



**QRëC**<sup>®</sup>  
Quality Reagent Chemical



[www.QREC.asia](http://www.QREC.asia)

# Analytical Reagents

QReC offers about 2,000 kinds of Analytical reagents including General Reagents & Special purpose reagents.

## Special Purpose reagents

- Volumetric analysis
- Buffer Solution
- Indicator solution for Titration
- Anhydrous titration

## Quality grades

- Guaranteed Reagents (GR)
- Extra Pure
- Chemical Pure (CP)
- AR ('AnalaR' Standards)
- ACS (America Chemical Society)



# High Purity Solvents

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- High Purity with Lot-to-Lot consistency

LC-MS

Ultimate

HPLC

Pesticide

DNA Biosynthesis





# Solvents for Electronics

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## Grade/EL

- Description / Electronic grade
- Trace impurity / 30 ppb and above

## Grade / ELH

- Description / Electronic High Purity grade
- Trace impurity / 1 ppb to 30 ppb





QRëC<sup>®</sup>

**CHEMICAL CATALOGUE**

**2014 - 2018**

# QRëC®



**QRëC** a well accepted quality brand was originated from New Zealand at the past decade. With the transfer of technology and continual commitment towards the growing demand of customer, **QRëC** is now emphasize in the fast growing market in Asia Pacific and has established its facilities in Malaysia

Under the new establishment of May Chemical, **QRëC** brand of reagent will further strengthen fulfillment of total customer satisfaction. Our prior mission continually ensures providing value adding to customer through our innovative development and modern purification techniques.

Products consistency is achieved and maintained by our **ISO 9002** accreditation. All product range is produced under tight quality control procedure to ensure top quality standard.

As a chemical producer, we also gave priority to Environmental and Health & Safety. We constantly comply with local legal requirement and also responsibilities to our employees and customers as well as public in terms of health and safety and environmental issues. In recognition to excel in this area, we have also certified **ISO 14001** environmental management system.







# Packaging for Safety, Convenience and Product Quality



## Amber Glass Bottles

Suitable for Photosensitive solvents and acids. We offer 1 litre, 2.5 litres.

1 litre : 6 bottles per box

2.5 litres : 4 bottles per box



## Plastic Bottles

Plastic bottles are supplied wherever possible, where chemical properties are compatible, because they minimize the risk of breakage, and they are lighter in weight and easier and more economical to ship. We offer 500g, 1kg, 5kg, 2.5 litres, 4 litres, 5 litres. 4 bottles per box for liquid form. 6 bottles per box for powder form.



## Drums for Bulk Quantity

We offer 20 litres, 25 litres HDPE jars, 200 litres HDPE drums and metal drums with PE inner lining.

# GHS Elements

Compared to the current EU system the most noticeable change are the pictograms (formerly: hazard symbols). While the most of the GHS pictograms have an equivalent in the old system, the pictograms GHS 04, GHS 07 and GHS 08 are completely new.

The GHS System is built on 16 physical, 10 health and 3 environmental hazard classes and comprises the following communication elements



**Explosion Bomb**

Unstable explosives  
Explosives of Divisions 1.1, 1.2, 1.3, 1.4  
Self reactive substances and mixtures, Types A,B  
Organic peroxides, Types A,B



**Flame**

Flammable gases, category 1  
Flammable aerosols, categories 1,2  
Flammable liquids, categories 1,2,3  
Flammable solids, categories 1,2  
Self-reactive substances and mixtures, Types B,C,D,E,F  
Pyrophoric liquids, category 1  
Pyrophoric solids, category 1  
Self-heating substances and mixtures, categories 1,2  
Substances and mixtures, which in contact with water, emit flammable gases, categories 1,2,3  
Organic peroxides, Types B,C,D,E,F



**Flame Over Circle**

Oxidizing gases, category 1  
Oxidizing liquids, categories 1,2,3



**Gas Cylinder**

Gases under pressure:  
- Compressed gases  
- Liquefied gases  
- Refrigerated liquefied gases  
- Dissolved gases



**Corrosion**

Corrosive to metals, category 1  
Skin corrosion, categories 1A,1B,1C  
Serious eye damage, category 1



**Skull and Crossbones**

Acute toxicity (oral, dermal, inhalation), categories 1,2,3



**Exclamation Mark**

Acute toxicity (oral, dermal, inhalation), category 4  
Skin irritation, category 2  
Eye irritation, category 2  
Skin sensitisation, category 1  
Specific Target Organ Toxicity - Single exposure, category 3



**Health Hazard**

Respiratory sensitization, category 1  
Germ cell mutagenicity, categories 1A,1B,2  
Carcinogenicity, categories 1A,1B,2  
Reproductive toxicity, categories 1A,1B,2  
Specific Target Organ Toxicity - Single exposure, categories 1,2  
Specific Target Organ Toxicity - Repeated exposure, categories 1,2  
Aspiration Hazard, category 1



**Environment**

Hazardous to the aquatic environment  
- Acute hazard, category 1  
- Chronic hazard, categories 1,2

## EXPLANATIONS : SECURITY : RISK AND SAFETY PHRASES

### RISK PHRASES (R)

R 1	Explosive when dry.
R 2	Risk of explosion by shock, friction, fire or other sources of ignition.
R 3	Extreme risk of explosion by shock, friction, fire or other sources of ignition.
R 4	Forms very sensitive explosive metallic compounds.
R 5	Heating may cause an explosion.
R 6	Explosive with or without contact with air.
R 7	May cause fire.
R 8	Contact with combustible material may cause fire.
R 9	Explosive when mixed with combustible material.
R 10	Flammable
R 11	Highly flammable.
R 12	Extremely flammable.
R 14	Reacts violently with water.
R 15	Contact with water liberates extremely flammable gases.
R 16	Explosive when mixed with oxidizing substances.
R 17	Spontaneously flammable in air.
R 18	In use, may form flammable/explosive vapour-air mixture.
R 19	May form explosive peroxides.
R 20	Harmful by inhalation.
R 21	Harmful in contact with skin.
R 22	Harmful if swallowed.
R 23	Toxic by inhalation.
R 24	Toxic in contact with skin.
R 25	Toxic if swallowed.
R 26	Very toxic by inhalation.
R 27	Very toxic in contact with skin.
R 28	Very toxic if swallowed.
R 29	Contact with water liberates toxic gas.
R 30	Can become highly flammable in use.
R 31	Contact with acids liberates toxic gas.
R 32	Contact with acids liberates very toxic gas.
R 33	Danger of cumulative effects.
R 34	Causes burns.
R 35	Causes severe burns.
R 36	Irritating to eyes.
R 37	Irritating to respiratory system.
R 38	Irritating to skin.
R 39	Danger of very serious irreversible effects.
R 40	Limited evidence of a carcinogenic effect.
R 41	Risk of serious damage to eyes.
R 42	May cause sensitization by inhalation.
R 43	May cause sensitization by skin contact.
R 44	Risk of explosion if heated under confinement.
R 45	May cause cancer.
R 46	May cause heritable genetic damage.
R 48	Danger of serious damage to health by prolonged exposure.
R 49	May cause cancer by inhalation.
R 50	Very toxic to aquatic organisms.
R 51	Toxic to aquatic organisms.
R 52	Harmful to aquatic organisms.
R 53	May cause long-term adverse effects in the aquatic environment.
R 54	Toxic to flora.
R 55	Toxic to fauna.
R 56	Toxic to soil organisms.
R 57	Toxic to bees.
R 58	May cause long-term adverse effects in the environment.
R 59	Dangerous for the ozone layer.
R 60	May impair fertility.
R 61	May cause harm to the unborn child.
R 62	Possible risk of impaired fertility.
R 63	Possible risk of harm to the unborn child.
R 64	May cause harm to breastfed babies.
R 65	Harmful: May cause lung damage if swallowed.
R 66	Repeated exposure may cause skin dryness or cracking.
R 67	Vapours may cause drowsiness and dizziness.
R 68	Possible risks of irreversible effects.



## EXPLANATIONS : SECURITY : RISK AND SAFETY PHRASES

### COMBINATION OF RISK PHRASES (R)

R14/15	Reacts violently with water, liberating extremely flammable gases.
R15/29	Contact with water liberates toxic, extremely flammable gas.
R20/21	Harmful by inhalation and in contact with skin.
R20/22	Harmful by inhalation and if swallowed.
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R21/22	Harmful in contact with skin and if swallowed.
R23/24	Toxic by inhalation and in contact with skin.
R23/25	Toxic by inhalation and if swallowed.
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R24/25	Toxic in contact with skin and if swallowed.
R26/27	Very toxic by inhalation and in contact with skin.
R26/28	Very toxic by inhalation and if swallowed.
R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed.
R27/28	Very toxic in contact with skin and if swallowed.
R36/37	Irritating to eyes and respiratory system.
R36/38	Irritating to eyes and skin.
R36/37/38	Irritating to eyes, respiratory system and skin.
R37/38	Irritating to respiratory system and skin.
R39/23	Toxic: Danger of very serious irreversible effects through inhalation.
R39/24	Toxic: Danger of very serious irreversible effects in contact with skin.
R39/25	Toxic: Danger of very serious irreversible effects if swallowed.
R39/23/24	Toxic: Danger of very serious irreversible effects through inhalation and in contact with skin.
R39/23/25	Toxic: Danger of very serious irreversible effects through inhalation and if swallowed.
R39/24/25	Toxic: Danger of very serious irreversible effects in contact with skin and if swallowed.
R39/23/24/25	Toxic: Danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R39/26	Very toxic: Danger of very serious irreversible effects through inhalation.
R39/27	Very toxic: Danger of very serious irreversible effects in contact with skin.
R39/28	Very toxic: Danger of very serious irreversible effects if swallowed.
R39/26/27	Very toxic: Danger of very serious irreversible effects through inhalation and in contact with skin.
R39/26/28	Very toxic: Danger of very serious irreversible effects through inhalation and if swallowed.
R39/27/28	Very toxic: Danger of very serious irreversible effects in contact with skin and if swallowed.
R39/26/27/28	Very toxic: Danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R40/20	Harmful: Possible risk of irreversible effects through inhalation.
R40/21	Harmful: Possible risk of irreversible effects in contact with skin.
R40/22	Harmful: Possible risk of irreversible effects if swallowed.
R40/20/21	Harmful: Possible risk of irreversible effects through inhalation and in contact with skin.
R40/20/22	Harmful: Possible risk of irreversible effects through inhalation and if swallowed.
R40/21/22	Harmful: Possible risk of irreversible effects in contact with skin and if swallowed.
R40/20/21/22	Harmful: Possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.
R42/43	May cause sensitization by inhalation and skin contact.
R48/20	Harmful: Danger of serious damage to health by prolonged exposure through inhalation.
R48/21	Harmful: Danger of serious damage to health by prolonged exposure in contact with skin.
R48/22	Harmful: Danger of serious damage to health by prolonged exposure if swallowed.
R48/20/21	Harmful: Danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
R48/20/22	Harmful: Danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R48/21/22	Harmful: Danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
R48/20/21/22	Harmful: Danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R48/23	Toxic: Danger of serious damage to health by prolonged exposure through inhalation.
R48/24	Toxic: Danger of serious damage to health by prolonged exposure in contact with skin.
R48/25	Toxic: Danger of serious damage to health by prolonged exposure if swallowed.
R48/23/24	Toxic: Danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
R48/23/25	Toxic: Danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R48/24/25	Toxic: Danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
R48/23/24/25	Toxic: Danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R68/20	Harmful: Possible risk of irreversible effects through inhalation.
R68/20/21	Harmful: Possible risk of irreversible effects through inhalation and in contact with skin.
R68/20/21/22	Harmful: Possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.
R68/20/22	Harmful: Possible risk of irreversible effects through inhalation and if swallowed.
R68/21	Harmful: Possible risk of irreversible effects in contact with skin.
R68/21/22	Harmful: Possible risk of irreversible effects in contact with skin and if swallowed.
R68/22	Harmful: Possible risk of irreversible effects if swallowed.

## EXPLANATIONS : SECURITY : RISK AND SAFETY PHRASES

### SAFETY PHRASES (S)

S 1	Keep locked up.
S 2	Keep out of the reach of children.
S 3	Keep in a cool place.
S 4	Keep away from living quarters.
S 5	Keep contents under... (appropriate liquid to be specified by the manufacturer).
S 6	Keep under... (inert gas to be specified by the manufacturer).
S 7	Keep container tightly closed.
S 8	Keep container dry.
S 9	Keep container in a well-ventilated place.
S 12	Do not keep the container sealed.
S 13	Keep away from food, drink and animal feeding stuffs.
S 14	Keep away from ... (incompatible materials to be indicated by the manufacturer) compounds.
S 15	Keep away from heat.
S 16	Keep away from sources of ignition - No smoking.
S 17	Keep away from combustible material.
S 18	Handle and open container with care.
S 20	When using do not eat or drink.
S 21	When using do not smoke.
S 22	Do not breathe dust.
S 23	Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
S 24	Avoid contact with skin.
S 25	Avoid contact with eyes.
S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 27	Take off immediately all contaminated clothing.
S 28	After contact with skin, wash immediately with plenty of ... (to be specified by the manufacturer).
S 29	Do not empty into drains.
S 30	Never add water to this product.
S 33	Take precautionary measures against static discharges.
S 35	This material and its container must be disposed of in a safe way.
S 36	Wear suitable protective clothing.
S 37	Wear suitable gloves.
S 38	In case of insufficient ventilation, wear suitable respiratory equipment.
S 39	Wear eye/face protection.
S 40	To clean the floor and all objects contaminated by this material use... (to be specified by the manufacturer).
S 41	In case of fire and/or explosion do not breathe fumes.
S 42	During fumigation/spraying wear suitable respiratory equipment (appropriate wording to be specified by the manufacturer).
S 43	In case of fire, use... (indicate the precise type of fire-fighting equipment. If water increases risk, and - 'Never use water).
S 45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 46	If swallowed, seek medical advice immediately and show this container or label.
S 47	Keep at temperature not exceeding...°C (to be specified by the manufacturer).
S 48	Keep wet with... (appropriate material to be specified by the manufacturer).
S 49	Keep only in the original container.
S 50	Do not mix with ... (to be specified by the manufacturer).
S 51	Use only in well-ventilated areas.
S 52	Not recommended for interior use on large surface areas.
S 53	Avoid exposure - obtain special instructions before use. Restricted to professional users.
S 56	Dispose of this material and its container at hazardous or special waste collection point.
S 57	Use appropriate container to avoid environmental contamination.
S 59	Refer to manufacturer/supplier for information on recovery/recycling.
S 60	This material and its container must be disposed of as hazardous waste.
S 61	Avoid release to the environment. Refer to special instructions / Safety data sheets.
S 62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
S 63	In case of accident by inhalation: remove casualty to fresh air and keep at rest.
S 64	If swallowed, rinse mouth with water (only if the person is conscious).

## EXPLANATIONS : SECURITY : RISK AND SAFETY PHRASES

### COMBINATION OF SAFETY PHRASES (S)

S 1/2	Keep locked up and out of reach of children.
S 3/7	Keep container tightly closed in a cool place.
S 3/9/14/49	Keep in a cool, well-ventilated place away from ...3/9
S3/9/14	Keep only in the original container in a cool, well-ventilated place away from ... (incompatible materials to be indicated by the manufacturer).
S3/9/49	Keep only the original container in a cool, well-ventilated place.
S3/14	Keep in a cool place away from ... (incompatible materials to be indicated by the manufacturer).
S7/8	Keep container tightly closed and dry.
S7/9	Keep container tightly closed and in a well-ventilated place.
S7/47	Keep container tightly closed and at a temperature not exceeding ... °C (to be specified by the manufacturer).
S20/21	When using do not eat, drink or smoke.
S24/25	Avoid contact with skin and eyes.
S27/28	After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of ... (to be specified by the manufacturer).
S29/35	Do not empty into drains; dispose of this material and its container in a safe way.
S29/56	Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
S36/37	Wear suitable protective clothing and gloves.
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S36/39	Wear suitable protective clothing and eye/face protection.
S37/39	Wear suitable gloves and eye/face protection.
S47/49	Keep only in the original container at a temperature not exceeding ... °C (to be specified by the manufacturer)>





# Chemical list : A

## ARSENIC



Synonyms :

**Physical data:**

- Density: ~ 1.01 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 2

**Safety:**

- R: 45-36/38
- S: 53-26-37-45

**Transport/storage:**

- ADR: 8 CT1 II UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- PAX: 808
- CAO: 812
- LGK: 6.1B

**Special regulations:**

- Restricted chemical

1 ml = 1000±5 mg/l

**A1001-0 Arsenic standard solution 1000mg/l for AA (arsenic (III) oxide in nitric acid 0.5 mol.l)**

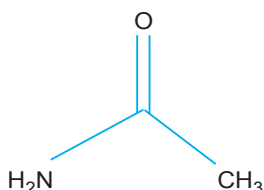
HS-No: 3822 00 00 00

Code	Capacity
A1001-0-0500	500 ml

## ACETAMIDE



Synonyms : Acetic acid amide



- C<sub>2</sub>H<sub>5</sub>NO
- M = 59.07 g/mol-
- CAS [60-35-5]
- EC number: 200-473-5

**Physical data:**

- Solub. in water (20 °C): soluble
- Melting point: 78 - 81 °C
- Boiling point: (13hPa) 105 °C

- Vapour pressure: (65 °C) 1.33 hPa
- pH (H<sub>2</sub>O) 7

**Toxicological data:**

- LD 50 (orat, rat): 7000 mg.kg
- WGK: 1

**Safety:**

- EC Index no.: 616-022-00-4
- R: 40
- S: 36/37
- Poison class CH (Swiss): 5

**Transport/storage:**

- LGK: 10-13
- Disposal: 9

**A1003-1 Acetamide, reagent grade**

HS-NO: 2924 19 00 90

Assay (C <sub>2</sub> H <sub>5</sub> NO) .....	min. 98.5%
Crystallizing poing .....	min. 77 °C
Insoluble matter in water .....	max. 0.2%
Chloride (Cl) .....	max. 0.002%
Sulfate (SO <sub>4</sub> ) .....	max. 0.002%

Free acid (as CH <sub>3</sub> COOH) .....	max. 0.2%
Acetic salts (CH <sub>3</sub> COO) .....	max. 0.2%
Heavy metals (as Pb) .....	max. 0.001%
Residue after ignition (as sulfate) ..	max. 0.1%

Code	Capacity
A1003-1-0100	100 g
A1003-1-0500	500 g

**A1003-3 Acetamide, extra pure**

HS-NO: 2924 19 00 90

Assay .....	min. 99 %
Free acid (as CH <sub>3</sub> COOH) .....	max. 0.5 %
Insoluble in water .....	max. 0.005 %
Insoluble in ethanol .....	passes test
Chlorides (Cl) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %

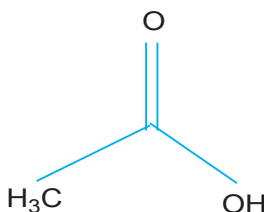
Copper (Cu) .....	max. 0.0005 %
Lead (Pb) .....	max. 0.0005 %
Iron (Fe) .....	max. 0.0005 %
Nickel (Ni) .....	max. 0.0005 %
Calcination residue (as SO <sub>4</sub> ) .....	max. 0.01 %
Water .....	max. 0.3 %

Code	Capacity
A1003-3-0500	500 g

## ACETIC ACID GLACIAL



Synonyms : Methane carboxylic acid Methylformic acid



- CH<sub>3</sub>COOH
- M = 60.05 g/mol
- CAS [64-19-7]
- EC number: 200-580-7

**Physical data:**

- Density: 1.05 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: 17 °C
- Boiling point: 117 °C
- Flash point: 38 °C
- Ignition temp: 485 °C

- Vapour pressure: (20 °C) 15.4 hPa
- Refraction index: (20 °C) 1.37
- Expl. limit (upper): 19.9 Vol%
- Expl. limit (lower): 4 Vol%
- pH (50 g/l H<sub>2</sub>O, 20 °C) 2.5

**Toxicological data:**

- LD 50 (oral, rat): 3310 mg/kg
- MAK: 10 ml/m<sup>3</sup>, 25 mg.m<sup>3</sup>
- WGK 1

**Safety:**

- EC Index no.: 607-002-00-6
- R: 10-35
- S: 23.2-51-26-36/37/39-45
- Poison class CH (Swiss): 3

**Transport/storage**

- ADR: 8 CF1 II UN 2789
- IMDG: 8 II UN 2789
- IATA/ICAO: 8 II UN 2789
- Pax: 809
- CAO: 813
- LGK: 3A
- Disposal: 4

### A1020-1 Acetic acid glacial, reagent grade

Assay .....	min. 99.8 %	Callium (Ga) .....	max. 0.05 ppm
Colour .....	max. 10 Hazen	Germanium (Ge) .....	max. 0.02 ppm
Acetaldehyde .....	max. 2 ppm	Indium (In) .....	max. 0.05 ppm
Acetic anhydride .....	max. 100 ppm	Potassium (K) .....	max. 0.1 ppm
Chloride (Cl) .....	max. 0.4 ppm	Lithium (Li) .....	max. 0.01 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 0.4 ppm	Magnesium (Mg) .....	max. 0.05 ppm
Sulphate (SO <sub>4</sub> ) .....	max. 0.4 ppm	Manganese (Mn) .....	max. 0.01 ppm
Arsenic and Antimony (as AS) .....	max. 0.005 ppm	Molybdenum (Mo) .....	max. 0.01 ppm
Silver (Ag) .....	max. 0.005 ppm	Sodium (Na) .....	max. 0.2 ppm
Aluminium (Al) .....	max. 0.02 ppm	Nickel (Ni) .....	max. 0.02 ppm
Gold (Au) .....	max. 0.01 ppm	Lead (Pb) .....	max. 0.01 ppm
Boron (B) .....	max. 0.1 ppm	Platinum (Pt) .....	max. 0.1 ppm
Barium (Ba) .....	max. 0.01 ppm	Tin (Sn) .....	max. 0.05 ppm
Beryllium (Be) .....	max. 0.005 ppm	Strontium (Sr) .....	max. 0.01 ppm
Bismuth (Bi) .....	max. 0.05 ppm	Titanium (Ti) .....	max. 0.05 ppm
Calcium (Ca) .....	max. 0.1 ppm	Thallium (Tl) .....	max. 0.02 ppm
Cadmium (Cd) .....	max. 0.02 ppm	Vanadium (V) .....	max. 0.01 ppm
Cobalt (Co) .....	max. 0.01 ppm	Zinc (Zn) .....	max. 0.03 ppm
Chromium (Cr) .....	max. 0.02 ppm	Zirconium (Zr) .....	max. 0.05 ppm
Copper (Cu) .....	max. 0.01 ppm	Non-volatile matter .....	max. 5 ppm
Iron (Fe) .....	max. 0.05 ppm	Substances reducing KMnO <sub>4</sub> .....	max. 20 ppm

