1191

H_2SO_4	FW. 98.08	Melting Point	-11.1 °C
CAS-No.	7664-93-9	Boiling Point	310 °C
Density 1 L	1.84 Kg.		

Specifications

Assay (by acidimetry)	95.0 - 97.0%	
Color (APHA)	10	max.
Chloride (Cl)	0.1	ppm max.
Nitrate (NO_3)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	0.2	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Boron (B)	0.02	ppm max.
Calcium (Ca)	0.3	ppm max.
Chromium (Cr)	0.2	ppm max.
Copper (Cu)	0.1	ppm max.

Gold (Au)	0.3	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.3	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.2	ppm max.
Nickel (Ni)	0.1	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.2	ppm max.
Titanium (Ti)	0.3	ppm max.
Zinc (Zn)	0.2	ppm max.

Cat No.	Package	Size
SM1191-G500ML	Amber Glass bottle	500 ML
SM1191-G1L	Amber Glass bottle	1 L
SM1191-G2.5L	Amber Glass bottle	2.5 L
SM1191-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1191-G4L	Amber Glass bottle	4 L
SM1191-P4L	Plastic bottle	4 L
SM1191-P30KG	Plastic drum	30 KG
SM1191-P320KG	Plastic drum	320 KG

Sulfuric Acid 96%, VLSI

VL1191

H_2SO_4	FW. 98.08	Melting Point	-11.1 °C
CAS-No.	7664-93-9	Boiling Point	310 °C
Density 1 L	1.84 Kg.		

Specifications

Assay (by acidimetry)	96.0 - 97.0%	
Color (APHA)	10	max.
Residue after Ignition	3	ppm max.
Substances reducing permanganate (as SO_2)	1	ppm max.
Ammonium (NH_4)	0.5	ppm max.
Chloride (Cl)	0.1	ppm max.
Nitrate (NO_3)	0.2	ppm max.
Phosphate (PO_4)	0.2	ppm max.
Aluminium (Al)	20	ppb max.
Arsenic and Antimony (as As)	5	ppb max.
Barium (Ba)	20	ppb max.
Beryllium (Be)	5	ppb max.
Bismuth (Bi)	20	ppb max.
Boron (B)	10	ppb max.
Cadmium (Cd)	5	ppb max.
Calcium (Ca)	100	ppb max.
Chromium (Cr)	10	ppb max.
Cobalt (Co)	5	ppb max.
Copper (Cu)	5	ppb max.
Gallium (Ga)	5	ppb max.
Germanium (Ge)	50	ppb max.

Gold (Au)	20	ppb max.
Indium (In)	5	ppb max.
Iron (Fe)	50	ppb max.
Lead (Pb)	5	ppb max.
Lithium (Li)	5	ppb max.
Magnesium (Mg)	50	ppb max.
Manganese (Mn)	5	ppb max.
Molybdenum (Mo)	5	ppb max.
Nickel (Ni)	5	ppb max.
Platinum (Pt)	10	ppb max.
Potassium (K)	100	ppb max.
Silver (Ag)	10	ppb max.
Sodium (Na)	100	ppb max.
Strontium (Sr)	5	ppb max.
Thallium (Tl)	5	ppb max.
Tin (Sn)	10	ppb max.
Titanium (Ti)	50	ppb max.
Vanadium (V)	50	ppb max.
Zinc (Zn)	20	ppb max.
Zirconium (Zr)	5	ppb max.

Product passed through 1 micron final filter.

Cat No.	Package	Size
VL1191-G2.5L	Amber Glass bottle	2.5 L
VL1191-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
VL1191-G4L	Amber Glass bottle	4 L
VL1191-P4L	Plastic bottle	4 L

Sulfuric Acid 98%, Electropure

EP1193

H_2SO_4	FW. 98.08	Melting Point	-20 °C
CAS-No.	7664-93-9	Boiling Point	330 °C
Density 1 L	1.84 Kg.		