HS-No: 2915 21 00 00

Code	Capacity
A1020-1-1000	1.0 L
A1020-1-2500	2.5 L
A1020-1-4000	4.0 L

A

### A1020-3 Acetic acid glacial, extra pure

Assay (acidimetric) .....	min. 99.8 %	Copper (Cu) .....	max. 0.0005 %
Insoluble in water .....	passes test	Iron (Fe) .....	max. 0.0005 %
Formic acid .....	max. 0.1 %	Mercury (Hg) .....	max. 0.0001 %
Chloride (Cl) .....	max. 0.0002 %	Lead (Pb) .....	max. 0.00005 %
Sulphate (SO <sub>4</sub> ) .....	max. 0.0005 %	Zinc (Zn) .....	max. 0.0005 %
Arsenic and Antimony (as As) .....	max. 0.0001 %	Non-volatile matter .....	max. 0.001 %
Aluminium (Al) .....	max. 0.00005 %	KMnO <sub>4</sub> red. Matter (as O) .....	max. 0.005 %

HS-No: 2915 21 00 00

Code	Capacity
A1020-3-2500	2.5 L
A1020-3-2501	2.5 L

### A1020-4 Acetic acid glacial, HPLC

See specification in Solvents Specification - 30

HS-No: 2915 21 00 00

Code	Capacity
A1020-4-2501	1.0 L
A1020-4-4001	4.0 L

### A1020-7 Acetic acid glacial, EC-10

Assay (acidimetric) .....	min. 99.7 %	Titration	Lead (Pb) .....	max. 200 ppb	ICP-MS
Colour .....	max. 10 Hazen	Colorimetric	Lithium (Li) .....	max. 50 ppb	ICP-MS
Chloride (Cl) .....	max. 1.0 ppm	Iron Chromatography	Magnesium (Mg) .....	max. 300 ppb	ICP-MS
Phosphate (PO <sub>4</sub> ) .....	max. 0.5 ppm	Iron Chromatography	Manganese (Mn) .....	max. 20 ppb	ICP-MS
Sulphate (SO <sub>4</sub> ) .....	max. 0.5 ppm	Iron Chromatography	Molybdenum (Mo) .....	max. 10 ppb	ICP-MS
Aluminium (Al) .....	max. 20 ppb	ICP-MS	Nickel (Ni) .....	max. 50 ppb	ICP-MS
Arsenic (As) .....	max. 10 ppb	ICP-MS	Platinum (Pt) .....	max. 50 ppb	ICP-MS
Barium (Ba) .....	max. 50 ppb	ICP-MS	Potassium (K) .....	max. 100 ppb	ICP-MS
Calcium (Ca) .....	max. 300 ppb	ICP-MS	Silver (Ag) .....	max. 10 ppb	ICP-MS
Cadmium (Cd) .....	max. 10 ppb	ICP-MS	Sodium (Na) .....	max. 200 ppb	ICP-MS
Cobalt (Co) .....	max. 10 ppb	ICP-MS	Strontium (Sr) .....	max. 10 ppb	ICP-MS
Chromium (Cr) .....	max. 10 ppb	ICP-MS	Tin (Sn) .....	max. 50 ppb	ICP-MS
Copper (Cu) .....	max. 20 ppb	ICP-MS	Titanium (Ti) .....	max. 200 ppb	ICP-MS
Gallium (Ga) .....	max. 10 ppb	ICP-MS	Thallium (Tl) .....	max. 50 ppb	-
Germanium (Ge) .....	max. 50 ppb	ICP-MS	Vanadium (V) .....	max. 10 ppb	Liquid Particle Counter
Gold (Au) .....	max. 10 ppb	ICP-MS	Zinc (Zn) .....	max. 50 ppb	
Iron (Fe) .....	max. 100 ppb	ICP-MS	Zirconium (Zr) .....	max. 50 ppb	
Indium (In) .....	max. 10 ppb	ICP-MS	Non-volatile matter .....	max. 5 ppb	
		ICP-M	Particles (>0.5µm) .....	max. 100 pcs/ml	

HS-No: 2915 21 00 00

Code	Capacity
A1020-7-2500	2.5 L

## ACETIC ACID, SOLUTION 0.1 MOL/L (0.1 N)

Synonyms :

- CH <sub>3</sub> COOH	<b>Physical data:</b>	<b>Safety:</b>
- M = 60.05 g/mol	- Form: Liquid	- EC Index no.: 607-002-00-6
- CAS [64-19-7]	- Density: ~1.002 g/cm <sup>3</sup>	
- EC number: 200-580-7	- Solub. in water (20 °C): miscible	

1 ml = 0.006 g CH<sub>3</sub>COOH

### A1029-0-1000 Acetic acid, solution 0.1 mol/l (0.1 N)

HS-No: 2915 21 00 00

Code	Capacity
A1029-0-1000	1.0 L



## ACETIC ACID, SOLUTION 1 MOL/L (1 N)

Synonyms :

- CH<sub>3</sub>COOH
- M = 60.05 g/mol
- CAS [64-19-7]
- EC number: 200-580-7

**Physical data:**

- Form: Liquid
- Density: ~1.01 g/cm

**Safety:**

- EC Index no.: 607-002-00-6
- Poison class CH (Swiss): 3

1 ml = 0.060 g CH<sub>3</sub>COOH

**A1030-0-1000 Acetic acid, solution 1 mol/l (1 N)**

HS-No: 2915 21 00 00

Code	Capacity
A1030-0-1000	1.0 L

## ACETIC ACID, SOLUTION 5 MOL/L (5 N)

Synonyms :

- CH<sub>3</sub>COOH
- M = 60.05 g/mol
- CAS [64-19-7]
- EC number: 200-580-7

**Physical data:**

- Form: Liquid
- Density: ~1.01 g/cm<sup>3</sup>

**Safety:**

- EC Index no.: 607-002-00-6
- Poison class CH (Swiss): 3

1 ml = 0.30025 g CH<sub>3</sub>COOH

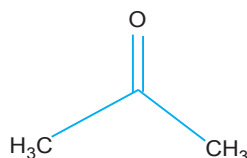
**A1031-0-2500 Acetic acid, solution 5 mol/l (5 N)**

HS-No: 2915 21 00 00

Code	Capacity
A1031-0-1000	1.0 L

## ACETONE

Synonyms : Dimethyl ketone, 2-Propanone



- C<sub>3</sub>H<sub>6</sub>O
- M = 58.08 g/mol
- CAS [67-64-1]
- EC number: 200-662-2

**Physical data:**

- Density: 0.79 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -95 °C
- Boiling point: 56 °C
- Flash point: < -20 °C
- Ignition temp.: 540 °C
- Vapour pressure: (20 °C) 233 hPa

- Refraction index: (n<sub>20 °C/D</sub>) 1.35868
- Viscosity: (25 °C) 0.31 mPas
- Dipolar moment: (20 °C) 2.7 Debye
- Dielectric const.: (25 °C) 20.7
- Evap. heat: (56 °C) 521 kJ/kg
- Saturation conc.: (20 °C) 533g/m<sup>3</sup>
- Expl. limit (upper): 13 Vol%
- Expl. limit (lower): 2.6 Vol%
- pH (395 g/l H<sub>2</sub>O, 20 °C) 5 - 6

**Toxicological data:**

- LD 50 (oral, rat): 5800 mg/kg
- MAK: 500 ml/m, 1200 mg/m
- WGK: 1

**Safety:**

- EC Index no.: 606-001-00-8
- R: 11-36-66-67
- S: 9-16-26
- VbF class: B
- Poison class CH (Seiss): 5

**Transport/storage:**

- ADR: 3 F1 II UN 1090
- IMDG: 3 II UN 1090
- IATA/ICAO: 3 II UN 1090
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1



**A1084-1 Acetone, reagent grade**

HS-No: 2914 11 00 00

Purity (GC) .....	min. 99.5 %	Lithium (Li) .....	max. 0.02 ppm
Free Acid (as CH <sub>3</sub> COOH) .....	max. 20 ppm	Magnesium (Mg) .....	max. 0.1 ppm
Free Alkali (as HN <sub>3</sub> ) .....	max. 2.0 ppm	Manganese (Mn) .....	max. 0.02 pm
Spec. resistance .....	min. 5.0 MΩcm	Molybdenum (Mo) .....	max. 0.05 ppm
Heavy metals (as Pb) .....	max. 0.2 ppm	Sodium (Na) .....	max. 0.5 ppm
Silver (Ag) .....	max. 0.02 ppm	Nickel (Ni) .....	max. 0.02 ppm
Aluminium (Al) .....	max. 0.2 ppm	Lead (Pb) .....	max. 0.05 ppm
Arsenic (As) .....	max. 0.01 ppm	Platinum (Pt) .....	max. 0.2 ppm
Gold (Au) .....	max. 0.1 ppm	Antimony (Sb) .....	max. 0.01 ppm
Boron (B) .....	max. 0.01 ppm	Tin (Sn) .....	max. 0.1 ppm
Barium (Ba) .....	max. 0.1 ppm	Strontium (Sr) .....	max. 0.02 ppm
Beryllium (Be) .....	max. 0.02 ppm	Titanium (Ti) .....	max. 0.1 ppm
Bismuth (Bi) .....	max. 0.1 ppm	Thallium (Tl) .....	max. 0.05 ppm
Calcium (Ca) .....	max. 0.5 ppm	Vanadium (V) .....	max. 0.05 ppm
Cadmium (Cd) .....	max. 0.05 ppm	Zinc (Zn) .....	max. 0.1 ppm
Cobalt (Co) .....	max. 0.02 ppm	Zirconium (Zr) .....	max. 0.2 ppm
Chromium (Cr) .....	max. 0.02 ppm	Ethanol (GC) .....	max. 100 ppm
Copper (Cu) .....	max. 0.02 ppm	Methanol (GC) .....	max. 500 ppm
Iron (Fe) .....	max. 0.1 ppm	Aldehydes (as formaldehyde) .....	max. 10.0 ppm
Gallium (Ga) .....	max. 0.02 ppm	Substances reducing KMnO <sub>4</sub> (as O) ..	max. 2.5 ppm
Indium (In) .....	max. 0.02 ppm	Evaporation residue .....	max. 5.0 ppm
Potassium (K) .....	max. 0.1 ppm	Water .....	max. 0.2%

Code	Capacity
A1084-1-1000	1 L
A1084-1-2500	2.5 L
A1084-1-4000	4 L
A1084-1-920E	200 L

**A1084-4 Acetone, HPLC grade**

HS-No: 2914 11 00 00

See specification in Solvent Specification - 30

Code	Capacity
A1084-4-1001	1.0 L
A1084-4-2501	4.0 L

**A1084-6 Acetone, EC-100**

HS-No: 2914 11 00 00

Purity (GC) .....	min. 98 %	Lithium (Li) .....	max. 10 ppb
Free Acid (as CH <sub>3</sub> COOH) .....	max. 20 ppm	Magnesium (Mg) .....	max. 20 ppb
Free Alkali (as NH <sub>3</sub> ) .....	min. 2 cm	Manganese (Mn) .....	max. 10 ppb
Spec. resistance .....	max. 5.0 MΩ ppm	Molybdenum (Mo) .....	max. 10 ppb
Heavy metals (as Pb) .....	max. 100 %	Sodium (Na) .....	max. 100 ppb
Silver (Ag) .....	max. 10 ppm	Nickel (Ni) .....	max. 10 ppb
Aluminium (Al) .....	max. 50 ppb	Lead (Pb) .....	max. 10 ppb
Arsenic (As) .....	max. 10 ppb	Platinum (Pt) .....	max. 50 ppb
Gold (Au) .....	max. 20 ppb	Antimony (Sb) .....	max. 10 ppb
Boron (B) .....	max. 10 ppb	Tin (Sn) .....	max. 20 ppb
Barium (Ba) .....	max. 20 ppb	Strontium (Sr) .....	max. 10 ppb
Beryllium (Be) .....	max. 10 ppb	Titanium (Ti) .....	max. 20 ppb
Bismuth (Bi) .....	max. 20 ppb	Thallium (Tl) .....	max. 10 ppb
Calcium (Ca) .....	max. 100 ppb	Vanadium (V) .....	max. 10 ppb
Cadmium (Cd) .....	max. 10 ppb	Zinc (Zn) .....	max. 20 ppb
Cobalt (Co) .....	max. 10 ppb	Zirconium (Zr) .....	max. 20 ppb
Chromium (Cr) .....	max. 10 ppb	Ethanol (GC) .....	max. 100 ppm
Copper (Cu) .....	max. 10 ppb	Methanol (GC) .....	max. 500 ppm
Iron (Fe) .....	max. 10 ppb	Aldehydes (as formaldehyde) .....	max. 10 ppm
Gallium (Ga) .....	max. 10 ppb	Substances reducing KMnO <sub>4</sub> (as O) ..	max. 2.5 ppm
Indium (In) .....	max. 10 ppb	Evaporation residue .....	max. 3 ppm
Potassium (K) .....	max. 20 ppb	Water .....	max. 0.2 %

Code	Capacity
A1084-6-2500	2.5 L
A1084-6-4000	4 L
A1084-6-920E	200 L

**A1084-7 Acetone, EC-10**

HS-No: 2914 11 00 00

Purity (GC) .....	min. 99.8 %	Lithium (Li) .....	max. 10 ppb
Free Acid (as CH <sub>3</sub> COOH) .....	max. 20 ppm	Magnesium (Mg) .....	max. 20 ppb
Free Alkali (as NH <sub>3</sub> ) .....	min. 2 cm	Manganese (Mn) .....	max. 10 ppb
Spec. resistance .....	max. 5.0 MΩ ppm	Molybdenum (Mo) .....	max. 10 ppb
Heavy metals (as Pb) .....	max. 100 %	Sodium (Na) .....	max. 100 ppb
Silver (Ag) .....	max. 10 ppm	Nickel (Ni) .....	max. 10 ppb
Aluminium (Al) .....	max. 50 ppb	Lead (Pb) .....	max. 10 ppb
Arsenic (As) .....	max. 10 ppb	Platinum (Pt) .....	max. 50 ppb
Gold (Au) .....	max. 20 ppb	Antimony (Sb) .....	max. 10 ppb
Boron (B) .....	max. 10 ppb	Tin (Sn) .....	max. 20 ppb
Barium (Ba) .....	max. 20 ppb	Strontium (Sr) .....	max. 10 ppb
Beryllium (Be) .....	max. 10 ppb	Titanium (Ti) .....	max. 20 ppb
Bismuth (Bi) .....	max. 20 ppb	Thallium (Tl) .....	max. 10 ppb
Calcium (Ca) .....	max. 100 ppb	Vanadium (V) .....	max. 10 ppb
Cadmium (Cd) .....	max. 10 ppb	Zinc (Zn) .....	max. 20 ppb
Cobalt (Co) .....	max. 10 ppb	Zirconium (Zr) .....	max. 20 ppb
Chromium (Cr) .....	max. 10 ppb	Ethanol (GC) .....	max. 100 ppm
Copper (Cu) .....	max. 10 ppb	Methanol (GC) .....	max. 500 ppm
Iron (Fe) .....	max. 10 ppb	Aldehydes (as formaldehyde) .....	max. 10 ppm
Gallium (Ga) .....	max. 10 ppb	Substances reducing KMnO <sub>4</sub> (as O) ..	max. 2.5 ppm
Indium (In) .....	max. 10 ppb	Evaporation residue .....	max. 3 ppm
Potassium (K) .....	max. 20 ppb	Water .....	max. 0.2 %

Code	Capacity
A1084-7-2500	2.5 L
A1084-7-4000	4.0 L
A1084-7-920E	200 L

**A1084-11 Acetone, Pesticide Grade**

HS-No: 2914 11 00 00

See specification in Solvent Specification - 21

Code	Capacity
A1084-11-1001	1.0 L
A1084-11-4001	4.0 L

**A1084-12 Acetone, Ultimate Grade**

HS-No: 2914 11 00 00

See specification in Solvent Specification - 10

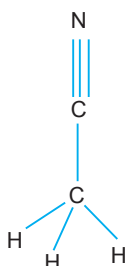
Code	Capacity
A1084-12-1001	1.0 L
A1084-12-4001	4.0 L

# ACETONITRILE



Synonyms : Methyl cyanide, Cyanomethane

A



- CH<sub>3</sub>CN
- M= 41.05 g/mol
- CAS [75-05-8]
- EC number: 200-835-2

**Physical data:**

- Density: 0.786 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -45.7 °C
- Boiling point: 81.6 °C
- Flash point: 5 °C
- Ignition temp.: 524 °C
- Vapour pressure: (20 °C) 97 hPa
- Refraction index: (n 20 °C), 1.3442
- Viscosity: (25 °C) 0.39 mPas

- Dipolar moment: (20 °C) 3.44 Debye
- Dielectric const.: (20 °C) 37.5
- Evap. heat: (81 °C) 833 kJ/kg
- Saturatiion conc.: (20 °C) 163g/m<sup>3</sup>
- Expl. limit (upper): 17 Vol%
- Expl. limit (lower): 3.0 Vol%

**Toxicological data:**

- LD 50 (oral, rat): 2730 - 3800 mg/kg
- MAK: 40 ml/m<sup>3</sup>, 68 mg/m<sup>3</sup>
- WGK: 2

**Safety:**

- EC Index no.: 608-001-00-3
- R: 11-20/21/22-36
- S: 16-36/37-46
- VbF class: B
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 3 F1 II UN 1648
- IMDG: 3 II UN 1648
- IATA/ICAO: 3 II UN 1648
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

**A1133-1 Acetonitrile, reagent grade**

HS-No: 2926 90 95 90

Assay .....	min. 99.5 %	Copper (Cu) .....	max. 0.000002 %
Colour .....	max. 10 Hazen	Iron (Fe) .....	max. 0.00001 %
Acidity .....	max. 0.0002 meq/g	Lead (Pb) .....	max. 0.00001 %
Alkalinity .....	max. 0.0001 meq/g	Magnesium (Mg) .....	max. 0.00001 %
Cyanides (CN) .....	max. 0.005 %	Manganese (Mn) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.00005 %	Nickel (Ni) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.00001 %	Tin (Sn) .....	max. 0.00001 %
Boron (B) .....	max. 0.000002 %	Zinc (Zn) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Reaction to H <sub>2</sub> SO <sub>4</sub> .....	passes test
Calcium (Ca) .....	max. 0.00005 %	Non-volatile matter .....	max. 0.001 %
Chromium (Cr) .....	max. 0.000002 %	Water (K.F.) .....	max. 0.1 %
Cobalt (Co) .....	max. 0.000002 %		

Code	Capacity
A1133-1-1001	1L
A1133-1-2501	2.5L

**A1133-4 Acetonitrile, HPLC grade**

HS-No: 2926 90 95 90

See specification in Solvent Specification - 31

Code	Capacity
A1133-4-1001	1.0L
A1133-4-4001	4.0L

**A1133-11 Acetonitrile, Pesticide grade**

HS-No: 2926 90 95 90

See specification in Solvent Specification - 21

Code	Capacity
A1133-11-1001	1.0L
A1133-11-4001	4.0L

**A1133-12 Acetonitrile, Ultimate grade**

HS-No: 2926 90 95 90

See specification in Solvent Specification - 10

Code	Capacity
A1133-12-1001	1.0L
A1133-12-4001	4.0L

**A1133-13 Acetonitrile, LC-MS grade**

HS-No: 2926 90 95 90

See specification in Solvent Specification - 6

Code	Capacity
A1133-13-1001	1.0L
A1133-13-4001	4.0L

**A1133-14 Acetonitrile, BIO grade**

HS-No: 2926 90 95 90

See specification in Solvent Specification - 55

Code	Capacity
A1133-14-1001	1.0L
A1133-14-4001	4.0L

**A1133-15 Acetonitrile, Ultra Dry grade**

HS-No: 2926 90 95 90

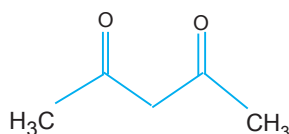
See specification in Solvent Specification - 62

Code	Capacity
A1133-15-1001	1.0L
A1133-15-4001	4.0L

## ACETYLACETONE



Synonyms : 2, 4-Pentanedione, ACAC



- C<sub>5</sub>H<sub>8</sub>O<sub>2</sub>
- M= 100.12 g/mol
- CAS [123-54-6]
- EC number: 204-634-0

**Physical data:**

- Form: Liquid
- Density: 0.97 g/cm<sup>3</sup>
- Solub. in water (20 °C): 200 g/l
- Melting point: -23 °C
- Boiling point: 140 °C
- Flash point: 34 °C
- Ignition temp.: 335 °C

- Vapour pressure: (20 °C) 9hPa
- Reflection index: (n 20 °C) 1.4510
- Dielectric const.: (20 °C) 25.7
- Evap. heat: (139 °C) 750 kJ/kg
- Saturation conc.: (20 °C) 38 g/m<sup>3</sup>
- Expl. limit (upper): 11.6 Vol%
- Expl. limit (lower): 2.4 Vol%
- pH (200 g/l H<sub>2</sub>O, 20 °C) ~6

**Safety:**

- EC Index no.: 606-029-00-0
- R: 10-22
- S: 21-23.2-51-24/25-46
- VbF class: All
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 3FT1 III UN 2310
- IMDG: 3 III UN 2310
- IATA: 3 III UN 2310
- PAX: 309
- CAO: 310
- LGK: 3A
- Disposal: 1

**Toxicological data:**

- LD 50 (oral, rat): 575 mg/kg
- WGK: 1

### A1135-1 Acetylacetone, reagent grade

HS-No: 2914 19 90 90

Assay .....	min. 99.0%	Solubility in water .....	passes test
Appearance .....	Clear~Yellowish liquid	Solubility in ethanol .....	passes test
Identity (IR-spectrum) .....	passes test	Density (at 20 °C) .....	0.971~0.976 g/ml
Water .....	max. 0.2%	Refractive index (at 20 °C) .....	1.450~1.454
Residue after evaporation .....	max. 0.03%		

Code	Capacity
A1135-1-1001	1.0L

### A1135-2 Acetylacetone, synthesis grade

HS-No: 2914 19 90 90

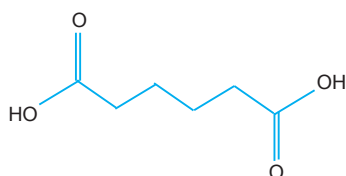
Assay .....	min. 99 %	Non-volatile matter .....	max. 0.005
Identity (IR-spectrum) .....	passes test	Water .....	max. 0.1 %
Density (20 °/4 °) .....	0.972 - 0.974		

Code	Capacity
A1135-2-1001	1.0L

## ADIPIC ACID



Synonyms : Hexanedioic acid, 1,4-Butanedicarboxylic acid



- C<sub>6</sub>H<sub>10</sub>O<sub>4</sub>
- M= 146.14 g/mol
- CAS [124-04-9]
- EC number: 204-673-3

**Physical data:**

- Bulk density: ~700 kg/m<sup>3</sup>
- Solub. in water (25 °C): 24 g/l
- Melting point: 150 - 153 °C
- Boiling point: (13 hPa) 205 °C

- Flash point: 196 °C
- Vapour pressure: (151 °C) 0.4 hPa
- pH (25 g/l H<sub>2</sub>O, 25 °C) 2.7

**Safety:**

- EC Index no.: 607-144-00-9
- R: 36
- Poison class CH (Swiss): 4

**Toxicological data:**

- LD 50 (oral, rat): ~5700 mg/kg
- WGK: 1

**Transport/storage:**

- LGK: 10-13

### A2001-3 Adipic acid, extra pure

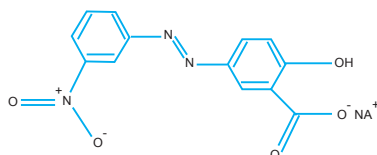
HS-No: 2917 12 10 00

Assay .....	99.6 -101.0 %	Arsenic (As) .....	max. 0.0003 %
Chloride (Cl) .....	max. 0.02 %	Copper (Cu) .....	max. 0.001 %
Nitrate (NO <sub>3</sub> ) .....	max. 0.003 %	Iron (Fe) .....	max. 0.001 %
Sulphate (SO <sub>4</sub> ) .....	max. 0.05 %	Lead (Pb) .....	max. 0.001 %
Heavy Metals (as Pb) .....	max. 0.001 %	Zinc (Zn) .....	max. 0.001 %

Code	Capacity
A2001-3-0500	500 g

## ALIZARIN YELLOW

Synonyms : 2-Hydroxy-5 [(3-nitrophenyl)azo]benzoic acid monosodium salt, Mordant yellow 1



- C<sub>13</sub>H<sub>8</sub>N<sub>3</sub>NaO<sub>5</sub>
- M= 309.21 g/mol
- CAS [584-42-9]
- EC number: 209-536-1

**Physical data:**

- Form: Liquid
- Bulk density: ~520 kg/m<sup>3</sup>
- Solub. in water (25 °C): 12 g/l
- pH (10 g/l H<sub>2</sub>O, 25 °C) ~7.9

**Transport/storage:**

- LGK: 10-13
- Disposal: 3

**Toxicological data:**

- WGK: 3

### A3000-0 Alizarin yellow, C.I. 14025, indicator

HS-No: 3204 19 00 90

pH range (yellow - orange) .....	10.2 - 12.1
Absorption maximum 1 (pH 10.2) .....	350 - 355 nm
Absorptivity (A1%/1 cm; 1, pH 10.2, on dried material) .....	620 - 720
Absorptivity (E1%/1 cm; 2, pH 12.1, on dried material) .....	800 - 900
Suitability for microbiology .....	passes test
Loss on drying (110 °C) .....	max. 1 %

Code	Capacity
A3000-1-0025	25 g



## ALUMINIUM AMMONIUM SULFATE DODECAHYDRATE

Synonyms : Aluminium ammonium sulfate, Ammonium alum

- $\text{NH}_4\text{Al}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$
- M = 453.33 g/mol
- CAS [7784-26-1]
- EC number: 232-055-3
- Solub. in water (20 °C): 150 g/l
- Melting point: 93 °C
- Boiling point: 200 °C
- pH (100 g/l  $\text{H}_2\text{O}$ , 25 °C) ~ 2.6

**Safety:**

- Poison class CH (Swiss): 4

**Transport/safety:**

- LGK: 10 - 13
- Disposal: 14

**Physical data:**

- Bulk density: ~700 - 800 kg/m<sup>3</sup>

**Toxicological data:**

- WGK: 1

### A4007-1 Aluminium ammonium sulfate dodecahydrate, reagent grade

HS-No: 2833 30 00 00

Assay (complexometric) .....	min. 99.0%	Calcium (Ca) .....	max. 0.001%
Insoluble matter .....	max. 0.005%	Iron (Fe) .....	max. 0.001%
Chloride (Cl) .....	max. 0.001%	Potassium (K) .....	max. 0.05%
Heavy Metals (as Pb) .....	max. 0.05%	Sodium (Na) .....	max. 0.01%

Code	Capacity
A4007-1-0500	500 g
A4007-1-1000	1 kg

### A4007-3 Aluminium ammonium sulfate dodecahydrate, extra pure

HS-No: 2833 30 00 00

Assay .....	min. 99 %	Copper (Cu) .....	max. 0.002 %
Insoluble in $\text{H}_2\text{O}$ .....	max. 0.02 %	Heavy metals (as Pb) .....	max. 0.002 %
Chloride (Cl) .....	max. 0.005 %	Iron (Fe) .....	max. 0.001 %
Phosphates ( $\text{PO}_4$ ) .....	max. 0.005 %	Lead (Pb) .....	max. 0.002 %
Precipitable compounds with ammonia (as sulfate) .....	max. 0.3 %	Nickel (Ni) .....	max. 0.002 %
Arsenic (As) .....	max. 0.0002%	Loss on drying (300 °C) .....	45 - 48 %

Code	Capacity
A4007-3-0500	500 g
A4007-3-1000	1 kg

## ALUMINIUM CHLORIDE HEXAHYDRATE



Synonyms : Hydrochloric acid aluminium salt hexahydrate

- $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$
- M = 241.43 g/mol
- CAS [7784-13-6]
- EC number: 231-208-1
- Solub. in water (20 °C): 1330 g/l
- Melting point: ~100 °C
- pH (50 g/l  $\text{H}_2\text{O}$ , 20 °C) ~ 2.5

**Safety:**

- R: 36/38
- Poison class CH (Swiss): 4

**Transport/storage:**

- LGK: 10-13

**Physical data:**

- Spec. density: ~2.40 g/m<sup>3</sup>
- Bluk density: ~800 kg/m<sup>3</sup>

**Toxicological data:**

- LD 50 (oral, rat): 3311 mg/kg
- WGK: 1

### A4010-1 Aluminium chloride hexahydrate, reagent grade

HS-No: 2827 32 00 00

Assay .....	min. 97.0 %	Ammonium ( $\text{NH}_4$ ) .....	max. 0.002 %
Reaction in water solution .....	passes test	Iron (Fe) .....	max. 0.001 %
Appearance of solution .....	passes test	Heavy metals (as Pb) .....	max. 0.0005 %
Insolubility matter in water .....	max. 0.025 %	Alkali metals and alkali earth metals (as sulfate) .....	max. 0.2 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.01 %		

Code	Capacity
A4010-1-0500	500 g

### A4010-3 Aluminium chloride hexahydrate, extra pure

HS-No: 2827 32 00 00

Assay (complexometric) .....	min. 99 %	Iron (Fe) .....	max. 0.0005 %
Appearance of solution .....	passes test	Magnesium (Mg) .....	max. 0.01 %
pH (5%, $\text{H}_2\text{O}$ ) .....	2.5 - 3.5	Potassium (K) .....	max. 0.01 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.01 %	Sodium (Na) .....	max. 0.1 %
Ammonium ( $\text{NH}_4$ ) .....	max. 0.01 %	Non-precipitable with ammonia (as $\text{SO}_4$ ) .....	max. 0.2 %
Arsenic (As) .....	max. 0.0004 %	Water .....	45 - 48 %
Calcium (Ca) .....	max. 0.02 %		
Heavy metals (as Pb) .....	max. 0.001 %		

Code	Capacity
A4010-3-0500	500 g
A4010-3-1000	1 kg

## ALUMINIUM HYDROXIDE

Synonyms : Hydrargillite

- $\text{Al}(\text{OH})_3$
- M= 78.00 g/mol
- CAS [21645-5-2]
- EC number: 244-492-7
- Melting point: 300 °C (release of crystalline water)
- Vapour pressure: (20 °C) < 0.1 hPa
- pH (100 g/l  $\text{H}_2\text{O}$ , 20 °C) ~ 8 - 9

**Safety:**

- Poison class CH (Swiss): F
- LGK: 10 - 13

**Physical data:**

- Spec. density: 2.42 g/cm<sup>3</sup>
- Bulk density: ~600 kg/m<sup>3</sup>
- Solub. in water (20 °C): ~0.0015 g/l

**Toxicological data:**

- LD 50 (oral, rat): > 5000 mg/kg
- MAK: 1.5 mg/m<sup>3</sup>
- WGK: 0

### A4014-1 Aluminium hydroxide, reagent grade

HS-No: 2818 30 00 90

Assay (complexometric) .....	min. 90 %	Lead (Pb) .....	max. 0.002 %
Arsenic (As) .....	max. 0.0003 %	Nickel (Ni) .....	max. 0.002 %
Copper (Cu) .....	max. 0.002 %	Calcination Residue .....	32 - 35 %
Iron (Fe) .....	max. 0.005 %		

Code	Capacity
A4014-1-0500	500 g

## ALUMINIUM NITRATE NONAHYDRATE



### Synonyms :

- $\text{Al}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O}$
- M = 375-13 g/mol
- CAS [7784-27-2]
- EC number: 236-751-8

- Boiling point: 135 °C (decomposes)
- pH (50 g/l  $\text{H}_2\text{O}$ , 20 °C) ~ 2 - 4

- Poison class CH (Swiss): 4

### Physical data:

- Bulk density: ~ 880 kg/m<sup>3</sup>
- Solub. in water (20 °C): 419 g/l
- Melting point: 73 °C

### Toxicological data:

- LD 50 (oral, rat): 3671 mg/kg
- WGK: 1

### Safety:

- R: 8-36/38

### Transport/storage:

- ADR: 5.1 O2 III UN 1438
- IMDG: 5.1 III UN 1438
- IATA/ICAO: 5.1 III UN 1438
- PAX: 516
- COA: 518
- LGK: 5.1B
- Disposal: 14

### A4018-1 Aluminium nitrate nonahydrate, reagent grade

HS-No: 2834 29 80 00

Assay (precipitation titration, $\text{NH}_4\text{F}$ )..	min. 98.0 %	Heavy metals (Pb) .....	max. 0.001 %
pH (5%, $\text{H}_2\text{O}$ ) .....	2 - 4	Iron (Fe) .....	max. 0.002 %
Chloride (Cl) .....	max. 0.001 %	Potassium (K) .....	max. 0.002 %
Sulfate ( $\text{SO}_4$ ) .....	max. 0.005 %	Sodium (Na) .....	max. 0.005 %
		Ammonium ( $\text{NH}_4$ ) .....	max. 0.05 %

Code	Capacity
A4018-1-0500	500 g
A4018-1-1000	1 kg

### A4018-3 Aluminium nitrate nonahydrate, extra pure

HS-No: 2834 29 80 00

Assay (complexometric).....	min. 98.0 %	Iron (Fe) .....	max. 0.005 %
Insoluble in water .....	max. 0.02 %	Lead (Pb) .....	max. 0.001 %
pH (5%, $\text{H}_2\text{O}$ ) .....	2.5 - 3.5	Magnesium (Mg) .....	max. 0.005 %
Chloride (Cl) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.001 %
Sulfate ( $\text{SO}_4$ ) .....	max. 0.005 %	Potassium (K) .....	max. 0.05 %
Ammonium ( $\text{NH}_4$ ) .....	max. 0.05 %	Sodium (Na) .....	max. 0.01 %
Arsenic (As) .....	max. 0.0001 %	Non-precipitable with ammonia	
Calcium (Ca) .....	max. 0.02 %	(as $\text{SO}_4$ ) .....	max. 0.5 %
Copper (Cu) .....	max. 0.001 %		

Code	Capacity
A4018-3-0500	500 g
A4018-3-1000	1 kg

## ALUMINIUM OXIDE

### Synonyms : Alum earth, Alumina, Good crucibles

- $\text{Al}_2\text{O}_3$
- M = 101.96 g/mol
- CAS [1344-28-1]
- EC number: 215-691-6

- Bulk density: ~ 90-190 kg/m<sup>3</sup>
- Solub. in water (20 °C): insoluble
- Melting point: ~ 1760 °C

### Safety:

- Poison class CH (Swiss): F

### Physical data:

- Form: Solid

### Toxicological data:

- MAK: 1.5 mg/m<sup>3</sup>
- WGK: 0

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### A4024-1 Aluminium oxide, reagent grade

HS-No: 2818 20 00 00

Sulfate ( $\text{SO}_4$ ) .....	max. 0.05 %	Solubility test in water .....	max. 0.5 %
Chloride (Cl) .....	max. 0.01 %	Loss on ignition .....	max. 5.0 %
Iron (Fe) .....	max. 0.01 %	Alkali metals and alkali earth metals	
Heavy metals (Pb) .....	max. 0.005 %	(as sulfate) .....	max. 0.50 %

Code	Capacity
A4024-1-0500	500 g

## ALUMINIUM POTASSIUM SULFATE DODECAHYDRATE

### Synonyms : Potassium aluminium sulfate, Alum potassium

- $\text{KAl}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$
- M = 474.39 g/mol
- CAS [7784-24-9]
- EC number: 233-141-3

- Solub. in water (20 °C): 139 g/l
- Melting point: 92 °C
- pH (50 g/l  $\text{H}_2\text{O}$ , 20 °C) ~ 3.0 - 3.5

### Safety:

- Poison class CH (Swiss): 5

### Physical data:

- Spec. density: 1.75 g/cm<sup>3</sup>
- Bulk density: ~900 kg/m<sup>3</sup>

### Toxicological data:

- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### A4038-1 Aluminium potassium sulfate dodecahydrate, reagent grade

HS-No: 2833 30 00 00

Assay .....	min. 99.5 %	Cadmium (Cd) .....	max. 0.0005 %
Insoluble in water .....	max. 0.005 %	Copper (Cu) .....	max. 0.0005 %
pH (10%, $\text{H}_2\text{O}$ ) .....	3.0 - 3.5	Heavy metals (as Pb) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.0005 %	Iron (Fe) .....	max. 0.0005 %
Ammonium ( $\text{NH}_4$ ) .....	max. 0.005 %	Lead (Pb) .....	max. 0.001 %
Arsenic (As) .....	max. 0.0002 %	Sodium (Na) .....	max. 0.01 %

Code	Capacity
A4038-1-0500	500 g
A4038-1-1000	1 kg

## ALUMINIUM SULFATE

### Synonyms :

- $\text{Al}_2(\text{SO}_4)_3 \cdot 18\text{H}_2\text{O}$
- M = 666.42 g/mol
- CAS [7784-31-8]
- EC number: 233-135-0

- Solub. in water (20 °C): ~600 g/l
- Melting point: 92 °C
- pH (20 g/l  $\text{H}_2\text{O}$ , 20 °C) ~ 2.5 - 4.0

### Transport/storage:

- LGK: 10-13

### Physical data:

- Form: Solid
- Bulk density: ~820 kg/m<sup>3</sup>

### Toxicological data:

- LD 50 (oral, rat): 9000 mg/kg
- WGK: 1

### Safety:

- S: 24/25
- Poison class CH (Swiss): 4

**A4042-3 Aluminium sulfate 18-hydrate, extra pure**

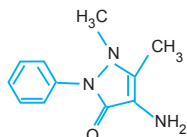
HS-No: 2833 22 00 00

Assay (complexometric, Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> )	51 - 59 %	Arsenic (As)	max. 0.0003 %
Appearance of solution	passes test	Copper (Cu)	max. 0.002 %
Insoluble in water	passes test	Heavy metals (as Pb)	max. 0.002 %
pH (2%, H <sub>2</sub> O)	2.5 - 4.0	Iron (Fe)	max. 0.005 %
Alkali and alkaline earth metals	max. 0.4 %	Lead (Pb)	max. 0.002 %
Chloride (Cl)	max. 0.005 %	Non-precipitable with ammonia	
Ammonium (NH <sub>4</sub> )	max. 0.01 %	(as SO <sub>4</sub> )	max. 0.4 %

Code	Capacity
A4042-3-0500	500 g

**4-AMINOANTIPYRINE**

Synonyms : 4-Aminoantipyrine



- C<sub>11</sub>H<sub>13</sub>N<sub>3</sub>O
- M = 203.24 g/mol
- CAS [8307-8]
- EC number: 201-452-3
- pH value 7.1 (100 g/l, H<sub>2</sub>O, 20 °C) (slurry)
- Melting point 107 - 109 °C
- Bulk density ~ 430 kg/m<sup>3</sup>

**Physical data:**

- Solub. in water 56 g/l (20 °C)
- M = 203.25 g/mol

**Toxicological data:**

- WGK: 1
- LD 50 (oral, rat) 1700 mg/kg

**Safety:**

- Harmful
- R: 22
- Poison class (CH) 3

**Transport/storage:**

- LGK: 10-13
- Disposal 3

**A5000-1 4-Aminoantipyrine, reagent grade**

HS-No: 2933 11 90 00

Melting point	106 - 109 °C	Residue after ignition (as sulfate)	max. 0.05 %
Solubility test in water	passes test	Chlorides (Cl)	max. 0.02 %

Code	Capacity
A5000-1-0025	25 g

**AMMONIA SOLUTION 10 - 15%**

Synonyms : Ammonia water, Ammonium hydroxide solution

- NH<sub>4</sub>OH
- M = 17.03 g/mol
- CAS [1336-21-6]
- EC number: 215-647-6
- Vapour pressure: (20 °C) ~ 500 hPa
- Expl. limit (upper): 33.6 vol%
- Expl. limit (lower): 15.4 Vol%
- pH (20 °C) > 12

**Physical data:**

- Density: 0.93 g/cm<sup>3</sup>
- Melting point: -57.5 °C
- Boiling point: 37.7 °C
- Flash point: 25 °C

**Toxicological data:**

- LD 50 (oral, rat): 350 mg/kg
- MAK: 20 ml/m<sup>3</sup>, 14 mg/m<sup>3</sup>
- WGK: 2

**Safety:**

- EC Index no.: 007-001-01-2

- R: 34-50
- S: 23.2-51-26-36/37/39-45-61
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 C5 III UN 2672
- IMDG: 8 III UN 2672
- IATA/ICAO: 8 III UN 2672
- PAX: 819
- CAO: 813
- LGK: 8 A
- Disposal: 13

**A5015-1 Ammonia solution 10-15%, reagent grade**

HS-No: 2814 20 00 00

Assay	10 - 15 %	Iron (Fe)	max. 0.000001 %
Colour	max. 10 Hazen	Lead (Pb)	max. 0.000002 %
Chlorides (Cl)	max. 0.000005 %	Lithium (Li)	max. 0.000005 %
Phosphates (PO <sub>4</sub> )	max. 0.000005 %	Magnesium (Mg)	max. 0.000001 %
Sulfates (SO <sub>4</sub> )	max. 0.000005 %	Manganese (Mn)	max. 0.000002 %
Aluminium (Al)	max. 0.000005 %	Nickel (Ni)	max. 0.000002 %
Barium (Ba)	max. 0.000001 %	Potassium (K)	max. 0.000005 %
Cadmium (Cd)	max. 0.000005 %	Sodium (Na)	max. 0.000005 %
Calcium (Ca)	max. 0.000001 %	Tin (Sn)	max. 0.000001 %
Chromium (Cr)	max. 0.000002 %	Zinc (Zn)	max. 0.000005 %
Copper (Cu)	max. 0.000002 %	Calcination residue (as SO <sub>4</sub> )	max. 0.002 %

Code	Capacity
A5015-1-920E	200 L

**AMMONIA SOLUTION 25%**

Synonyms ; Ammonia water, Ammonium hydroxide solution

- NH<sub>4</sub>OH
- M = 17.03 g/mol
- CAS [1336-21-6]
- EC number: 215-647-6
- Vapour pressure: (20 °C) ~ 500 hPa
- Expl. limit (upper): 33.6 Vol%
- Expl. limit (lower): 15.4 Vol%
- pH (20 °C) > 12

**Physical data:**

- Density: 0.91 g/cm<sup>3</sup>
- Melting point: ~57.5 °C
- Boiling point: 37.7 °C
- Flash point: 25 °C

**Toxicological data:**

- LD 50 (oral, rat): 350 mg/kg
- MAK: 20 ml/m<sup>3</sup>, 14 mg/m<sup>3</sup>
- WGK: 2

**Safety:**

- EC Index no.: 007-001-01-2

- R: 34-50
- S: 23.2-51-26-36/37/39-45-61
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 C5 III UN 2672
- IMDG: 8 III UN 2672
- IATA/ICAO: 8 III UN 2672
- PAX: 819
- CAO: 813
- LGK: 8 A
- Disposal: 13