Specifications

Assay (by acidimetry)	97.5 – 98.5%	
Color (APHA)	10	max.
Residue after Ignition	3	ppm max.
Substances reducing permanganate (as SO_2)	2	ppm max.
Ammonium (NH_4)	2	ppm max.
Chloride (Cl)	0.1	ppm max.
Nitrate (NO_3)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	0.05	ppm max.
Arsenic and Antimony (as As)	0.01	ppm max.
Barium (Ba)	0.05	ppm max.
Beryllium (Be)	0.02	ppm max.
Bismuth (Bi)	0.1	ppm max.
Boron (B)	0.05	ppm max.
Cadmium (Cd)	0.05	ppm max.
Calcium (Ca)	0.2	ppm max.
Chromium (Cr)	0.02	ppm max.
Cobalt (Co)	0.02	ppm max.
Copper (Cu)	0.01	ppm max.
Gallium (Ga)	0.02	ppm max.
Germanium (Ge)	0.1	ppm max.

Gold (Au)	0.1	ppm max.
Indium (In)	0.02	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.05	ppm max.
Lithium (Li)	0.02	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.02	ppm max.
Molybdenum (Mo)	0.05	ppm max.
Nickel (Ni)	0.02	ppm max.
Platinum (Pt)	0.2	ppm max.
Potassium (K)	0.1	ppm max.
Silver (Ag)	0.02	ppm max.
Sodium (Na)	0.2	ppm max.
Strontium (Sr)	0.05	ppm max.
Thallium (Tl)	0.05	ppm max.
Tin (Sn)	0.1	ppm max.
Titanium (Ti)	0.1	ppm max.
Vanadium (V)	0.05	ppm max.
Zinc (Zn)	0.1	ppm max.
Zirconium (Zr)	0.1	ppm max.

Cat No.	Package	Size
EP1193-G500ML	Amber Glass bottle	1 L
EP1193-G1L	Amber Glass bottle	1 L
EP1193-G2.5L	Amber Glass bottle	2.5 L
EP1193-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
EP1193-G4L	Amber Glass bottle	4 L
EP1193-P4L	Plastic bottle	4 L
EP1193-P30KG	Plastic drum	30 KG
EP1193-P320KG	Plastic drum	320 KG

Sulfuric Acid 98%, Semig

SM1193

H2SO4	FW. 98.08	Melting Point	-20 °C
CAS-No.	7664-93-9	Boiling Point	330 °C
Density 1 L	1.84 Kg.		

Specifications

Assay (by acidimetry)	97.5 - 98.5%	
Color (APHA)	10	max.
Chloride (Cl)	0.1	ppm max.
Nitrate (NO_3)	0.2	ppm max.
Phosphate (PO_4)	0.5	ppm max.
Aluminium (Al)	0.2	ppm max.
Arsenic and Antimony (as As)	0.005	ppm max.
Boron (B)	0.02	ppm max.
Calcium (Ca)	0.3	ppm max.
Chromium (Cr)	0.2	ppm max.
Copper (Cu)	0.1	ppm max.

Gold (Au)	0.3	ppm max.
Iron (Fe)	0.2	ppm max.
Lead (Pb)	0.3	ppm max.
Magnesium (Mg)	0.3	ppm max.
Manganese (Mn)	0.2	ppm max.
Nickel (Ni)	0.1	ppm max.
Potassium (K)	0.3	ppm max.
Sodium (Na)	0.3	ppm max.
Tin (Sn)	0.2	ppm max.
Titanium (Ti)	0.3	ppm max.
Zinc (Zn)	0.2	ppm max.

Cat No.	Package	Size
SM1193-G500ML	Amber Glass bottle	500 ML
SM1193-G1L	Amber Glass bottle	1 L
SM1193-G2.5L	Amber Glass bottle	2.5 L
SM1193-P2.5L	Plastic bottle	2.5 L

Cat No.	Package	Size
SM1193-G4L	Amber Glass bottle	4 L
SM1193-P4L	Plastic bottle	4 L
SM1193-P30KG	Plastic drum	30 KG
SM1193-P320KG	Plastic drum	320 KG

Toluene, Semig

SM1207

$C_6H_5CH_3$	FW. 92.14	Melting Point	-95 °C
CAS-No.	108-88-3	Boiling Point	110.6 °C
Density 1 L	0.870 Kg.		