**A5016-1 Ammonia solution 25%, reagent grade**

HS-No: 2814 20 00 00

Assay	min. 25 %	Iron (Fe)	max. 0.000001 %
Colour	max. 10 Hazen	Lead (Pb)	max. 0.000002 %
Chlorides (Cl)	max. 0.000005 %	Lithium (Li)	max. 0.000005 %
Phosphates (PO <sub>4</sub> )	max. 0.000005 %	Magnesium (Mg)	max. 0.000001 %
Sulfates (SO <sub>4</sub> )	max. 0.000005 %	Manganese (Mn)	max. 0.000002 %
Aluminium (Al)	max. 0.000005 %	Nickel (Ni)	max. 0.000002 %
Barium (Ba)	max. 0.000001 %	Potassium (K)	max. 0.000005 %
Cadmium (Cd)	max. 0.000005 %	Sodium (Na)	max. 0.000005 %
Calcium (Ca)	max. 0.000001 %	Tin (Sn)	max. 0.000001 %
Chromium (Cr)	max. 0.000002 %	Zinc (Zn)	max. 0.000005 %
Copper (Cu)	max. 0.000002 %	Calcination residue (as SO <sub>4</sub> )	max. 0.002 %

Code	Capacity
A5016-1-1000	1 L
A5016-1-2500	2.5 L

## AMMONIA SOLUTION 28%



Synonyms : Ammonia water

- NH<sub>4</sub>OH
- M = 17.03 g/mol
- CAS [1336-21-6]
- EC number: 215-647-6

### Physical data:

- Density: 0.90 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: ~ -63 °C
- Boiling point: 36 °C

- Vapour pressure: (20 °C) 535 hPa
- pH (20 °C) > 12

### Toxicological data:

- LD 50 (oral, rat): 350 mg/kg
- MAK: 20 ml/m<sup>3</sup>, 14 mg/m<sup>3</sup>
- WGK: 2

### Safety:

- EC Index no.: 007-001-01-2
- R: 34-50

- S: 23.2-51-26-36/37/39-45-61
- Poison class CH (Swiss): 2

### Transport/storage:

- ADR: 8 C5 III UN 2672
- IMDG: 8 III UN 2672
- IATA/ICAO: 8 III UN 2672
- PAX: 819
- CAO: 813
- LGK: 8 A
- Disposal: 13

### A5023-1 Ammonia solution 28%, reagent grade

Assay (acidimetric)	min. 28.0 %
Carbonate (CO <sub>2</sub> )	max. 10 ppm
Chloride (Cl)	max. 0.5 ppm
Phosphate (PO <sub>4</sub> )	max. 0.2 ppm
Sulphate (SO <sub>4</sub> )	max. 1.0 ppm
Arsenic anc Antimony (as As)	max. 0.05 ppm
Silver (Ag)	max. 0.02 ppm
Aluminium (Al)	max. 0.01 ppm
Gold (Au)	max. 0.02 ppm
Boron (B)	max. 0.01 ppm
Barium (Ba)	max. 0.02 ppm
Bismuth (Bi)	max. 0.02 ppm
Calcium (Ca)	max. 0.10 ppm
Cadmium (Cd)	max. 0.01 ppm
Cobalt (Co)	max. 0.01 ppm
Chromium (Cr)	max. 0.01 ppm
Copper (Cu)	max. 0.01 ppm
Iron (Fe)	max. 0.05 ppm
Gallium (Ga)	max. 0.02 ppm
Germanium (Ge)	max. 0.05 ppm

Indium (In)	max. 0.02 ppm
Potassium (K)	max. 0.10 ppm
Lithium (Li)	max. 0.02 ppm
Magnesium (Mg)	max. 0.05 ppm
Manganese (Mn)	max. 0.01 ppm
Molybdenum (Mo)	max. 0.01 ppm
Sodium (Na)	max. 0.20 ppm
Nickel (Ni)	max. 0.01 ppm
Lead (Pb)	max. 0.02 ppm
Platinum (Pt)	max. 0.02 ppm
Tin (Sn)	max. 0.02 ppm
Strontium (Sr)	max. 0.02 ppm
Titanium (Ti)	max. 0.05 ppm
Thallium (Tl)	max. 0.01 ppm
Vanadium (V)	max. 0.01 ppm
Zinc (Zn)	max. 0.05 ppm
Zirconium (Zr)	max. 0.02 ppm
Residue on ignition (as SO <sub>4</sub> )	max. 5 ppm
Substances reducing KMnO <sub>4</sub>	max. 3 ppm
Non volatlic matter	max. 3 ppm

HS-No: 2814 20 00 00

Code	Capacity
A5023-1-1000	1 L
A5023-1-2500	2.5 L
A5023-1-2501	2.5 L
A5023-1-4000	4 L

### A5023-7 Ammonia solution 29%, electronic grade EC-10

Assay (acidimetric)	min. 28.0 %
Carbonate (CO <sub>2</sub> )	max. 10 ppm
Chloride (Cl)	max. 0.5 ppm
Phosphate (PO <sub>4</sub> )	max. 0.2 ppm
Sulphate (SO <sub>4</sub> )	max. 1.0 ppm
Arsenic anc Antimony (as As)	max. 50 ppb
Silver (Ag)	max. 20 ppb
Aluminium (Al)	max. 50 ppb
Gold (Au)	max. 20 ppb
Boron (B)	max. 10 ppb
Barium (Ba)	max. 20 ppb
Bismuth (Bi)	max. 20 ppb
Calcium (Ca)	max. 150 ppb
Cadmium (Cd)	max. 10 ppb
Cobalt (Co)	max. 10 ppb
Chromium (Cr)	max. 10 ppb
Copper (Cu)	max. 10 ppb
Iron (Fe)	max. 50 ppb
Gallium (Ga)	max. 20 ppb
Germanium (Ge)	max. 50 ppb

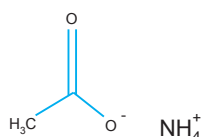
Indium (In)	max. 20 ppb
Potassium (K)	max. 50 ppb
Lithium (Li)	max. 20 ppb
Magnesium (Mg)	max. 50 ppb
Manganese (Mn)	max. 10 ppb
Molybdenum (Mo)	max. 10 ppb
Sodium (Na)	max. 30 ppb
Nickel (Ni)	max. 10 ppb
Lead (Pb)	max. 20 ppb
Platinum (Pt)	max. 20 ppb
Tin (Sn)	max. 20 ppb
Strontium (Sr)	max. 20 ppb
Titanium (Ti)	max. 10 ppb
Thallium (Tl)	max. 20 ppb
Vanadium (V)	max. 10 ppb
Zinc (Zn)	max. 50 ppb
Zirconium (Zr)	max. 10 ppb
Residue on ignition (as SO <sub>4</sub> )	max. 5 ppm
Substances reducing KMnO <sub>4</sub>	max. 3 ppm
Non volatlic matter	max. 3 ppm

HS-No: 2814 20 00 00

Code	Capacity
A5023-7-917E	170 kg
A5023-7-2500	2.5 L
A5023-7-4000	4 L

## AMMONIUM ACETATE

Synonyms :



- CH<sub>3</sub>COONH<sub>4</sub>
- M = 77.08 g/mol
- CAS [631-61-8]
- EC number: 211-162-9

### Physical data:

- Spec. density: 1.17 g/cm<sup>3</sup>
- Bulk density: ~410 kg/m<sup>3</sup>

- Solub. in watr (20 °C): soluble
- Melting point: 114 °C
- Boiling point: 136 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 6.7 - 7.3

### Toxicological data:

- WGK: 1

### Safety:

- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### A5034-1 Ammonium acetate, reagent grade

Assay (acidimetric)	min. 98.0 %
pH (5%, H <sub>2</sub> O)	6.7 - 7.6
Insoluble in water	max. 0.005 %
Chloride (Cl)	max. 0.0005 %
Nitrates (NO <sub>3</sub> )	max. 0.001 %
Sulfate (SO <sub>4</sub> )	max. 0.001 %

Calcium (Cd)	max. 0.001 %
Heavy metals (Pb)	max. 0.0002 %
Iron (Fe)	max. 0.0002 %
KMnO <sub>4</sub> red. Matter (as HCOOH)	max. 0.005 %
Calcination residue (as SO <sub>4</sub> )	max. 0.01 %
Water	max. 2 %

HS-No: 2915 29 00 90

Code	Capacity
A5034-1-0500	500 g

### A5034-3 Ammonium acetate, extra pure

Assay (acidimetric)	min. 96 %
pH (5%, H <sub>2</sub> O)	6.0 - 7.5
chloride (Cl)	max. 0.002 %
Sulfate (SO <sub>4</sub> )	max. 0.01 %

Heavy metals (Pb)	max. 0.0005 %
Iron (Fe)	max. 0.001 %
Calcination residue (as SO <sub>4</sub> )	max. 0.02 %
Water	max. 2.5 %

HS-No: 2915 29 00 90

Code	Capacity
A5034-3-0500	500 g
A5034-3-1000	1 kg



**A5034-4 Ammonium acetate, HPLC grade**

HS-No: 2915 29 00 90

See specification in Solvent Specification - 31

Code	Capacity
A5034-4-1001	1.0 L
A5034-4-4001	4.0 L

**AMMONIUM BROMIDE**

Synonyms :

- NH<sub>4</sub>Br
- M = 97.94 g/mol
- CAS [12124-97-9]
- EC number: 235-183-8
- Solub. in water (20 °C): 598 g/l
- Melting point: 542 °C
- pH (50 g/l H<sub>2</sub>O, 25 °C) 4.8

**Safety:**

- R: 36
- S: 24/25
- Poison class CH (Swiss): 3

**Physical data:**

- Spec. density: 2.43 g/m<sup>3</sup>
- Bulk density: ~1100 kg/m<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Transport/storage:**

- LGK: 10-13

**A5046-1 Ammonium bromide, reagent grade**

HS-No: 2827 59 00 00

Assay (argentometric) .....	min. 99.5 %	Barium (Ba) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	5.0 - 6.0	Calcium (Ca) .....	max. 0.001 %
Insoluble in water .....	max. 0.005 %	Heavy metals (Pb) .....	max. 0.0005 %
Bromates (BrO <sub>2</sub> ) .....	max. 0.001 %	Iron (Fe) .....	max. 0.0001 %
Chloride (Cl) .....	max. 0.1 %	Magnesium (Mg) .....	max. 0.002 %
Iodides (I) .....	max. 0.005 %	KMnO <sub>4</sub> red. Matter (as HCOOH) .....	passes test
Sulfate (SO <sub>4</sub> ) .....	max. 0.005 %	Calcination residue (as SO <sub>4</sub> ) .....	max. 0.01 %
Sulfides (S) .....	max. 0.0002 %	Loss on drying (105 °C) .....	max. 0.1 %

Code	Capacity
A5046-1-0500	500 g

**AMMONIUM CARBONATE**

Synonyms : Salt of hartshorn

- (NH<sub>4</sub>)<sub>2</sub>CO<sub>3</sub>
- M = 96.09 g/mol
- CAS [506-87-6]
- EC number: 208-58-0
- Melting point: 58 °C (decomposes)
- pH (100 g/l H<sub>2</sub>O, 20 °C) 9.4

**Safety:**

- R: 22
- S: 46
- Poison class CH (Swiss): 4

**Physical data:**

- Solub. in water (20 °C): soluble

**Toxicological data:**

- LD 50 (oral, rat): 1975 mg/kg
- WGK: 1

**Transport/storage:**

- LGK: 10-13

**A5052-1 Ammonium carbonate, reagent grade**

HS-No: 2836 10 00 00

Assay (argentometric) .....	min. 99.5 %	Barium (Ba) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	5.0 - 6.0	Calcium (Ca) .....	max. 0.001 %
Insoluble in water .....	max. 0.005 %	Heavy metals (Pb) .....	max. 0.0005 %
Bromates (BrO <sub>3</sub> ) .....	max. 0.001 %	Iron (Fe) .....	max. 0.0001 %
Chloride (Cl) .....	max. 0.1 %	Magnesium (Mg) .....	max. 0.002 %
Iodides (I) .....	max. 0.005 %	KMnO <sub>4</sub> red. Matter (as HCOOH) .....	passes test
Sulfate (SO <sub>4</sub> ) .....	max. 0.005 %	Calcination residue (as SO <sub>4</sub> ) .....	max. 0.01 %
Sulfides (S) .....	max. 0.0002 %	Loss on drying (105 °C) .....	max. 0.1 %

Code	Capacity
A5052-1-0500	500 g

**A5052-4 Ammonium carbonate, HPLC grade**

HS-No: 2836 10 00 00

See specification in Solvent Specification - 32

Code	Capacity
A5052-4-0500	500 g
A5052-4-1000	1 Kg

**AMMONIUM CERIUM (IV) SULFATE DIHYDRATE**

Synonyms : Ceric ammonium sulfate, Cerium (IV) ammonium sulfate, tetra-Ammonium-tetrasulfatocerate (IV)

- (NH<sub>4</sub>)<sub>4</sub>[Ce(SO<sub>4</sub>)<sub>4</sub>].2H<sub>2</sub>O
- M = 632.56 g/mol
- CAS [10378-47-9]
- EC number:

**Physical data:**

- Form: Solid
- Bulk density: ~800 kg/m<sup>3</sup>
- Solub. in water (20 °C): hydrolysis reaction
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~1.2

**Toxicological data:**

- WGK: 3\*

**Transport/storage:**

- LGK: 10-13
- Disposal: 28

**A5057-1 Ammonium cerium (IV) sulfate dihydrate, reagent grade**

HS-No: 2846 10 00 90

Assay .....	min. 98.0 %	Aluminium (as Al <sub>2</sub> O <sub>3</sub> ) .....	max. 0.08 %
Other Cerium Salts (as CeO <sub>2</sub> ) .....	max. 0.25 %	Substances not precipitated by ammonium hydroxide (as sulfate) ..	max. 0.2 %
Other rare earth metals (R <sub>x</sub> O <sub>y</sub> ) .....	max. 0.2 %	Iron (Fe) .....	max. 0.005 %
Insolubility meter in sulfuric acid .....	max. 0.05 %	Heavy Metals (as Pb) .....	max. 0.005 %
Chloride (Cl) .....	max. 0.01 %		

Code	Capacity
A5057-1-0101	100 g

## AMMONIUM CHLORIDE



Synonyms : Sal ammoniac

- NH<sub>4</sub>Cl
- M = 53.49 g/mol
- CAS [12125-02-9]
- EC number: 235-186-4

- Melting point: 335 °C (decomposes)
- Ignition temp.: > 400 °C
- Vapour pressure: (30 °C) 1.3 hPa
- pH (50 g/l H<sub>2</sub>O, 20 °C) 4.5 - 5.5

- Safety:**
- EC Index no.: 017-014-00-8
  - R: 22-36
  - S: 22-46
  - Poison class CH (Swiss): 4

**Physical data:**

- Spec. density: 1.52 g/cm<sup>3</sup>
- Bulk density: ~500 kg/m<sup>3</sup>
- Solub. in water (20 °C): 372 g/l

**Toxicological data:**

- LD 50 (oral, rat): 1440 mg/kg
- MAK: 1.5 mg/m<sup>3</sup>
- WGK: 1

**Transport/storage:**

- LGK: 10-13
- Disposal: 14

### A5058-1 Ammonium chloride, reagent grade

HS-No: 2827 10 00 00

Assay (argentometric) .....	min. 99.8 %	Heavy metals .....	max. 0.0005 %
Insoluble matter .....	max. 0.005 %	Lead (Pb) .....	max. 0.0002 %
pH (5%, H <sub>2</sub> O) .....	4.5 - 5.5	Magnesium (Mg) .....	max. 0.0005 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.0005 %	Nickel (Ni) .....	max. 0.0001 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0002 %	Potassium (K) .....	max. 0.005 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.002 %	Sodium (Na) .....	max. 0.005 %
Calcium (Ca) .....	max. 0.0005 %	Zinc (Zn) .....	max. 0.0002 %
Copper (Cu) .....	max. 0.0002 %	Calcination residue (as SO <sub>4</sub> ) .....	max. 0.01 %

Code	Capacity
A5058-1-0500	500 g
A5058-1-1000	1 kg

### A5058-3 Ammonium chloride, extra pure

HS-No: 2827 10 00 00

Assay (argentometric) .....	min. 99.5 %	Calcium (Ca) .....	max. 0.02 %
Acidly or alkalinely reacting impurities ..	passes test	Copper (Cu) .....	max. 0.0025 %
Appearance of solution .....	clear and colourless	Heavy metals (Pb) .....	max. 0.001 %
Iodides, bromides (I, Br) .....	passes test	Iron (Fe) .....	max. 0.002 %
pH (5%, H <sub>2</sub> O) .....	4.6 - 6.0	Lead (Pb) .....	max. 0.001 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.015 %	Zinc (Zn) .....	max. 0.0025 %
Thiocyanates (SCN) .....	max. 0.01 %	Calcination residue (as SO <sub>4</sub> ) .....	max. 0.1 %
Arsenic (As) .....	max. 0.0003 %	Loss on drying (150 °C) .....	max. 0.5 %

Code	Capacity
A5058-3-0500	500 g
A5058-3-1000	1 kg

## AMMONIUM DICHROMATE



Synonyms : Ammonium bichromate, Ammonium pyrochromate

- (NH<sub>4</sub>)<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>
- M = 252.07 g/mol
- CAS [7789-09-5]
- EC number: 232-143-1

- Ignition temp.: 218 °C
- pH (100 g/l H<sub>2</sub>O, 20 °C) 3.45

- S: 53-45-60-61
- Poison class CH (Swiss): 3

**Physical data:**

- Form: Solid
- Spec. density: 2.15 g/m<sup>3</sup>
- Solub. in water (20 °C): 360 g/l
- Melting point: 180 °C (decomposes, explosion reaction)

**Toxicological data:**

- LD 50 (oral, rat): 53.75 mg/kg
- WGK: 3

**Transport/storage:**

- ADR: 5.1 O2 II UN 1439
- IMDG: 5.1 II UN 1439
- IATA/ICAO: 5.1 II UN 1439
- PAX: 508
- CAO: 511
- LGK: 4.1A
- Disposal: 15

**Safety:**

- EC Index no.: 024-003-00-1
- R: 45-46-60-61.1-8-E21-E25-E26-34-42/43-E48/23-50/53

### A5064-1 Ammonium dichromate, reagent grade

HS-No: 2841 50 00 00

Assay .....	min. 99.0 %	Sodium (Na) .....	max. 0.005 %
Insolubility matter in water .....	max. 0.002 %	Potassium (K) .....	max. 0.07 %
Chloride (Cl) .....	max. 0.002 %	Calcium (Ca) .....	max. 0.002 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.01 %	Iron (Fe) .....	max. 0.002 %

Code	Capacity
A5064-1-0500	500 g

## AMMONIUM DIHYDROGEN PHOSPHATE

Synonyms : Ammonium biphosphate, Ammonium phosphatemonobasic, Primary ammonium phosphate, Monoammonium orthophosphate

- (NH<sub>4</sub>)<sub>2</sub>H<sub>2</sub>PO<sub>4</sub>
- M = 115.30 g/mol
- CAS [7722-76-1]
- EC number: 231-764-5

- Solub. in water (20 °C): 370 g/l
- Melting point: 190 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 3.8 - 4.4

- Safety:**
- Poison class CH (Swiss): 4
  - Disposal: 14

**Physical data:**

- Spec. density: 1.80 g/cm<sup>3</sup>
- Bulk density: ~800 - 1100 kg/m<sup>3</sup>

**Toxicological data:**

- LD 50 (oral, rat): 2500 mg/kg
- WGK: 1

**Transport/storage:**

- LGK: 10-13
- Disposal: 14

### A5067-1 Ammonium dihydrogen phosphate, reagent grade

HS-No: 3105 40 00 00

Assay (acidimetric) .....	min. 99 %	Arsenic (As) .....	max. 0.00005 %
Insoluble in water .....	max. 0.005 %	Heavy metals (Pb) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	3.8 - 4.4	Iron (Fe) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.0005 %	Potassium (K) .....	max. 0.005 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.001 %	Sodium (Na) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Precipitable by ammonia .....	max. 0.005 %

Code	Capacity
A5067-1-0500	500 g
A5067-1-1000	1 kg

### A5067-4 Ammonium dihydrogen phosphate, reagent grade

HS-No: 3105 40 00 00

See specification in Solvent Specification - 32

Code	Capacity
A5067-4-0500	500 g
A5067-4-1000	1 kg

## AMMONIUM FLUORIDE

Synonyms :

- $\text{FH}_4\text{N}$
- M = 37.04 g/mol
- CAS [12125-01-8]
- EC number: 235-185-9
- Solub. in water (20 °C): 820 g/l
- pH (50 g/l  $\text{H}_2\text{O}$ , 20 °C) 6

**Safety:**  
- Poison class CH (Swiss): 3

**Physical data:**

- Spec. density: 1.01 g/cm<sup>3</sup>
- Bulk density: 250 - 350 kg/m<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Transport/storage:**

- LGK: 6.1B
- Disposal: 23

### A5069-1 Ammonium fluoride, reagent grade

HS-No: 2826 11 00 00

Assay (precipitation titration, $\text{NH}_4\text{F}$ ) ...	min. 98.0 %	Iron (Fe) .....	max. 0.0005 %
Ammonium hydrogen difluoride .....	max. 0.5 %	Potassium (K) .....	max. 0.002 %
Hexafluorosilicate ( $\text{SiF}_6$ ) .....	max. 0.1 %	Sodium (Na) .....	max. 0.002 %
Chloride (Cl) .....	max. 0.0005 %	Water .....	max. 5 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.005 %	Insoluble substances .....	max. 0.005 %
Heavy metals (Pb) .....	max. 0.0005 %	Residue on ignition .....	max. 0.01 %

Code	Capacity
A5069-1-0500	500 g
A5069-1-1000	1 kg

## AMMONIUM HEPTAMOLYBDATE TETRAHYDRATE

Synonyms : Ammonium molybdate, Hexammonium heptamolybdate 4-hydrate

- $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}\cdot 4\text{H}_2\text{O}$
- M = 1235.86 g/mol
- CAS [12027-67-7]
- EC number: 234-722-4
- Melting point: 90 °C (release of crystalline water)
- pH (50 g/l  $\text{H}_2\text{O}$ , 20 °C) ~ 5.3

**Safety:**  
- Poison class CH (Swiss): 4

**Physical data:**

- Spec. density: 2.5 g/cm<sup>3</sup>
- Bulk density: ~800 kg/m<sup>3</sup>
- Solub. in water (20 °C): 400 g/l

**Toxicological data:**

- LD 50 (oral, rat): 3883 mg/kg
- MAK: 5mg/m<sup>3</sup>
- WGK: 1

**Transport/storage:**

- LGK: 10-13
- Disposal: 28

### A5071-1 Ammonium heptamolybdate tetrahydrate, reagent grade

HS-No: 2841 70 00 00

Assay [ $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}\cdot 4\text{H}_2\text{O}$ ] .....	min. 99 %	Sulphate ( $\text{SO}_4$ ) .....	max. 0.005 %
Assay ( $\text{MoO}_3$ ) .....	81.0 - 83.0	Copper (Cu) .....	max. 0.001 %
Insoluble matter .....	max. 0.005 %	Heavy metals (as Pb) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.0005 %	Iron (Fe) .....	max. 0.0005 %
Nitrate ( $\text{NO}_3$ ) .....	passes test	Lead (Pb) .....	max. 0.001 %
Arsenate, phosphate and silicate (as $\text{SiO}_2$ ) .....	max. 0.0005 %	Magnesium (Mg) .....	max. 0.005 %
Phosphate ( $\text{PO}_4$ ) .....	max. 0.0005 %	Potassium (K) .....	max. 0.002 %
		Sodium (Na) .....	max. 0.01 %

Code	Capacity
A5071-1-0500	500 g

## AMMONIUM HYDROGEN CARBONATE

Synonyms : Ammonium bicarbonate

- $\text{HN}_4\text{HCO}_3$
- M = 79.06 g/mol
- CAS [1066-33-7]
- EC number: 213-911-5
- Solub. in water (20 °C): 220 g/l
- Melting point: 106 °C
- Vapour pressure: (20 °C) 67 hPa
- pH (50 g/l  $\text{H}_2\text{O}$ , 20 °C) ~ 8

**Safe:**  
- R: 22  
- S: 46  
- Poison class CH (Swiss): F

**Physical data:**

- Spec. density: 2.4 g/cm<sup>3</sup>
- Bulk density: ~600 kg/m<sup>3</sup>

**Toxicological data:**

- LD 50 (oral, rat): 1576 mg/kg
- WGK: 1

**Transport/storage:**

- LGK: 10-13

### A5077-1 Ammonium hydrogen carbonate, reagent grade

HS-No: 2836 10 00 00

Assay (acidimetric) .....	min. 99 %	Iron (Fe) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.0005 %	Lead (Pb) .....	max. 0.001 %
Phosphates ( $\text{PO}_4$ ) .....	max. 0.0005 %	Magnesium (Mg) .....	max. 0.001 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.001 %
Arsenic (As) .....	max. 0.0001 %	Potassium (K) .....	max. 0.001 %
Calcium (Ca) .....	max. 0.01 %	Sodium (Na) .....	max. 0.002 %
Copper (Cu) .....	max. 0.001 %	Calcination residue (as $\text{SO}_4$ ) .....	max. 0.05 %

Code	Capacity
A5077-1-0500	500 g
A5077-1-1000	1 kg

## AMMONIUM IODIDE

Synonyms :

- $\text{NH}_4\text{I}$
- M = 144.94 g/mol
- CAS [12027-06-4]
- EC number: 234-717-7
- Bulk density: ~900 - 1000 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: 450 °C
- pH (50 g/l  $\text{H}_2\text{O}$ , 20 °C) 4.5 - 6.5

**Safety:**  
- poison class CH (Swiss): 3

**Physical data:**

- Form: Solid
- Spec. density: 2.52 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Transport/storage:**

- LGK: 10-13
- Disposal: 14

### A5080-3 Ammonium iodide, extra pure

HS-No: 2827 60 00 90

Assay (argentometric) .....	min. 99 %	Thiosulfates ( $\text{S}_2\text{O}_3$ ) .....	max. 0.01 %
pH (5%, $\text{H}_2\text{O}$ ) .....	4.5 - 6.5	Arsenic (As) .....	max. 0.0005 %
Insoluble in water .....	max. 0.005 %	Heavy metals (Pb) .....	max. 0.001 %
Bromides, chlorides (as Cl) .....	max. 0.02 %	Iron (Fe) .....	max. 0.001 %
Iodates ( $\text{IO}_3$ ) .....	max. 0.01 %	Sulfate Ash .....	max. 0.1 %
Sulfate ( $\text{SO}_4$ ) .....	max. 0.01 %	Loss on drying (105 °C) .....	max. 1 %

Code	Capacity
A5080-3-0500	500 g

## AMMONIUM IRON (II) SULFATE HEXAHYDRATE

Synonyms : Iron (II) ammonium sulfate, Ferrous ammonium sulfate, Mohr's salt

- $(\text{NH}_4)_2\text{Fe}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$
- M = 392.14 g/mol
- CAS [7783-85-9]
- EC number: 233-151-8
- Solub. in water (20 °C): 269 g/l
- Melting point: 100 °C
- pH (50 g/l  $\text{H}_2\text{O}$ , 20 °C) 3 - 5

**Safety:**  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- LGK: 10-13  
- disposal: 15

**Physical data:**  
- Spec. density: 1.86 g/cm<sup>3</sup>  
- Bulk density: ~900 kg/m<sup>3</sup>

**Toxicological data:**  
- WGK: 1

### A5086-1 Ammonium iron (II) sulfate hexahydrate, reagent grade

HS-No: 2833 30 00 00

Assay (manganometric) .....	min. 99 %	Copper (Cu) .....	max. 0.002 %
pH (5%, $\text{H}_2\text{O}$ ) .....	3 - 5	Iron (III) (Fe (III)) .....	max. 0.01 %
Insoluble in diluted $\text{H}_2\text{SO}_4$ .....	max. 0.01 %	Lead (Pb) .....	max. 0.001 %
Non precipitable by ammonia (as $\text{SO}_4$ ) .....	max. 0.05 %	Manganese (Mn) .....	max. 0.01 %
Chloride (Cl) .....	max. 0.001 %	Potassium (K) .....	max. 0.01 %
Phosphates ( $\text{PO}_4$ ) .....	max. 0.002 %	Sodium (Na) .....	max. 0.01 %
Calcium (Ca) .....	max. 0.002 %	Zinc (Zn) .....	max. 0.003 %

Code	Capacity
A5086-1-0500	500 g
A5086-1-1000	1 kg

## AMMONIUM IRON (II) SULFATE SOLUTION 0.1 MOL/L (0.1 N)

### A5089-0 Ammonium iron (II) sulfate solution 0.1 mol/l (0.1 N)

HS-No: 2833 30 00 00

Synonyms : Iron (II) ammonium sulfate, Iron alum

- $\text{NH}_4\text{Fe}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$
- M = 482.19 g/mol
- CAS [7783-83-7]
- EC number: 233-382-4
- Physical data:**  
- Density: 1.025 g/cm<sup>3</sup>
- Toxicological data:**  
- WGK: 1

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 15

Code	Capacity
A5089-0-1000	1 L

1 ml = 0.04822 g  $(\text{NH}_4)\text{Fe}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$

## AMMONIUM IRON (III) SULFATE DODECAHYDRATE

Synonyms : Iron (III) ammonium sulfate, Alum iron, Ferric ammonium alum, Iron alum, Iron (III) ammonium sulfate, Ferric ammonium sulfate

- $\text{NH}_4\text{Fe}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$
- M = 482.19 g/mol
- CAS [7783-83-7]
- EC number: 233-382-4

**Physical data:**  
- Bulk density: ~750 kg/m<sup>3</sup>  
- Solub. in water (25 °C): 1240 g/l  
- Melting point: 39 - 41 °C  
- pH (100 g/l  $\text{H}_2\text{O}$ , 20 °C) ~ 1.8

**Toxicological data:**  
- WGK: 1

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 16

### A5092-1 Ammonium iron (III) sulfate dodecahydrate, reagent grade

HS-No: 2833 30 00 00

Assay (iodometric) .....	min. 99 %	Iron (II) (Fe (II)) .....	max. 0.001 %
Insoluble in water .....	max. 0.005 %	Lead (Pb) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.0005 %	Magnesium (Mg) .....	max. 0.001 %
Nitrates ( $\text{NO}_3$ ) .....	max. 0.01 %	Manganese (Mn) .....	max. 0.005 %
Phosphates ( $\text{PO}_4$ ) .....	max. 0.002 %	Potassium (K) .....	max. 0.01 %
Calcium (Ca) .....	max. 0.002 %	Sodium (Na) .....	max. 0.01 %
Copper (Cu) .....	max. 0.001 %	Zinc (Zn) .....	max. 0.001 %

Code	Capacity
A5092-1-0500	500 g
A5092-1-1000	1 kg

### A5092-3 Ammonium iron (III) sulfate dodecahydrate, extra pure

HS-No: 2833 30 00 00

Assay (iodometric) .....	min. 97.0 %	Iron (II) (Fe (II)) .....	max. 0.002 %
Insoluble in water .....	max. 0.01 %	Lead (Pb) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.002 %	Magnesium (Mg) .....	max. 0.03 %
Calcium (Ca) .....	max. 0.03 %	Zinc (Zn) .....	max. 0.005 %
Copper (Cu) .....	max. 0.0005 %		

Code	Capacity
A5092-3-0500	500 g
A5092-3-1000	1 kg

## AMMONIUM MONOVANADATE

Synonyms : Ammonium metavanadate, Ammonium vanadate

- $\text{NH}_4\text{VO}_3$
- M = 116.98 g/mol
- CAS [7803-55-6]
- EC number: 232-261-3

**Toxicological data:**  
- LD 50 (oral, rat): 169 mg/kg  
- WGK: 3

**Transport/storage:**  
- ADR: 6.1 T5 II UN 2859  
- IMDG: 6.1 II UN 2859  
- IATA/ICAO: 6.1 II UN 2859  
- PAX: 613  
- CAO: 615  
- LGK: 6.1B  
- Disposal: 15

**Physical data:**  
- Bulk density: ~600 kg/m<sup>3</sup>  
- Solub. in water (15 °C): 5.2 g/l  
- Melting point: ~200 °C (decomposes)  
- pH (5 g/l  $\text{H}_2\text{O}$ , 20 °C) ~6.5

**Safety:**  
- R: 20-25-36/37  
- S: 26-37-45  
- Poison class CH (Swiss): 3

### A5097-1 Ammonium monovanadate, reagent grade

HS-No: 2841 90 30 00

Assay (titr. with Fe(II)) .....	min. 99.5 %	Copper (Cu) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.002 %	Iron (Fe) .....	max. 0.001 %
Phosphates ( $\text{PO}_4$ ) .....	max. 0.005 %	Lead (Pb) .....	max. 0.002 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.002 %
Cadmium (Cd) .....	max. 0.001 %	Zinc (Zn) .....	max. 0.001 %
Cobalt (Co) .....	max. 0.002 %		

Code	Capacity
A5097-1-0101	100 g
A5097-1-1000	1 kg



## AMMONIUM NITRATE



Synonyms : Nitric acid ammonia, Ammonia nitrate

- $\text{NH}_4\text{NO}_3$
- M = 80.04 g/mol
- CAS [6484-52-2]
- EC number: 229-347-8

- Melting point: 169 °C
- Boiling point: 302 °C
- pH (100 g/l  $\text{H}_2\text{O}$ , 20 °C) ~5.5

- S: 15-16-41
- Poison class CH (Swiss): 4

### Physical data:

- Spec. density: 1.72 g/cm<sup>3</sup>
- Bulk density: ~600 - 700 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble

### Toxicological data:

- LD 50 (oral, rat): 2462 mg/kg
- WGK: 1

### Safety:

- R: 8-9

### Transport/storage:

- ADR: 5.1 O2 III UN 1942
- IMDG: 5.1 III UN 1942
- IATA/ICAO: 5.1 III UN 1942
- PAX: 516
- CAO: 518
- LGK: 5.1C
- Disposal: 14

### A5105-1 Ammonium nitrate, reagent grade

HS-No: 3102 30 90 00

Assay (acidimetric) .....	min. 99 %	Copper (Cu) .....	max. 0.0005 %
Insoluble matter .....	max. 0.005 %	Iron (Fe) .....	max. 0.0001 %
pH (5%, $\text{H}_2\text{O}$ ) .....	4.5 - 6.0	Lead (Pb) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.0003 %	Magnesium (Mg) .....	max. 0.001 %
Nitrites ( $\text{NO}_2$ ) .....	max. 0.005 %	Potassium (K) .....	max. 0.001 %
Phosphates ( $\text{PO}_4$ ) .....	max. 0.0005 %	Sodium (Na) .....	max. 0.001 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.002 %	Zinc (Zn) .....	max. 0.0005 %
Calcium (Ca) .....	max. 0.003 %	Calcination residue (as $\text{SO}_4$ ) .....	max. 0.01 %
Cadmium (Cd) .....	max. 0.0005 %	Water .....	max. 5 %

Code	Capacity
A5105-1-0500	500 g
A5105-1-1000	1 kg

## AMMONIUM PEROXODISULFATE



Synonyms : Ammonium persulfate, Peroxodisulfuric acid diammonium salt

- $(\text{NH}_4)_2\text{S}_2\text{O}_8$
- M - 228.20 g/mol
- CAS [7727-54-0]
- EC number: 231-786-5

- Melting point: 120 °C (decomposes)
- pH (100 g/l  $\text{H}_2\text{O}$ , 25 °C) 3.2

- S: 22-24-26-37-45
- Poison class CH (Swiss): 4

### Physical data:

- Spec. density: 0.98 - 1.15 g/cm<sup>3</sup>
- Bulk density: ~900 kg/m<sup>3</sup>
- Solub. in water (20 °C): 620 g/l

### Toxicological data:

- LD 50 (oral, rat): 495 mg/kg
- WGK: 1

### Safety:

- EC Index no.: 016-060-00-6
- R: 8-22-36/37/38-42-43

### Transport/storage:

- ADR: 5.1 O2 III UN 1444
- IMDG: 5.1 III UN 1444
- IATA/ICAO: 5.1 III UN 1444
- PAX: 516
- CAO: 518
- LGK: 5.1B
- Disposal: 22

### A5108-1 Ammonium peroxodisulfate, reagent grade

HS-No: 2833 40 00 10

Assay .....	min. 98.0 %	Chloride and chlorate (as Cl) .....	max. 0.001 %
Appearance of solution .....	passes test	Manganese (Mn) .....	max. 0.00005 %
Insoluble matter in water .....	max. 0.005 %	Iron (Fe) .....	max. 0.0005 %
Residue after ignition (as Sulfate) ..	max. 0.02 %	Heavy Metals (as Pb) .....	max. 0.0005 %

Code	Capacity
A5108-1-0500	500 g

### A5108-3 Ammonium peroxodisulfate, extra pure

HS-No: 2833 40 00 10

Assay (iodometric) .....	min. 98 %	Iron (Fe) .....	max. 0.001 %
Insoluble matter .....	max. 0.02 %	Lead (Pb) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.002 %	Manganese (Mn) .....	max. 0.0002 %
Copper (Cu) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.005 %
Heavy metals (as Pb) .....	max. 0.003 %	Calcination residue (as $\text{SO}_4$ ) .....	max. 0.1 %

Code	Capacity
A5108-3-0500	500 g

## AMMONIUM OXALATE MONOHYDRATE



Synonyms : Oxalic acid ammonium salt

- $\text{C}_2\text{H}_8\text{N}_2\text{O}_4 \cdot \text{H}_2\text{O}$
- M = 142.11 g/mol
- CAS [6009-70-7]
- EC number: 214-202-3

- Melting point: 70 °C
- pH (50 g/l  $\text{H}_2\text{O}$ , 25 °C) ~6.3

- S: 24/25-37-46
- Poison class CH (Swiss): 2

### Physical data:

- Spec. density: 1.50 g/cm<sup>3</sup>
- Bulk density: ~480 kg/m<sup>3</sup>
- Solub. in water (20 °C): ~45 g/l

### Toxicological data:

- WGK: 1

### Safety:

- EC Index no.: 607-007-00-3
- R: 21/22

### Transport/storage:

- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- PAX: 619
- CAO: 619
- LGK: 10-13
- Disposal: 14

### A5110-1 Ammonium oxalate monohydrate, reagent grade

HS-No: 2917 11 00 90

Assay (permanganometric) .....	min. 99.5 %	Heavy metals (as Pb) .....	max. 0.0005 %
Insoluble matter .....	max. 0.005 %	Iron (Fe) .....	max. 0.0002 %
pH (2.5%, $\text{H}_2\text{O}$ ) .....	6 - 7	Lead (Pb) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.0005 %	Magnesium (Mg) .....	max. 0.001 %
Nitrates ( $\text{NO}_3$ ) .....	max. 0.0005 %	Sodium (Na) .....	max. 0.001 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.002 %	Potassium (K) .....	max. 0.001 %
Calcium (Ca) .....	max. 0.001 %	Zinc (Zn) .....	max. 0.0005 %
Cadmium (Cd) .....	max. 0.0005 %	Calcination residue (as $\text{SO}_4$ ) .....	max. 0.02%
Copper (Cu) .....	max. 0.0005 %		

Code	Capacity
A5110-1-0500	500 g

## AMMONIUM SULFATE

Synonyms : Sulfuric acid diammonium salt

- $(\text{NH}_4)_2\text{SO}_4$
- M = 132.14 g/mol
- CAS [7783-20-2]
- EC number: 231-984-1

**Physical data:**

- Spec. density: 1.77 g/cm<sup>3</sup>
- Bulk density: ~850 kg/m<sup>3</sup>

- Solub. in water (20 °C): 754 g/l
- Melting point: 280 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 25 °C) ~5.6

**Safety:**

- Poison class CH (Swiss); 5

**Toxicological data:**

- LD 50 (oral, rat): 4250 mg/kg
- WGK: 1

**Transport/storage:**

- LGK: 10-13
- Disposal: 14

A

### A5116-1 Ammonium sulfate, reagent grade

HS-No: 3102 21 00 00

Assay (acidimetric) .....	min. 99.5 %	Copper (Cu) .....	max. 0.0002 %
Insoluble matter .....	max. 0.001 %	Heavy metals (as Pb) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	5 - 6	Iron (Fe) .....	max. 0.0002 %
Chloride (Cl) .....	max. 0.0003 %	Lead (Pb) .....	max. 0.0002 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.0005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0005 %	Zinc (Zn) .....	max. 0.0001 %
Arsenic (As) .....	max. 0.00002 %	Calcination residue (as SO <sub>4</sub> ) .....	max. 0.005 %
Cadmium (Cd) .....	max. 0.0001 %	Loss on drying (105 °C) .....	max. 0.1 %
Calcium (Ca) .....	max. 0.001 %		

Code	Capacity
A5116-1-0500	500 g
A5116-1-1000	1 kg

## AMMONIUM THIOCYANATE



Synonyms : Ammonium sulfocyanate, Ammonium rhodanide, Thiocyanic acid ammonium salt, Ammonium sulfocyanate

- NH<sub>4</sub>SCN
- M = 76.12 g/mol
- CAS [1762-95-4]
- EC number: 217-175-6

**Physical data:**

- Spec. density : 1.31 g/cm<sup>3</sup>
- Bulk density: ~600 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble

- Melting point: 150 °C
- Boiling point: 170 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C): 4.8 - 5.8

**Toxicological data:**

- LD 50 (oral, rat): 500 mg/kg
- WGK: 1

**Safety:**

- EC Index no.: 615-004-00-3
- R: 20/21/22-32
- S: 13-36/37-46
- Poison class CH (Swiss): 3

**Transport/storage:**

- LGK: 10-13
- Disposal: 14

### A5119-1 Ammonium thiocyanate, reagent grade

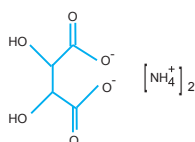
HS-No: 2838 00 00 00

Assay (argentometric) .....	min. 99 %	Copper (Cu) .....	max. 0.0004 %
Insoluble in water .....	max. 0.005 %	Iron (Fe) .....	max. 0.0001 %
pH (5%, H <sub>2</sub> O) .....	4.8 - 5.8	Lead (Pb) .....	max. 0.0004 %
Chlorides (Cl) .....	max. 0.004 %	Calcination residue (as SO <sub>4</sub> ) .....	max. 0.025 %
Sulfides (S) .....	max. 0.001 %	I <sub>2</sub> consuming substances .....	max. 0.004 meq/g
Sulfates (SO <sub>4</sub> ) .....	max. 0.0025 %		

Code	Capacity
A5119-1-0500	500 g

## AMMONIUM TARTRATE

Synonyms : Tartaric acid diammonium salt



- C<sub>4</sub>H<sub>12</sub>N<sub>2</sub>O<sub>6</sub>
- M = 184.15 g/mol
- CAS [3164-29-2]
- EC number: 221-618-9

**Physical data:**

- Spec. density : 1.60 g/cm<sup>3</sup>
- Solub. in water (15 °C): 63 g/l
- pH (50 g/l H<sub>2</sub>O, 20 °C): 6.5 - 7

**Safety:**

- S: 24-25
- Poison class CH (Swiss): 4

**Transport/storage:**

- > LGK: 10-13

### A5126-1 Ammonium tartrate, reagent grade

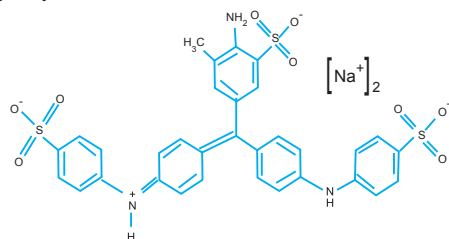
HS-No: 2918 13 00 90

Assay .....	min. 99.0 %	Calcium (Ca) .....	max. 0.002 %
pH (5%, H <sub>2</sub> O) .....	5.5 - 6.5	Heavy metals (as Pb) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.002 %	Iron (Fe) .....	max. 0.001 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.01 %	Sulfated ash (as SO <sub>4</sub> ) .....	max. 0.05 %

Code	Capacity
A5126-1-0500	500 g

## ANILINE BLUE

Synonyms : Acid blue 22



- C<sub>32</sub>H<sub>25</sub>N<sub>3</sub>Na<sub>2</sub>O<sub>9</sub>S<sub>3</sub>
- M = 737.72 g/mol
- CAS [28631-66-5]
- EC number: 249-113-9