Specifications

Assay (by GC.)	99.8%	min.
Color (APHA)	10	max.
Water (by Coulometry)	0.03%	max.
Acidity (µEq./g.)	0.2	max.
Residue on Evaporation	5	ppm max.
Substances darkened by sulfuric acid	Passes test	
Sulfur Compounds (as S)	0.003%	max.
Chloride (Cl)	3	ppm max.
Phosphate (PO_4)	1	ppm max.
Heavy metals (as Pb)	1	ppb max.
Aluminium (Al)	1	ppb max.
Arsenic and Antimony (as As)	0.01	ppm max.
Barium (Ba)	1	ppm max.
Boron (B)	0.2	ppm max.
Cadmium (Cd)	1	ppm max.
Calcium (Ca)	1	ppm max.
Chromium (Cr)	0.5	ppm max.

Cobalt (Co)	0.1	ppm max.
Copper (Cu)	0.1	ppm max.
Gallium (Ga)	0.5	ppm max.
Germanium (Ge)	1	ppm max.
Gold (Au)	0.5	ppm max.
Iron (Fe)	0.1	ppm max.
Lithium (Li)	1	ppm max.
Magnesium (Mg)	1	ppm max.
Manganese (Mn)	1	ppm max.
Nickel (Ni)	0.1	ppm max.
Potassium (K)	1	ppm max.
Silicon (Si)	1	ppm max.
Silver (Ag)	0.5	ppm max.
Sodium (Na)	1	ppm max.
Strontium (Sr)	1	ppm max.
Tin (Sn)	1	ppm max.
Zinc (Zn)	1	ppm max.

Cat No.	Package	Size
SM1207-G500ML	Amber Glass bottle	500 ML
SM1207-G1L	Amber Glass bottle	1 L
SM1207-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
SM1207-G4L	Amber Glass bottle	4 L
SM1207-M200L	Metal drum	200 L

Xylene, Semig

SM1213

$C_6H_4(CH_3)_2$	FW. 106.17	Density 1 L	0.860 Kg.
CAS-No.	1330-20-7	Boiling Point	137-143 °C

Specifications

Assay (by GC.)	99.0%	min.
Water (by Coulometry)	0.02%	max.
Acidity (µEq./g.)	0.3	max.
Residue on Evaporation	5	ppm max.
Chloride (Cl)	3	ppm max.
Phosphate (PO_4)	1	ppm max.
Aluminium (Al)	0.1	ppm max.
Arsenic and Antimony (as As)	0.01	ppm max.
Boron (B)	0.1	ppm max.
Calcium (Ca)	0.1	ppm max.
Chromium (Cr)	0.1	ppm max.

Copper (Cu)	0.1	ppm max.
Gold (Au)	0.1	ppm max.
Iron (Fe)	0.1	ppm max.
Lead (Pb)	0.1	ppm max.
Magnesium (Mg)	0.1	ppm max.
Manganese (Mn)	0.1	ppm max.
Nickel (Ni)	0.1	ppm max.
Potassium (K)	0.1	ppm max.
Sodium (Na)	0.1	ppm max.
Tin (Sn)	0.1	ppm max.
Zinc (Zn)	0.1	ppm max.

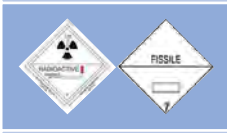
Cat No.	Package	Size
SM1213-G500ML	Amber Glass bottle	500 ML
SM1213-G1L	Amber Glass bottle	1 L
SM1213-G2.5L	Amber Glass bottle	2.5 L

Cat No.	Package	Size
SM1213-G4L	Amber Glass bottle	4 L
SM1213-M200L	Metal drum	200 L

Hazardous Transportation and Handling Concerns

Hazardous materials are classified by the tariff system. It is important for international shipment of hazardous materials. It is shown in IMDG code (International Maritime Organization of the UN). Transportation of dangerous Substances as following according to Recommendation on the Transport of Dangerous Goods, Model Regulation, Sixteenth revised edition, United Nations.

No.	CLASS	Division		Pictogram
1	Explosive substances or articles	1.1)	Substance and article which have a mass explosion hazard	
		1.2)	Substances and articles which have a projection hazard but not a mass explosion hazard	
		1.3)	Substance and article which have a fire hazard and either a minor 6 post hazard or a minor projection hazard or both, but not a mass explosion hazard	
		1.4)	Substance and article which present no significant hazard	
		1.5)	Very insensitive substances which have a mass explosion hazard	
		2.1)	Extremely insensitive articles which do not have a mass explosion hazard a mass explosion hazard	
2	Gases	2.1)	Flammable gases	
		2.2)	Non-flammable,non-toxic gases	
		2.3)	Toxic gases	
3	Flammable liquids			