**Physical data:**

- Form: solid
- Solub. in water (20 °C): soluble

**Transport/storage:**

- LGK: 10-13

### A5130-0 Aniline blue (water soluble)

HS-No: 3204 12 00 00

Absorption maximum in water .....	595 - 605 nm	Related substances (TLC) .....	passes test
Absorptivity (A1%/1cm, max) .....	250 - 500	Loss on drying (110 °C) .....	max. 7 %

Code	Capacity
A5130-0-0025	25 g

## ANTI BUMPING GRANULES

Synonyms :

CAS [1344-28-1]

**Physical data:**

- Granular

### A5135-0 Anti bumping granules

Standard  
Particle size ~ 1 - 3mm

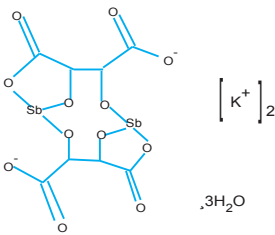
**Code**      **Capacity**  
A5135-0-0250    250 g

Granules of fused alumina, more effective and easier to use than broken porous pot in preventing boiling liquids from "bumping"

## ANTIMONY POTASSIUM TARTRATE



Synonyms : Potassium antimony (III) oxide tartate trihydrate, Potassium antimonyl tartrate, Tartar emetic, Antimony potassium tartrate



-  $C_8H_4K_2O_{12}Sb_2 \cdot 0.5H_2O$   
- M = 333.93 g/mol  
- CAS [28300-74-5]  
- EC number: 234-293-3

**Physical data:**

- Form: Solid  
- Spec. density: 2.6 g/cm<sup>3</sup>  
- Bulk density: ~1250 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 83 g/l  
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~4

**Toxicological data:**

- LD 50 (oral, rat): 115 mg/kg  
- MAK: 0.5 mg/m<sup>3</sup>  
- WGK: 3

**Safety:**

- EC Index no.: 051-003-00-9  
- R: 20/22-51/53  
- S: 46/61  
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 6.1 T5 III UN 1551  
- IMDG: 6.1 T5 III UN 1551  
- IATA/ICAO: 6.1 III UN 1551  
- PAX: 619  
- CAO: 10-13

### A5140-1 Antimony potassium tartrate, reagent grade

Assay .....	min. 99.5 %	Iron (Fe) .....	max. 0.0005 %
Solubility test in water .....	passes test	Lead (Pb) .....	max. 0.0025 %
Free acid alkali .....	passes test	Copper (Cu) .....	max. 0.0025 %
Chloride (Cl) .....	max. 0.001 %	Arsenic (As) .....	max. 0.001 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.001 %		

HS-No: 2918 13 00 90

**Code**      **Capacity**  
A5140-1-0500    500 g

### A5140-3 Antimony potassium tartrate, extra pure

Assay (iodometric) .....	min. 98.0 %	Sulfates (SO <sub>4</sub> ) .....	max. 0.02 %
Insoluble in water .....	max. 0.005 %	Arsenic (As) .....	max. 0.05 %
pH (5%, H <sub>2</sub> O) .....	3.8 - 4.2	Lead (Pb) .....	max. 0.05 %
Chloride (Cl) .....	max. 0.01 %		

HS-No: 2918 13 00 90

**Code**      **Capacity**  
A5140-3-0500    500 g

## ANTIMONY TRICHLORIDE



Synonyms :

- SbCl<sub>3</sub>  
- M = 228.11 g/mol  
- CAS [10025-91-9]  
- EC number: 233-047-2

- Melting point 73 °C  
- Bulk density ~ 1600 kg/m<sup>3</sup>  
- Boiling point 233 °C (1013 hPa)  
- Water absorption hygroscopic

**Physical data:**

- Vapour pressure 0.16 hPa (20 °C)  
- Spec. density: 3.14 g/cm<sup>3</sup> (20 °C)  
- Solub. in water 931 g/l (20 °C) (hydrolysis)  
- pH value acid

**Safety:**

- EC Index No.: 051-001-00-8  
- Corrosive, dangerous for the environment  
- R: 34-51/53  
- S: 26-45-61  
- Poison class (CH)

**Toxicological data:**

- WGK 3\*  
- LD 50 oral 525 mg/kg

**Transport/storage:**

- LGK: 8 B  
- Packing-cat D  
- Disposal 15  
- Road/rail 8/11 b  
- IMDG-Code 8/11 UN 1733  
- IATA/DGR 8

### A5144-1 Antimony Trichloride, reagent grade

Assay .....	min. 99 %	Iron (Fe) .....	max. 0.002 %
Appearance of solution .....	passes test	Arsenic (As) .....	max. 0.005 %
Solubility test in ethanol .....	passes test	Substances not precipitated by hydrogen sulfide (as sulfat) .....	max. 0.2 %
Insolubility matter in hydrochloric acid ...	max. 0.005 %		

HS-No: 2918 13 00 90

**Code**      **Capacity**  
A5144-1-0500    500 g

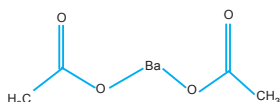
# **Chemical list : B**

## BARIUM ACETATE



Synonyms : Acetic acid barium salt

B



- Ba(CH<sub>3</sub>COO)<sub>2</sub>
- M = 255.43 g/mol
- CAS [543-80-6]
- EC number: 208-849-0

### Toxicological data:

- LD 50 (oral, rat): 921 mg/kg
- MAK: 0.5 mg/m<sup>3</sup>
- WGK: 1

### Transport/storage:

- ADR: 6.1 T5 III UN 1564
- IMDG: 6.1 III UN 1564
- IATA/ICAO: 6.1 III UN 1564
- PAX: 619
- CAO: 619
- LGK: 10-13
- Disposal: 15

### Physical data:

- Spec. density: ~2.47 g/cm<sup>3</sup>
- Bulk density: ~1200 kg/m<sup>3</sup>
- Solub. in water (20 °C): ~720 g/l
- Melting point: ~450 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~6.5 - 8.5

### Safety:

- EC Index no.: 056-002-00-7
- R: 20/22
- S: 28.1-46
- Poison class CH (Swiss): 2

### B1001-1 Barium acetate, reagent grade

HS-No: 2915 29 00 90

Assay (complexometric) .....	min. 99.0 %	Heavy metals (as Pb) .....	max. 0.0005 %
Insoluble in water .....	max. 0.01 %	Iron (Fe) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	7.0 - 8.5	Strontium (Sr) .....	max. 0.15 %
Chloride (Cl) .....	max. 0.0005 %	Non-precipitable with H <sub>2</sub> SO <sub>4</sub> (as SO <sub>4</sub> ) .....	max. 0.1 %
Oxidizing substances (as NO <sub>3</sub> ) .....	max. 0.005 %		
Calcium (Ca) .....	max. 0.005 %		

Code	Capacity
B1001-1-0500	500 g
B1001-1-1000	1 kg

## BARIUM STANDARD SOLUTION 1000MG/L FOR AA

Synonyms : Barium nitrate in acid

### Physical data:

- Form: Liquid
- Density: ~1.01 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- pH (20 °C) < 1

### Toxicological data:

- WGK: 0

### Transport/storage:

- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- PAX: 818
- CAO: 820
- LGK: 8 B

1 ml = 1000±5 mg/l

### B1002-0 Barium standard solution 1000mg/l for AA (barium nitrate in nitric acid 0.5 mol/l)

HS-No: 3822 00 00 00

Composition ..... 1000±5 mg/l

Code	Capacity
B1002-0-0500	500 ml

## BARIUM CHLORIDE DIHYDRATE



Synonyms :

- BaCl<sub>2</sub>·2H<sub>2</sub>O
- M = 244.28 g/mol
- CAS [10326-27-9]
- EC number: 233-788-1

### Toxicological data:

- LD 50 (oral, rat): 118 mg/kg (anhydrous substance)
- MAK: 0.5 mg/m<sup>3</sup>
- WGK: 1

### Transport/storage:

- ADR: 6.1 T5 III UN 1564
- IMDG: 6.1 III UN 1564
- IATA/ICAO: 6.1 III UN 1564
- PAX: 619
- CAO: 619
- LGK: 6.1B
- Disposal: 15

### Physical data:

- Bulk density: ~1200 - 1400 kg/m<sup>3</sup>
- Solub. in water (20 °C): 357 g/l
- Melting point: 962 °C (release of crystalline water)
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 5.2 - 8.2

### Safety:

- EC Index no.: 056-004-00-8
- R: 20-25
- S: 45
- Poison class CH (Swiss): 2

### B1010-1 Barium chloride dihydrate, reagent grade

HS-No: 2827 39 80 90

Assay (complexometric) .....	min. 99 %	Lead (Pb) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	5.2 - 8.2	Magnesium (Mg) .....	max. 0.001 %
Total N .....	max. 0.002 %	Potassium (K) .....	max. 0.002 %
Oxidizing substances .....	max. 0.005 %	Sodium (Na) .....	max. 0.005 %
Heavy metals (as Pb) .....	max. 0.0005 %	Strontium (Sr) .....	max. 0.05 %
Calcium (Ca) .....	max. 0.005 %	Loss on drying (150 °C) .....	14 - 16
Iron (Fe) .....	max. 0.0001 %		

Code	Capacity
B1010-1-0500	500 g
B1010-1-1000	1 kg

## BARIUM HYDROXIDE OCTAHYDRATE



Synonyms : Caustic baryta, Barium oxide hydrate octahydrate

- Ba(OH)<sub>2</sub>·8H<sub>2</sub>O
- M = 315.48 g/mol
- CAS [12230-71-6]
- EC number: 241-234-5

- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 12.5

- Poison class CH (Swiss): 2

### Physical data:

- Spec. density: 2.18 g/cm<sup>3</sup>
- Bulk density: ~900 - 1100 kg/m<sup>3</sup>
- Solub. in water (15 °C): 56 g/l
- Melting point: 78 °C

### Toxicological data:

- MAK: 0.5 mg/m<sup>3</sup>
- WGK: 1

### Transport/storage:

- ADR: 8 CT2 II UN 2923
- IMDG: 8 II UN 2923
- IATA/ICAO: 8 II UN 2923
- PAX: 814
- CAO: 816
- LGK: 8 B
- Disposal: 28

### Safety:

- R: 20/22-34
- S: 26-36/37/39-45



**B1014-1 Barium hydroxide octahydrate, reagent grade**

HS-No: 2816 40 00 00

Assay (acidimetric) .....	min. 98 %	Heavy metals (as Pb) .....	max. 0.0005 %
Insoluble in hydrochloric acid .....	max. 0.005 %	Lead (Pb) .....	max. 0.0005 %
Carbonates (BaCO <sub>3</sub> ) .....	max. 2 %	Magnesium (Mg) .....	max. 0.002 %
Chlorides (Cl) .....	max. 0.001 %	Potassium (K) .....	max. 0.005 %
Sulfides (S) .....	max. 0.0005 %	Sodium (Na) .....	max. 0.005 %
Calcium (Ca) .....	max. 0.002 %	Strontium (Sr) .....	max. 1.5 %
Cadmium (Cd) .....	max. 0.0005 %	Zinc (Zn) .....	max. 0.0005 %
Copper (Cu) .....	max. 0.0005 %	Non precipitable with sulfuric acid	
Iron (Fe) .....	max. 0.0005 %	(as SO <sub>4</sub> ) .....	max. 0.2 %

Code	Capacity
B1014-1-0500	500 g

**B****B1014-3 Barium hydroxide octahydrate, reagent grade**

HS-No: 2816 40 00 00

Assay (complexometric) .....	min. 97 %	Heavy metals (as Pb) .....	max. 0.001 %
Insoluble in hydrochloric acid .....	max. 0.01 %	Iron (Fe) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.005 %	Lead (Pb) .....	max. 0.002 %
Sulfides (S) .....	max. 0.001 %	Nickel (Ni) .....	max. 0.002 %
Calcium (Ca) .....	max. 0.005 %	Non precipitable with H <sub>2</sub> SO <sub>4</sub> (as SO <sub>4</sub> )	
Copper (Cu) .....	max. 0.002 %	.....	max. 0.2 %

Code	Capacity
B1014-3-1000	1 kg

**BARIUM NITRATE**

Synonyms : Nitric acid barium salt

- Ba(NO<sub>3</sub>)<sub>2</sub>
- M = 261.35 g/mol
- CAS [10022-31-8]
- EC number: 233-020-5

**Toxicological data:**

- LD 50 (oral, rat): 355 mg/kg
- MAK: 0.5 mg/m<sup>3</sup>
- WGK: 1

**Transport/storage:**

- ADR: 5.1 OT2 II UN 1446
- IMDG: 5.1 II UN 1446
- IATA/ICAO: 5.1 II UN 1446
- PAX: 508
- CAO: 511
- LGK: 5.1B
- Disposal: 28

**Physical data:**

- Spec. density: 3.2 g/cm<sup>3</sup>
- Bulk density: ~ 1750 kg/m<sup>3</sup>
- Solub. in water (20 °C): 90 g/l
- Melting point: 592 - 595 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 5.2

**Safety:**

- EC Index no.: 056-002-00-7
- R: 20/22
- S: 28.1-46
- Poison class CH (Swiss): 2

**B1020-1 Barium nitrate, reagent grade**

HS-No: 2834 29 20 00

Assay (complexometric) .....	min. 99 %	Iron (Fe) .....	max. 0.0002 %
pH (5%, H <sub>2</sub> O) .....	5 - 7	Magnesium (Mg) .....	max. 0.002 %
Chlorides (Cl) .....	max. 0.0005 %	Potassium (K) .....	max. 0.005 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %	Sodium (Na) .....	max. 0.005 %
Calcium (Ca) .....	max. 0.002 %	Strontium (Sr) .....	max. 0.05 %
Heavy metals (as Pb) .....	max. 0.0005 %		

Code	Capacity
B1020-1-0500	500 g
B1020-1-0500	500 g

**BARIUM SULFATE**

Synonyms : Sulfuric acid barium salt, Blanc fixe

- BaSO<sub>4</sub>
- M = 233.40 g/mol
- CAS [7727-43-7]
- EC number: 231-784-4

- Solub. in water (20 °C): < 0.01 g/l
- Melting point: 1580 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~7

**Safety:**

- Poison class CH (Swiss): F

**Physical data:**

- Spec. density: 4.5 g/cm<sup>3</sup>
- Bulk density: ~700 kg/m<sup>3</sup>

**Toxicological data:**

- LD 50 (oral, rat): >15000 mg/kg
- MAK: 1.5 mg/m<sup>3</sup>
- WGK: 0

**Transport/storage:**

- LGK: 10-13
- Disposal: 14

**B1029-1 Barium sulfate, reagent grade**

HS-No: 2833 27 00 00

Sodium matter in hydrochloric acid .....	max. 0.15%	Iron (Fe) .....	max. 0.0005%
Loss on ignition .....	max. 1.5%	Arsenic (As) .....	max. 0.0001%
Chloride (Cl) .....	max. 0.005%	Soluble barium salts (as Ba) .....	max. 0.0001%
Soluble sulfate (as SO <sub>4</sub> ) .....	max. 0.005%	Heavy metals (as Pb) .....	max. 0.0005%
Total nitrogen (N) .....	max. 0.005%		

Code	Capacity
B1029-1-0500	500 g
B1029-1-1000	1 kg

**B1029-3 Barium sulfate, extra pure**

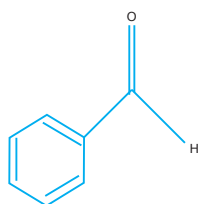
HS-No: 2833 27 00 00

Soluble in acid .....	max. 0.3 %	Heavy metals (as Pb) .....	max. 0.001 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.005 %	Calcination residue (600 °C) .....	max. 2 %
Arsenic (As) .....	max. 0.0001 %		

Code	Capacity
B1029-3-0500	500 g
B1029-3-1000	1 kg

**BENZALDEHYDE**

Synonyms : Benzoic aldehyde, Bitter almond oil



- C<sub>7</sub>H<sub>6</sub>O
- M = 106-13 g/mol
- CAS [100-52-7]
- EC number: 202-860-4

- Refraction index: (n<sub>20</sub> °C/D) 1.5450
- Expl. limit (upper): 8.5 Vol%
- Expl. limit (lower): 1.4 Vol%
- pH (1 g/l H<sub>2</sub>O, 20 °C) ~5.9

- S: 24-46
- VbF class: AllI
- Poison class CH (Swiss): 4

**Physical data:**

- Density: 1.05 g/cm<sup>3</sup>
- Solub. in water (20 °C): 3.3 g/l
- Melting point: -56 °C
- Boiling point: 179 °C
- Flash point: 64 °C
- Ignition temp.: 190 °C
- Vapour pressure: (20 °C) 1.3 hPa

**Toxicological data:**

- LD 50 (oral, rat): 1300 mg/kg
- WGK: 2

**Safety:**

- EC Index no.: 605-012-00-5
- R: 22

**Transport/storage:**

- ADR: 9M11 III UN 1990
- IMDG: 9 III UN 1990
- IATA/ICAO: 9 III UN 1990
- PAX: 907
- CAO: 907
- LGK: 3 B
- Disposal: 1

**B2005-2 Benzaldehyde, synthesis grade**

HS-No: 2912 21 00 00

Assay (G.C) ..... min. 99 %  
 Water ..... max. 0.1 %

Code	Capacity
B2005-2-1000	1 L
B2005-2-2500	2.5 L

**B****B2005-3 Benzaldehyde, extra pure**

HS-No: 2912 21 00 00

Appearance ..... Almond Odor Liquid Density (20 °C) ..... 1.041 ~ 1.050 g/ml  
 Identification ..... IR Spcetrymetry Chlorine compounds (as Cl) .... max. 0.02 %  
 Assay (by GC) ..... min. 99.0 %

Code	Capacity
B2005-3-1000	1 L
B2005-3-2500	2.5 L

**BENZENE**

Synonyms : Cyclohexatriene



- C<sub>6</sub>H<sub>6</sub>  
 - M = 78.11 g/mol  
 - CAS [71-43-2]  
 - EC number: 200-753-7

**Physical data:**

- Density: 0.88 g/cm<sup>3</sup>  
 - Solub. in water (20 °C): 1.77 g/l  
 - Melting point: 5.5 °C  
 - Boiling point: 80.1 °C  
 - Flash point: -11 °C  
 - Ignition temp: 555 °C  
 - Vapour pressure: (20 °C) 101 hPa  
 - Refraction index: (n 20 °C/D) 1.5011

- Viscosity: (20 °C) 0.66 mPas  
 - Dielectric const: (20 °C) 2.3  
 - Evap. heat: (80 °C) 550 KJ/kg  
 - Saturation conc.: (20 °C) 319 g/m<sup>3</sup>  
 - Expl. limit (upper): 8.0 Vol%  
 - Expl. limit (lower): 1.4 Vol%

**Toxicological data:**

- LD 50 (oral, rat): 930 mg/kg  
 - WGK: 3

**Safety:**

- EC Index no.: 601-020-00-8

- R: 45-11-E48/23/24/25  
 - S: 53-36/37-45  
 - VbF class: A1  
 - Poison class CH (Swiss): 1\*

**Transport/storage:**

- ADR: 3 F1 II UN 1114  
 - IMDG: 3 II UN 1114  
 - IATA/ICAO: 3 II UN 1114  
 - PAX: 305  
 - CAO: 307  
 - LGK: 3 A  
 - Disposal: 9

**B2027-1 Benzene, reagent grade**

HS-No: 2902 20 00 00

Assay ..... min. 99 % Thiophene ..... passes test ~ 1 ppm  
 Colour ..... max. 10 APHA Sulphur compounds (as S) ..... max. 0.005 %  
 Residue after evaporation ..... max. 0.001 % Water ..... max. 0.05 %  
 Substances darkened by Sulphuric acid ..... passes test

Code	Capacity
B2027-1-2501	2.5 L

**B2027-4 Benzene, HPLC**

HS-No: 2902 20 00 00

See specification in Solvents Specification - 30

Code	Capacity
B2027-4-1001	1.0 L
B2027-4-4001	4.0 L

**B2027-11 Benzene, Pesticide grade**

HS-No: 2902 20 00 00

See specification in Solvents Specification - 21

Code	Capacity
B2027-11-1001	1.0 L
B2027-11-4001	4.0 L

**B2027-12 Benzene, Ultimate grade**

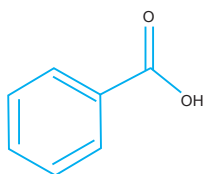
HS-No: 2902 20 00 00

See specification in Solvents Specification - 11

Code	Capacity
B2027-12-1001	1.0 L
B2027-12-4001	4.0 L

**BENZOIC ACID**

Synonyms : Benzenecarboxylic acid, Phenylformic acid



- C<sub>7</sub>H<sub>6</sub>O<sub>2</sub>  
 - M = 122.12 g/mol  
 - CAS [65-85-0]  
 - EC number: 200-618-2

**Physical data:**

- Spec. density: 1.321 g/cm<sup>3</sup>  
 - Bulk density: ~ 500 kg/m<sup>3</sup>  
 - Solub. in water (20 °C): 3.4 g/l

- Melting point: 121.5 - 123.0 °C  
 - Boiling point: ~ 249 °C  
 - Flash point: 121.1 °C  
 - Ignition temp.: 532 °C  
 - Vapour pressure: (20 °C) 1.3 hPa  
 - pH (10 g/l H<sub>2</sub>O) 3

**Toxicological data:**

- LD 50 (oral, rat): 1700 mg/kg  
 - WGK: 1

**Safety:**

- R: 22-36  
 - S: 24-46  
 - Poison class CH (Swiss): 4

**Transport/storage:**

- LGK: 10-13  
 - Disposal: 4

**B2042-1 Benzoic acid, reagent grade**

HS-No: 2916 31 00 000

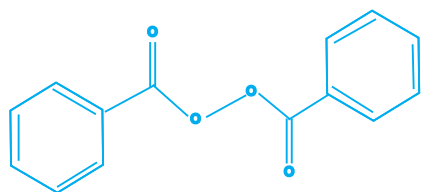
Assay (acidimetric) ..... min. 99.9 % Copper (Cu) ..... max. 0.0005 %  
 Insoluble in methanol ..... max. 0.005 % Iron (Fe) ..... max. 0.0002 %  
 Halogen compounds (as Cl) ..... max. 0.005 % Heavy metals (as Pb) ..... max. 0.0005 %  
 Oxidizable impurities ..... passes test Lead (Pb) ..... max. 0.0002 %  
 S compounds (as S) ..... max. 0.002 % Zinc (Zn) ..... max. 0.0005 %  
 Sulfates (SO<sub>4</sub>) ..... max. 0.002 % Sulfated ash ..... max. 0.005 %

Code	Capacity
B2042-1-0500	500 g

## BENZOYL PEROXIDE



Synonyms : Dibenzoyl peroxide



- C<sub>14</sub>H<sub>10</sub>O<sub>4</sub>
- M = 242.23 g/mol
- CAS [94-36-0]
- EC number: 202-327-6

### Physical data:

- Form: Solid
- Spec. Density: 0.53 g/cm<sup>3</sup>
- Bulk Density: ~500 - 600 g/cm<sup>3</sup>
- Solub. in water (20 °C): almost insoluble
- Melting point: 100 - 105 °C (decomposes)

### Toxicological data:

- LD 50 (oral, rat): >5000 mg/kg
- MAK: 5 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 617-008-00-0
- R: 2-36-43

- S: 3/7-14.9-24-36/37/39

- Poison class CH (Swiss): F

### Transport/storage:

- ADR: 5.2 P1 - UN 3104
- IMDG: 5.2 II UN 3104
- IATA/ICAO: 5.2 II UN 3104
- PAX: 510
- CAO: 513
- LGK: 5.2
- Disposal: 10

### B2055-1 Benzoyl peroxide, reagent grade

HS-No: 2916 32 10 00

Assay (as dring) .....	min. 99 %	Loss on drying .....	30 - 40 %
Melting range (as drying) °C .....	102 - 106 °C	Phosphate (PO <sub>4</sub> ) .....	max. 0.5 %
Solubility test in benzene (as drying) .....	passes test	Acidity and alkalinity .....	passes test

Code	Capacity
B2055-1-0500	500 g

## BISMUTH OXIDE

Synonyms :

- Bi<sub>2</sub>O<sub>3</sub>
- M = 465.96 g/mol
- CAS [1304-76-3]
- EC number: 215-134-7

### Physical data:

- Spec. density: 8.93 g/cm<sup>3</sup>
- Bulk density: ~1000 kg/m<sup>3</sup>
- Solub. in water (20 °C): almost insoluble
- Melting point: 817 °C
- Boiling point: 1890 °C

### Toxicological data:

- LD 50 (oral, rat): 5000 mg/kg
- WGK: 1

### Transport/storage:

- LGK: 10-13

### B3012-1 Bismuth oxide, reagent grade

HS-No: 2825 90 80 00

Assay (complexometric) .....	min. 99.5 %	Copper (Cu) .....	max. 0.005 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.05 %	Calcination residue (1000 °C) .....	max. 0.5 %
Arsenic (As) .....	max. 0.0005 %		

Code	Capacity
B3012-1-0500	500 g

### B3012-2 Bismuth oxide, synthesis grade

HS-No: 2825 90 80 00

Assay (complexometric) .....	min. 99.5 %	Copper (Cu) .....	max. 0.005 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.05 %	Calcination residue (1000 °C) .....	max. 0.5 %
Arsenic (As) .....	max. 0.0005 %		

Code	Capacity
B3012-2-0500	500 g

## BORIC ACID

Synonyms : Ortoboric acid

- H<sub>3</sub>BO<sub>3</sub>
- M = 61.84 g/mol
- CAS [10043-35-3]
- EC number: 233-139-2
- Melting point: 185 °C (decomposes)
- Vapour pressure: (20 °C) 2.7 hPa
- pH (33 g/l H<sub>2</sub>O, 20 °C) 3.8 - 4.8

### Physical data:

- Spec. density: 1.51 g/cm<sup>3</sup>
- Bulk density: ~ 400 - 600 kg/m<sup>3</sup>
- Solub. in water (20 °C): 46.5 g/l

### Toxicological data:

- LD 50 (oral, rat): 2660 mg/kg
- WGK: 1

### Safety:

- poison class CH (Swiss): 4

### Transport/storage:

- LGK: 10-13
- Disposal: 28

### B5010-1 Boric acid, reagent grade

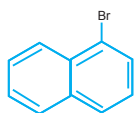
HS-No: 2810 00 90 00

Assay (acidimetric) .....	min. 99.8 %	Calcium (Ca) .....	max. 0.002 %
pH (4%, H <sub>2</sub> O) .....	3.6 - 4.0	Cadmium (Cd) .....	max. 0.0005 %
Insoluble in methanol .....	max. 0.005 %	Copper (Cu) .....	max. 0.0005 %
With Methanol-HCL		Heavy metals (as Pb) .....	max. 0.0005 %
non-volatile matter .....	max. 0.05 %	Iron (Fe) .....	max. 0.0001 %
Chloride (Cl) .....	max. 0.0003 %	Lead (Pb) .....	max. 0.0005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0005 %	Magnesium (Mg) .....	max. 0.0005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.0005 %	Zinc (Zn) .....	max. 0.0005 %
Arsenic (As) .....	max. 0.00005 %		

Code	Capacity
B5010-1-0500	500 g
B5010-1-1000	1 kg

## 1-BROMONAPHTHALENE

Synonyms :  $\alpha$ -Naphthyl bromide



-  $C_{10}H_7Br$   
- M = 207.08 g/mol  
- CAS [90-11-9]  
- EC number: 201-965-2

**Physical data:**

- Refractive index 1.6576 (20 °C, 589 nm)  
- Spec. density: 1.48 g/cm<sup>3</sup> (20 °C)  
- Flash point 66 °C  
- Solub. in water (20 °C): insoluble  
- Melting point: 0 - 2 °C  
- Boiling point 280 - 282 °C  
- VbF-class. All

**Safety:**

- EC Index no.: 201-965-2

**Transport/storage:**

- LGK: 3 B  
- Disposal: 2

### B6000-3 1-Bromonaphthalene, extra pure

HS-No: 2903 69 90 00

Assay ..... min. 96 %  
Density (d 20°/4°) ..... 1.484 - 1.489 °C  
Identity (IR) ..... conforms

Code	Capacity
B6000-3-0100	100 ml

## BROMINE WATER



Synonyms :

-  $Br_2$   
- M = 159.92 g/mol  
- CAS [7726-95-6]  
- EC number: 231-778-1

**Safety:**

- EC Index no.: 035-001-00-5  
- R: 23-36/38-51  
- S: 23.2-51-26-37-45-61

**Transport/storage:**

- ADR: 8 CT1 II UN 2922  
- IMDG: 8 II UN 2922  
- IATA/ICAO: 8 II UN 2922  
- PAX: 808  
- CAO: 812

**Physical data:**

- Form: solid  
- Density: ~1.008 g/cm<sup>3</sup>

### B6007-0 Bromine water, saturated solution

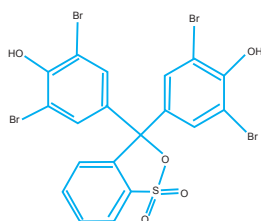
HS-No: 2801 30 90 00

Assay (bromometric) ..... approx. 3 %

Code	Capacity
B6007-0-0500	500 ml
B6007-0-1000	1 L

## BROMOPHENOL BLUE

Synonyms : BPB, 3, 3',5,5',-Tetrabromophenolsulfonphthalein



-  $C_{19}H_{10}Br_4O_5S$   
- M = 669.96 g/mol  
- CAS [115-39-9]  
- EC number: 204-086-2

- Solub. in water (20 °C): almost insoluble  
- Melting point: 273 °C (decomposes)

**Physical data:**

- Form: Solid  
- Bulk density: ~730 kg/m<sup>3</sup>

**Transport/storage:**

- LGK: 10-13

### B6030-0 Bromophenol blue, indicator

HS-No: 2934 99 90 99

pH range (greenish-yellow to blue-violet)	3.1 - 4.4	Absorptivity (A1%/1cm ; 2	
Absorption maximum 1 (pH 3.0)	434 - 439 nm	(pH4.6 on dried material)	940 - 1000
Absorption maximum 2 (pH 4.6)	590 - 593 nm	Transition range acc. ACS	passes test
Absorptivity (A1%/1cm; 1		Loss on drying (110 °C)	max. 1 %
(pH 3.0 on dried material)	350 - 385		

Code	Capacity
B6030-0-0100	100 g

## n-Butyl acetate



Synonyms :

-  $CH_3CO_2(CH_2)_3CH_3$   
- F.W.: 116.16  
- CAS: 123-86-4

**Physical Data:**

- Eluotropic value ( $E^0$ ) (on Alumina): 4.0  
- Viscosity (cP, 25 °C): 0.685  
- Density (g/ml, 25 °C): 0.876  
- Boiling point (°C): 126  
- Solubility of water (% , 20 °C): 1.86  
- Refractive index (25 °C): 1.392

### B6060-4 n-Butyl acetate, HPLC Grade

HS-No: 2915 33 00

See specification in Solvents Specification - 34

Code	Capacity
B6060-4-1001	1.0L
B6060-4-2501	4.0L

**BUFFER SOLUTION****A7011-0 Buffer solution pH 10.00** (Solution carbonate/sodium hydrogen carbonate)

Synonyms :

<b>Physical data:</b>	- pH (H <sub>2</sub> O, 20 °C) 10.0	<b>Transport/storage:</b>	HS-No: 3822 00 00 00
- Form: Solid		- LGK: 10-13	
- Density: 1.00 g/cm <sup>3</sup>	<b>Toxicological data:</b>		<b>Code</b> <b>Capacity</b>
- Solub. in water (20 °C):	- WGK: 0		A7011-0-1000 1 L
miscible		pH = 10.00 ± 0.02 at 20 °C	
- Melting point: -6 °C	<b>Safety:</b>		
- Boiling point: 110 °C	- Poison class CH (Swiss): F		

Deviations of pH (ΔpH) at various temperatures:

- 0 °C .....	10.25	- 30 °C .....	9.93
- 5 °C .....	10.18	- 35 °C .....	9.91
- 10 °C .....	10.12	- 40 °C .....	9.89
- 15 °C .....	10.06	- 45 °C .....	9.83
- 20 °C .....	10.00	- 50 °C .....	9.78
- 25 °C .....	9.97		

**A7013-0 Buffer solution pH 10.00** (boric acid/potassium chloride/sodium hydroxide)

Synonyms :

<b>Physical data:</b>	<b>Toxicological data:</b>	<b>Transport/storage:</b>	HS-No: 3822 00 00 00
- Density: 1.00 g/cm <sup>3</sup>	- WGK: 0	- LGK: 10-13	
- Solub. in water (20 °C):			<b>Code</b> <b>Capacity</b>
miscible	<b>Safety:</b>		A7013-0-1000 1 L
- Melting point: -6 °C	- Poison class CH (Swiss): F	pH = 10.00 ± 0.02 at 25 °C	
- Boiling point: 110 °C		Certified traceable to N.I.S.T buffers	
- pH (H <sub>2</sub> O, 20 °C) 10.0			

Deviations of pH (ΔpH) at various temperatures:

- 0 °C .....	10.32	- 30 °C .....	9.97
- 10 °C .....	10.18	- 40 °C .....	9.89
- 20 °C .....	10.06	- 50 °C .....	9.83
- 25 °C .....	10.00		

**A7029-0 Buffer solution pH 4.00** (potassium hydrogen phthalate)

HS-No: 3822 00 00 00

Synonyms :

<b>Physical data:</b>	<b>Toxicological data:</b>	<b>Transport/storage:</b>	<b>Code</b> <b>Capacity</b>
- Density: 1.01 g/cm <sup>3</sup>	- WGK: 1	- LGK: 10-13	A7029-0-1000 1 L
- Solub. in water (20 °C):			
miscible	<b>Safety:</b>		
- pH (20 °C) 4.00	- Poison class CH (Swiss): F	pH = 4.00 ± 0.02 at 20 °C	
		Certified traceable to N.I.S.T buffers	

Deviations of pH (ΔpH) at various temperatures:

- 0 °C .....	+ 0.05	- 20 °C .....	+/- 0
- 5 °C .....	+ 0.04	- 25 °C .....	+ 0.01
- 10 °C .....	+ 0.02	- 30 °C .....	+ 0.01
- 15 °C .....	+ 0.01	- 35 °C .....	+ 0.01

**A7034-0 Buffer solution pH 4.01** (potassium hydrogen phthalate)

HS-No: 3822 00 00 00

Synonyms :

<b>Physical data:</b>	<b>Toxicological data:</b>	<b>Transport/storage:</b>	<b>Code</b> <b>Capacity</b>
- Form: Solid	- WGK: 0	- LGK: 10-13	A7034-0-1000 1 L
- Density: 1 g/cm <sup>3</sup>			
- Solub. in water (20 °C):	<b>Safety:</b>		
miscible	- Poison class CH (Swiss): F	pH = 4.01 ± 0.02 at 25 °C	
- pH (20 °C) 4.01			

Deviations of pH (ΔpH) at various temperatures:

- 0 °C .....	4.00	- 50 °C .....	4.06
- 10 °C .....	4.00	- 60 °C .....	4.09
- 20 °C .....	4.00	- 70 °C .....	4.13
- 25 °C .....	4.01	- 80 °C .....	4.16
- 30 °C .....	4.02	- 950 °C .....	4.20
- 40 °C .....	4.04		

**A7035-0 Buffer solution pH 5.00** (citrate/sodium hydroxide)

HS-No: 3822 00 00 00

Synonyms :

<b>Physical data:</b>	<b>Toxicological data:</b>	<b>Transport/storage:</b>	<b>Code</b> <b>Capacity</b>
- Spec. density 1.01g/cm <sup>3</sup>	- WGK: 1	- LGK: 10-13	A7035-0-1000 1 L
- Solub. in water (20 °C):			
soluble	<b>Safety:</b>		
- pH value 5.0 (20 °C)	- Poison class CH (Swiss): F	pH = 5.00 ± 0.02 at 20 °C	



## Deviations of pH ( pH) at various temperatures:

- 0 °C .....	+ 0.06	- 25 °C .....	+/- 0
- 5 °C .....	+ 0.05	- 30 °C .....	+/- 0
- 10 °C .....	+ 0.02	- 35 °C .....	+/- 0
- 15 °C .....	+ 0.01	- 40 °C .....	+/- 0
- 20 °C .....	+/- 0	- 50 °C .....	+ 0.01

**A7039-0 Buffer solution pH 7.00** (potassium hydrogen phthalate/di-sodium hydrogen phosphate)

Synonyms :

HS-No: 3822 00 00 00

**Physical data:**

- Density: 1.01 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting poing: -5 °C
- Boiling poing: 109 °C
- pH (20 °C) 7.00

**Toxicological data:**

- WGK: 0

**Transport/storage:**

- LGK: 10-13

Code	Capacity
A7039-0-1000	1 L

**Safety:**

- Poison class CH (Swiss): F
- pH = 7.00 ± 0.02 at 25 °C
- Certified traceable to N.I.S.T buffers

## Deviations of pH ( pH) at various temperatures:

- 0 °C .....	7.12	- 40 °C .....	6.98
- 10 °C .....	7.06	- 50 °C .....	6.97
- 20 °C .....	7.02	- 60 °C .....	6.98
- 25 °C .....	7.00	- 70 °C .....	6.98
- 30 °C .....	6.99		

**A7049-0 Buffer solution pH 9.00** (boric acid/potassium chloride/sodium hydroxide)

Synonyms :

HS-No: 3822 00 00 00

**Physical data:**

- Density: ~ 1.00 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- pH (H<sub>2</sub>O, 20 °C) 9.0

**Toxicological data:**

- WGK: 0

**Transport/storage:**

- LGK: 10-13

Code	Capacity
A7049-0-1000	1 L

**Safety:**

- Poison class CH (Swiss): F
- pH = 9.00 ± 0.02 at 20 °C
- Certified traceable to N.I.S.T buffers

## Deviations of pH ( pH) at various temperatures:

- 0 °C .....	9.24	- 30 °C .....	8.91
- 5 °C .....	9.16	- 35 °C .....	8.88
- 10 °C .....	9.11	- 40 °C .....	8.85
- 15 °C .....	9.05	- 45 °C .....	8.82
- 20 °C .....	9.00	- 50 °C .....	8.79
- 25 °C .....	8.95		

**A7049-6 Buffer solution pH 9.00 EC grade**

Synonyms :

HS-No: 3822 00 00 00

**Physical data:**

- Density: ~ 1.00 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- pH (H<sub>2</sub>O, 20 °C) 9.0

**Toxicological data:**

- WGK: 0

**Transport/storage:**

- LGK: 10-13

Code	Capacity
A7049-6-1000	1 L

**Safety:**

- Poison class CH (Swiss): F
- pH = 9.00 ± 0.02 at 20 °C
- Certified traceable to N.I.S.T buffers

## Deviations of pH ( pH) at various temperatures:

- 0 °C .....	9.23	- 50 °C .....	8.78
- 10 °C .....	9.10	- 60 °C .....	8.73
- 20 °C .....	9.00	- 70 °C .....	8.69
- 30 °C .....	8.91	- 80 °C .....	8.66
- 40 °C .....	8.84	- 90 °C .....	8.62

**1-BUTANOL**

Synonyms : n-Butyl alcohol, Propylcarbinol



- C<sub>4</sub>H<sub>10</sub>O
- M = 74.12 g/mol
- CAS [71-36-3]
- EC number: 200-751-6

**Physical data:**

- Density: 0.81 g/cm<sup>3</sup>
- Solub. in water (20 °C): 79 g/l
- Melting poing: -89.5 °C
- Boiling poing: 118 °C
- Flash poing: 30 °C
- Ignition temp.: 340 °C
- Vapour pressure: (20 °C) 6.7 hPa
- Refraction index: (n 20 °C/D) 1.3993
- Viscosity: (20 °C) 2.95 mPa

- Dipolar moment: (20 °C) 1.66 Debye
- Dielectric const.: (20 °C) 17.8
- Saturation conc.: (20 °C) 20 g/m<sup>3</sup>
- Expl. limit (upper): 11.3 Vol%
- Expl. limit (lower): 1.4 Vol%
- pH (70 g/l H<sub>2</sub>O, 20 °C) 7

**Toxicological data:**

- LD 50 (oral, rat): 790 mg/kg
- MAK: 100ml/m<sup>3</sup>, 310 mg/m<sup>3</sup>
- WGK: 1
- Safety:**
- EC Index no.: 603-004-00-6 [1]
- R: 10-22-37/38-41-67

- S: 7/9-13-26-37/39-46
- VbF class: All
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 3 F1 III UN 1120
- IMDG: 3 III UN 1120
- IATA/ICAO: 3 III UN 1120
- PAX: 309
- CAO: 310
- LGK: 3 A
- Disposal: 1

**BU103-1 1 Butanol, reagent grade**

HS-NO: 2905 13 00 00

Assay .....	min. 99.5 %	Lead (Pb) .....	max. 0.00001 %
Colour .....	max. 10 Hazen	Magnesium (Mg) .....	max. 0.00001 %
Free Acid (as C <sub>3</sub> H <sub>7</sub> COOH) .....	max. 0.005 %	Manganese (Mn) .....	max. 0.000002 %
Aldehydes .....	passes test	Nickel (Ni) .....	max. 0.000002 %
Carbonyl compounds (as CO) .....	max. 0.01 %	Tin (Sn) .....	max. 0.00001 %
Aluminium (Al) .....	max. 0.00005 %	Zinc (Zn) .....	max. 0.00001 %
Barium (Ba) .....	max. 0.00001 %	Dibutyl Ether (G.C) .....	max. 0.1 %
Boron (B) .....	max. 0.000002 %	2-Butanol (G.C) .....	max. 0.05 %
Cadmium (Cd) .....	max. 0.000005 %	Isobutanol (G.C) .....	max. 0.15 %
Calcium (Ca) .....	max. 0.00005 %	Butyraldehyde (G.C) .....	max. 0.01 %
Cobalt (Co) .....	max. 0.000002 %	Substances Darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Copper (Cu) .....	max. 0.000002 %	Non-volatile matter .....	max. 0.0005 %
Chromium (Cr) .....	max. 0.000002 %	Water .....	max. 0.1 %
Iron (Fe) .....	max. 0.0001 %		

Code	Capacity
BU103-1-2500	2.5L

**BU103-3 1-Butanol, extra pure**

HS-NO: 2905 13 00 00

Assay (G.C) .....	min. 99.5 %	Nickel (Ni) .....	max. 0.00002 %
Identity (IR-spectrum) .....	passes test	Acetone (G.C) .....	max. 0.02 %
Density (20 °/4 °) .....	0.809 - 0.810	Butyraldehyde (G.C) .....	max. 0.03 %
Acidity .....	max. 0.0008 meq/g	di-n-Butylether (G.C) .....	max. 0.2 %
Alkalinity .....	max. 0.001 meq/g	Iso-Butanol (G.C) .....	max. 0.25 %
Copper (Cu) .....	max. 0.00002 %	Non-volatile matter .....	max. 0.004 %
Iron (Fe) .....	max. 0.00005 %	Water (K.F) .....	max. 0.1 %
Lead (Pb) .....	max. 0.00002 %		

Code	Capacity
BU103-3-2500	2.5L

**BU103-4 1-Butanol, HPLC grade**

HS-NO: 2905 13 00 00

See specification in Solvent Specification - 33

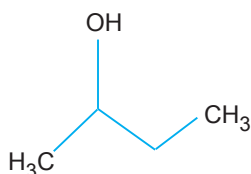
Code	Capacity
BU103-4-1001	1.0L
BU103-4-4001	4.0L

**BU103-11 1-Butanol, Pesticide grade**

HS-NO: 2905 13 00 00

See specification in Solvent Specification - 21

Code	Capacity
BU103-11-1001	1.0L
BU103-11-4001	4.0L

**2-BUTANOL**Synonyms : *sec-Butyl alcohol, Butyl alcohol secondary, Ethyl methyl carbinol*

- C<sub>4</sub>H<sub>10</sub>O
- M = 74.12 g/mol
- CAS [78-92-2]
- EC number: 201-158-5

**Physical data:**

- Density: 0.81 g/cm<sup>3</sup>
- Solub. in water (20 °C): 240 - 250 g/l
- Melting poing: -114 °C
- Boiling poing: 98.5 - 100.5 °C
- Flash poing: 24 °C
- Ignition temp.: 390 °C
- Vapour pressure: (20 °C) 16.5 hPa
- Viscosity: (20 °C) 4.21 mPas