No.	CLASS	Division		Pictogram
4	Flammable solids; substances liable to spontaneous combustion; substances which, on contact with water, emit flammable gases	4.1)	Flammable solid, self-reactive substances, solid desensitized explosives and polymerizing substances	
		4.2)	Substances liable to spontaneous combustion	
		4.3)	Substances which,in contact with water,emit flammable gases	
5	Oxidizing substances and organic peroxides	5.1)	Oxidizing substances	
		5.2)	Organic peroxides	
6	Toxic an infectious substances	6.1)	Toxic substances	
		6.2)	Infectious substances	
7	Radioactive material			
8	Corrosive substances			
9	Miscellaneous dangerous substances and articles,including environmentally hazardous substances			

The GHS
Hazard Grouping

The Physical Hazard

GHS signs	Description	Product Samples
 Flammable	• Self-Reactive Substances • Pyrophorics (Liquids, Solids) • Self-Heating Substances • Organic Peroxides • Desensitized Explosives • Flammables (Gases, Aerosols, Liquids and Solids) • Substances which no contact with Water Emit • Flammable Gases	• Acetic Acid Glacial • Acetone • Acetonitrile • Butan-1-ol • n-Butyl Acetate • 1-Chlorobutane • Cyclohexane • 1,2-Dichloroethane • Diethyl Ether • Dimethylformamide • 1,4-Dioxan • Ethanol • Ethyl Acetate • n-Heptane • n-Hexane • Hexanes • Methanol • Methyl-t-Butyl Ether • Methyl Ethyl Ketone • n-Pentane • Petroleum Ether 40-60 • Petroleum Ether 60-80 • Propan-1-ol • Propan-2-ol • Tetrahyfuran • Toluene • 2,2,4-Trimethylpentane
 Oxidizing	• Oxidizing (Gases, Liquids, Solids)	-
 Corrosive	• Substances Corrosive to Metal	• Acetic Acid Glacial
 Explosive	• Explosives • Self-Reactive Substances • Organic Peroxides	-
 Compressed gas	• Gases Under Pressure	-

The Health Hazard

GHS signs	Description	Product Samples
 Human Health	• Germ Cell Mutagenicity • Carcinogenicity • Toxic to Reproduction • Aspiration Toxicity • Specific Target Organ/Systemic Toxicity - Single Exposure • Specific Target Organ/Systemic Toxicity - Repeated Exposure	• Chloroform • Cyclohexane • 1,2-Dichloroethane • Dichloromethane • Dimethylacetamide • Dimethylformamide • 1,4-Dioxan • n-Heptane • n-Hexane • Hexanes • Methanol • n-Methyl-2-Pyrrollidone • n-Pentane • Petroleum Ether 40-60 • Petroleum Ether 60-80 • Tetrahydrofuran • Toluene • Trichloroethylene • 2,2,4-Trimethylpentane
 Hazardous	• Acute Toxicity (Low) • Eye Irritation • Respiratory or Skin Sensitization	• Acetone • Acetonitrile • Butan-1-ol • n-Butyl Acetate • Cyclohexane • Dichloromethane • Diethyl Ether • Dimethylacetamide • Dimethylformamide • 1,4-Dioxan • Ethanol • Ethyl Acetate • n-Heptane • n-Hexane • Hexanes • Methyl Ethyl Ketone • n-Methyl-2-Pyrrolidone • Methyl-t-Butyl Ether • Propan-1-ol • Propan-2-ol • n-Pentane • Petroleum Ether 40-60 • Petroleum Ether 60-80 • Tetrahydrofuran • Toluene • Trichloroethylene • 2,2,4-Trimethylpentane
 Corrosive	• Skin Corrosive/Irritation • Serious Eye Damage/Eye Irritation	• Acetic Acid Glacial • Butan-1-ol • Propan-1-ol
 Toxic	• Acute Toxicity (High)	• Chlorofrom • 1,2-Dichloroethane • Methanol

The Environmental Hazard

GHS signs	Description	Product Samples
 Environmental Hazard	• Hazardous to the Aquatic Environment • Hazardous to the Ozone Layer	• Cyclohexane • n-Heptane • n-Hexane • Hexanes • n-Pentane • Petroleum Ether 40-60 • Petroleum Ether 60-80 • 2,2,4-Trimethylpentane