- Dielectric const.: (20 °C) 15.8
- Saturation conc.: (20 °C) 52 g/m<sup>3</sup>
- Expl. limit (upper): 9.8 Vol%
- Expl. limit (lower): 1.4 Vol%

**Toxicological data:**

- LD 50 (oral, rat): 6480 mg/kg
- MAK: 100ml/m<sup>3</sup>, 310 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 603-004-01-3 [1]
- R: 10-36/37-67

- S: 7/9-13-24/25-26-46
- VbF class: All
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 3 F1 III UN 1120
- IMDG: 3 III UN 1120
- IATA/ICAO: 3 III UN 1120
- PAX: 309
- CAO: 310
- LGK: 3 A
- Disposal: 1

**BU117-1 2-Butanol, reagent grade**

HS-NO: 2905 14 90 00

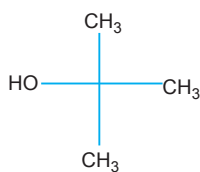
Assay .....	min. 99.5 %	Lead (Pb) .....	max. 0.00001 %
Clour .....	max. 10 Hazen	Magnesium (Mg) .....	max. 0.00001 %
Acidity .....	max. 0.0005 meq/g	Manganese (Mn) .....	max. 0.000002 %
Alkalinity .....	max. 0.0002 meq/g	Nickel (Ni) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.00005 %	Tin (Sn) .....	max. 0.00001 %
Barium (Ba) .....	max. 0.00001 %	Zinc (Zn) .....	max. 0.00001 %
Boron (B) .....	max. 0.000002 %	Tert-butanol (G.C) .....	max. 0.1 %
Cadmium (Cd) .....	max. 0.000005 %	Dibutyl ether (G.C) .....	max. 0.2 %
Calcium (Ca) .....	max. 0.00005 %	Methyl ethyl ketone (G.C) .....	max. 0.1 %
Cobalt (Co) .....	max. 0.000002 %	2-Propanol (G.C) .....	max. 0.2 %
Copper (Cu) .....	max. 0.000002 %	Substances Darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Chromium (Cr) .....	max. 0.000002 %	Non-volatile matter .....	max. 0.0005 %
Iron (Fe) .....	max. 0.00001 %	Water .....	max. 0.1 %

Code	Capacity
BU117-1-2500	2.5L
BU117-1-2501	2.5L

## TERT-BUTYL ALCOHOL (2-METHYL-2-PROPANOL)



Synonyms : 2-Methyl-2-propanol, Trimethylcabinol, tert-Butyl alcohol



-  $(\text{CH}_3)_3\text{COH}$   
 - M = 74.12 g/mol  
 - CAS [75-65-0]

### Physical data:

- Form: Semisolid  
 - Density: 0.78 g/cm<sup>3</sup>  
 - Solub. in water (20 °C): miscible  
 - Melting point: 25.3 °C  
 - Boiling point: 82 - 83 °C  
 - Flash point: 14 °C  
 - Ignition temp.: 490 °C  
 - Vapour pressure: (20 °C) 40.7 hPa  
 - Viscosity: (30 °C) 3.35 mPas

-> Dipolar moment: (20 °C) 1.7 Debye  
 - Dielectric const.: (30 °C) 10.9  
 - Saturation conx.: (20 °C) 122 g/m<sup>3</sup>  
 - Expl. limit (upper): 8.0 Vol%  
 - Expl. limit (lower): 2.3 Vol%  
 - pH (20 °C) 7

### Toxicological data:

- LD 50 (oral, rat): 2733 mg/kg  
 - MAK: 20ml/m<sup>3</sup>, 62 mg/m<sup>3</sup>  
 - WGK: 1

### Safety:

- EC Index no.: 603-005-00-1  
 - R: 11-20

- S: 9-16  
 - VbF class: B  
 - Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 3 F1 II UN 1120  
 - IMDG: 3 II UN 1120  
 - IATA/ICAO: 3 II UN 1120  
 - PAX: 305  
 - CAO: 307  
 - LGK: 3 A  
 - Disposal: 1

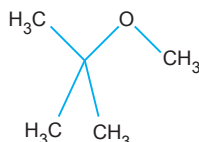
### BU122-1 tert-Butyl alcohol (2-Methyl-2-Propanol), reagent grade

Assay .....	min. 99.0 %	Titration acid .....	max. 0.001 meq/g
Colour .....	20 APHA	Water (coulometric KF) .....	max. 0.1 %
Residue after evaporation .....	max. 0.003 %		

Code	Capacity
BU122-1-2500	2.5 L

## TERT-BUTYL METHYL ETHER

Synonyms : Methyl tert-butyl ether, MTBE



-  $\text{C}_3\text{H}_8\text{O}$   
 - M = 88.15 g/mol  
 - CAS [1634-04-4]  
 - EC number: 216-653-1

### Physical data:

- Form: Liquid  
 - Density: 0.74 g/cm<sup>3</sup>  
 - Solub. in water (10 °C): -26 g/l  
 - Melting point: -108.6 °C  
 - Boiling point: 55 °C  
 - Flash point: -28 °C  
 - Ignition temp.: 460 °C

- Vapour pressure: (20 °C) 268 hPa  
 - Viscosity: (20 °C) 0.27 mPas  
 - Evap. heat: (55 °C) 342 kJ/kg  
 - Expl. limit (upper): 8.4 Vol%  
 - Expl. limit (lower): 1.65 Vol%

### Toxicological data:

- LD 50 (oral, rat): 3870 mg/kg  
 - MAK: 50ml/m<sup>3</sup>, 180 mg/m<sup>3</sup>  
 - WGK: 1

### Safety:

- R: 11-66  
 - S: 16-23-2.51-29-33  
 - VbF class: AI

### Transport/storage:

- ADR: 3 F1 II UN 2398  
 - IMDG: 3 II UN 2398  
 - IATA/ICAO: 3 II UN 2398  
 - PAX: 305  
 - CAO: 307  
 - LGK: 3 A  
 - Disposal: 1

### BU7000-1 Tert-butyl Methyl Ether, reagent grade

Assay (G.C) .....	min. 99.5 %	Iron (Fe) .....	max. 0.00001 %
Acidity .....	max. 0.0005 meq/g	Lead (Pb) .....	max. 0.00001 %
Aluminium (Al) .....	max. 0.00005 %	Magnesium (Mg) .....	max. 0.00001 %
Barium (Ba) .....	max. 0.00001 %	Manganese (Mn) .....	max. 0.00002 %
Boron (B) .....	max. 0.000002 %	Nickel (Ni) .....	max. 0.000002 %
Calcium (Ca) .....	max. 0.00005 %	Tin (Sn) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Zinc (Zn) .....	max. 0.00001 %
Chromium (Cr) .....	max. 0.000002 %	Peroxides (as H <sub>2</sub> O <sub>2</sub> ) .....	max. 0.0005 %
Cobalt (Co) .....	max. 0.000002 %	Non-volatile matter .....	max. 0.0005 %
Copper (Cu) .....	max. 0.000002 %	Water (K.F) .....	max. 0.03 %

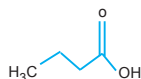
HS-No: 2909 19 00 90

Code	Capacity
BU7000-1-2501	2.5 L

## BUTYRIC ACID



Synonyms :



-  $\text{C}_4\text{H}_8\text{O}_2$   
 - M = 88.11 g/mol  
 - CAS [107-92-6]  
 - EC number: 203-532-3

### Physical data:

- Refractive index 1.3969 (20 °C, 589 nm)  
 - Vapour pressure: 0.9 hPa (20 °C)  
 - Spec. Density: 0.96 g/cm<sup>3</sup> (20 °C)  
 - Explosive limits 2.35 - 12.3 Vol%  
 - Flash point: 75 °C  
 - Solub. in water (20 °C): soluble

- pH value 3 (10 g/l, H<sub>2</sub>O, 20 °C)  
 - Melting point: -8 - -6 °C  
 - Boiling point: 162 - 165 °C

### Toxicological data:

- LD 50 (oral, rat): 2940 mg/kg  
 - WGK: 1

### Safety:

- Corrosive  
 - EC-Index-No. 607-135-00-X

### Transport/storage:

- LGK: 8 A  
 - Packing-cat A  
 - Disposal: 4  
 - Road/Rail 8/32 c  
 - IMDG-Code : 8 III UN 2820  
 - IATA/DGR: 8 III UN 2820  
 - CAO 820 PAX 818  
 - SAX: 6.606

### B7001-1 Butyric acid, reagent grade

Assay .....	max. 99 %
Density (d 20 °/4 °) .....	0.956 - 0.958
Water .....	max. 0.2
Identity (IR) .....	conforms

HS-No: 2915 60 19 00

Code	Capacity
B7001-1-0500	500 ml

# Chemical list : C

## CADMIUM STANDARD SOLUTION 1000MG/L FOR AA



Synonyms :

**Physical data:**

- Form: Liquid
- Density: ~ 1.01 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 1

**Safety:**

- R: 20/21/22-36/38-52
- S: 26-36/37-46
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 6.1 T4 III UN 3287

- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- PAX: 611
- CAO: 618
- LGK: 8B

1 ml = 1000±5 mg/l

**C1005-0 Cadmium standard solution 1000mg/l for AA (cadmium nitrate in nitric acid 0.5 mol/l)**

HS-No: 3822 00 00 00

Code	Capacity
C1005-0-0500	500 ml

## COPPER STANDARD SOLUTION 1000MG/L FOR AA



Synonyms:

**Physical data:**

- Form: Liquid
- Density: ~ 1.01 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 1

**Safety:**

- R: 36/38
- S: 26-37
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264

- PAX: 818
- CAO: 820
- LGK: 8B

1 ml = 1000±5 mg/l

**C1007-0 Copper standard solution 1000mg/l for AA (copper (II) nitrate in nitric acid 0.5 mol/l)**

HS-No: 3288 00 00 00

Code	Capacity
C1007-0-0500	500 ml

Composition ..... 1000±5 mg/l

## CHROMIUM STANDARD SOLUTION 1000MG/L FOR AA



Synonyms:

**Physical data:**

- Density: ~ 1.01 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 1

**Safety:**

- R: 36/38
- S: 26-37

**Transport/storage:**

- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- PAX: 818

- CAO: 820
- LGK: 8B

1 ml = 1000±5 mg/l

**C1009-0 Chromium standard solution 1000mg/l for AA (chromium (III) nitrate in nitric acid 0.5 mol/l)**

HS-No: 3822 00 00 00

Code	Capacity
C1009-0-0500	500 ml

Composition ..... 1000±5 mg/l

## CALCIUM CARBONATE PRECIPITATED

Synonyms : Lime, Chalk, Marble

- CaCO<sub>3</sub>
- M = 100.09 g/mol
- CAS [471-34-1]
- EC number: 207-439-9

**Physical data:**

- Spec. density: 2.71 g/cm<sup>3</sup>
- Bulk density: ~ 400 - 700 kg/m<sup>3</sup>

- Solub. in water (20 °C): 14 mg/l
- Melting point: 825 °C (decomposes)
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~ 9.5 - 10.5

**Toxicological data:**

- LD 50 (oral, rat): 6450 mg/kg
- WGK: 0

**Safety:**

- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13
- Disposal: 14

**C1041-1 Calcium carbonate precipitated, reagent grade**

HS-No: 2836 50 00 00

Assay .....	min. 99 %	Iron (Fe) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.01 %	Lead (Pb) .....	max. 5 ppm
Phosphorus (P) .....	max. 0.005 %	Magnesium (Mg) .....	max. 0.02 %
Silicon (Si) .....	max. 0.002 %	Potassium (K) .....	max. 0.01 %
Sulfur (S) .....	max. 0.01 %	Sodium (Na) .....	max. 0.02 %
Nitrogen Compounds (N) .....	max. 0.01 %	Zinc (Zn) .....	max. 0.001 %
Copper (Cu) .....	max. 5 ppm		

Code	Capacity
C1041-1-0500	500 g

**C1041-3 Calcium carbonate precipitated, extra pure**

HS-No: 2836 50 00 00

Assay (complexometric, on dried subs.) .....	min. 98.5 %	Barium (Ba) .....	max. 0.002 %
Insoluble in acetic acid .....	max. 0.2 %	Cadmium (Cd) .....	max. 0.0001 %
Insoluble in hydrochloric acid .....	max. 0.2 %	Chromium (Cr) .....	max. 0.002 %
Chloride (Cl) .....	max. 0.025 %	Copper (Cu) .....	max. 0.001 %
Fluorides (F) .....	max. 0.005 %	Iron (Fe) .....	max. 0.02 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.025 %	Lead (Pb) .....	max. 0.0003 %
Heavy metals (as Pb) .....	max. 0.002 %	Mercury (Hg) .....	max. 0.00005 %
Antimony (Sb) .....	max. 0.002 %	Zinc (Zn) .....	max. 0.001 %
Arsenic (As) .....	max. 0.0003 %	Non precipitable with (NH <sub>4</sub> ) <sub>2</sub> C <sub>2</sub> O <sub>4</sub> ....	max. 1 %
		Loss on drying (200 °C, 4 h) .....	max. 2 %

Code	Capacity
C1041-3-0500	500 g



## CALCIUM CHLORIDE ANHYDROUS



Synonyms : Chloro calcium

- CaCl<sub>2</sub>  
- M = 110.99 g/mol  
- CAS [10043-52-4]  
- EC number: 233-140-8

- Boiling point: > 1600 °C  
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~8 - 10

### Toxicological data:

- LD 50 (oral, rat): 1000 mg/kg  
- WGK: 1

### Safety:

- EC Index no.: 017-013-00-2  
- R: 36  
- S: 22-24  
- Poison class CH (Swiss): F

### Physical data:

- Spec. density: 2.15 g/cm<sup>3</sup>  
- Solub. in water (20 °C): 740 mg/l  
- Melting point: 772 °C

### Transport/storage:

- LGK: 10-13  
- Disposal: 14

### C1051-1 Calcium chloride anhydrous, reagent grade

HS-No: 2827 20 00 00

Assay (complexometric) .....	min. 95 %	Copper (Cu) .....	max. 0.0005 %
Acidity (as HCL) .....	max. 0.005 %	Iron (Fe) .....	max. 0.0025 %
Alkalinity (as Ca(OH) <sub>2</sub> ) .....	max. 0.5 %	Lead (Pb) .....	max. 0.0005 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.01 %	Magnesium (Mg) .....	max. 0.1 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.001 %	Manganese (Mn) .....	max. 0.0005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.02 %	Potassium (K) .....	max. 0.1 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.0005 %
Arsenic (As) .....	max. 0.0001 %	Sodium (Na) .....	max. 0.1 %
Barium (Ba) .....	max. 0.02 %	Zinc (Zn) .....	max. 0.01 %

Code	Capacity
C1051-1-0500	500 g
C1051-1-1000	1 kg

## CALCIUM CHLORIDE DIHYDRATE



Synonyms :

- CaCl<sub>2</sub>·2H<sub>2</sub>O  
- M = 147.02 g/mol  
- CAS [10035-04-8]  
- EC number: 233-140-8

- Melting point: ~ 176 °C  
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~ 4.5 - 6.5

### Toxicological data:

- LD 50 (oral, rat): 1000 mg/kg  
(anhydrous substance)  
- WGK: 1

### Safety:

- EC Index no.: 017-013-00-2  
- R: 36  
- S: 22-24  
- Poison class CH (Swiss): F

### Physical data:

- Spec. density: 1.85 g/cm<sup>3</sup>

### Transport/storage:

- LGK: 10-13  
- Disposal: 14

### C1060-1 Calcium chloride dihydrate, reagent grade

HS-No: 2827 20 00 00

Assay (as CaCl <sub>2</sub> ) (complexometric) .....	74 - 78 %	Copper (Cu) .....	max. 0.0005 %
Insoluble in water .....	max. 0.01 %	Iron (Fe) .....	max. 0.0025 %
Acidity (as HCl) .....	max. 0.002 %	Lead (Pb) .....	max. 0.0005 %
Alkalinity (as Ca(OH) <sub>2</sub> ) .....	max. 0.01 %	Magnesium (Mg) .....	max. 0.01 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.003 %	Manganese (Mn) .....	max. 0.0005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.001 %	Nickel (Ni) .....	max. 0.0005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Potassium (K) .....	max. 0.01 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.005 %	Sodium (Na) .....	max. 0.02 %
Arsenic (As) .....	max. 0.0001 %	Zinc (Zn) .....	max. 0.001 %
Barium (Ba) .....	max. 0.005 %		

Code	Capacity
C1060-1-0500	500 g
C1060-1-1000	1 kg

## CALCIUM FLUORIDE

Synonyms :

- CaF<sub>2</sub>  
- M = 78.07 g/mol  
- CAS [7789-75-5]  
- EC number: 233-140-8

- Solub. in water 0.016 (18 °C)  
almost insoluble  
- pH value ~ 4 (100 g/l H<sub>2</sub>O, 20 °C)  
(slurry)

- Melting point: ~1418 °C  
- Bulk density ~ 350 - 450 kg/m<sup>3</sup>  
- Boiling point 2513 °C

### Transport/storage:

- LGK: 10-13

### Physical data:

- Spec. density: 3.18 g/cm<sup>3</sup> (20 °C)

### Toxicological data:

- MAK: 2.5 mg/m<sup>3</sup>  
- RTECS EW: 1760000  
- LD 50 oral rat: 4250 mg/kg  
- WGK: nwg

### C1062-1 Calcium fluoride, reagent grade

HS-No: 2826 19 00 00

Assay .....	min. 98.5 %	Silicon (Si) .....	max. 0.01 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.05 %	Total nitrogen (N) .....	max. 0.005 %
Chloride (Cl) .....	max. 0.01 %	Loss on drying .....	max. 0.4 %
Iron (Fe) .....	max. 0.003 %	Heavy metals (as Pb) .....	max. 0.003 %

Code	Capacity
C1062-1-0500	500 g

## CALCIUM HYDROGEN PHOSPHATE ANHYDROUS

Synonyms : Calcium orthophosphate, Calcium phosphate dibasic

- CaH<sub>2</sub>P<sub>2</sub>O<sub>7</sub>  
- M = 136.06 g/mol  
- CAS [7757-93-9]  
- EC number: 231-826-1

### Physical data:

- Solub. in water 0.1 g/l (25 °C)  
- Bulk density: ~ 900 kg/m<sup>3</sup>

### Toxicological data:

- WGK: 1

### Safety:

- Poison class CH: 4F

### Transport/storage:

- LGK: 10-13

### C1065-3 Calcium hydrogen phosphate anhydrous, extra pure

HS-No: 2835 25 10 00

Assay .....	min. 98.0 %	Barium (Ba) .....	passes test
Carbonate (as CO <sub>2</sub> ) .....	passes test	Iron (Fe) .....	max. 0.04 %
Chloride (Cl) .....	max. 0.03 %	Mercury (Hg) .....	max. 0.0001 %
Fluoride (F) .....	max. 0.005 %	Lead (Pb) .....	max. 0.0005 %
Sulphate (SO <sub>4</sub> ) .....	max. 0.5 %	Loss on ignition (800 °C) .....	7.0 - 8.5
Heavy metals .....	max. 0.001 %	Loss on drying .....	max. 2.0 %
Arsenic (As) .....	max. 0.0001 %		

Code	Capacity
C1065-3-0250	250 g

## CALCIUM HYDROXIDE



### Synonyms :

- Ca(OH)<sub>2</sub>
- M = 74.09 g/mol
- CAS [1305-62-0]
- EC number: 215-137-3

### Safety:

- R: 41
- S: 22-24-26-39
- Poison class CH (Swiss): 4

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### Physical data:

- pH (20 °C) 12.1 - 12.5

### C1073-1 Calcium hydroxide, reagent grade

HS-No: 2825 90 19 00

Assay .....	min. 96 %	Sulfate (SO <sub>4</sub> ) .....	max. 0.05 %
Assay of CaCO <sub>3</sub> .....	max. 3 %	Matter not precipitated by ammonium oxalate (as sulfate) .....	max. 2.5 %
Insoluble in HCl .....	max. 0.03 %	Heavy metals (Pb) .....	max. 0.0002 %
Copper (Cu) .....	max. 0.0005 %	Zinc (Zn) .....	max. 0.0005 %
Iron (Fe) .....	max. 0.05 %		
Chloride (Cl) .....	max. 0.005 %		

Code	Capacity
C1073-1-0500	500 g

### C1073-3 Calcium hydroxide, extra pure

HS-No: 2825 90 19 00

Assay (acidimetric) .....	min. 95 %	Sulfates (SO <sub>4</sub> ) .....	max. 0.4 %
Insoluble in HCl .....	max. 0.5 %	Arsenic (As) .....	max. 0.0004 %
Carbonates (as CaCO <sub>3</sub> ) .....	max. 5 %	Heavy metals (as Pb) .....	max. 0.002 %
Chloride (Cl) .....	max. 0.033 %	Magnesium and alkali metals .....	max. 4 %

Code	Capacity
C1073-3-0500	500 g
C1073-3-1000	1 kg

## CALCIUM NITRATE TETRAHYDRATE



### Synonyms : Nitric acid calcium salt tetrahydrate

- Ca(NO<sub>3</sub>)<sub>2</sub>·4H<sub>2</sub>O
- M = 236.15 g/mol
- CAS [13477-34-4]
- EC number: 233-332-1

- Melting point: 42 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 6.0 (anhydrous substance)

### Transport/storage:

- ADR: 5.1 O2 III UN 1454
- IMDG: 5.1 III UN 1454
- IATA/ICAO: 5.1 III UN 1454
- PAX: 516
- CAO: 518
- LGK: 5.1 B
- Disposal: 14

### Physical data:

- Spec. density: 1.82 g/cm<sup>3</sup>
- Bulk density: ~ 1000 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble

### Toxicological data:

- LD 50 (oral, rat): 3900 mg/kg
- WGK: 1

### Safety:

- R: 8-36
- Poison class CH (Swiss): 4

### C1081-1 Calcium nitrate tetrahydrate, reagent grade

HS-No: 2834 29 80 00

Assay (complexometric) .....	min. 99 %	Heavy metals (as Pb) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	4.5 - 7	Iron (Fe) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.002 %	Lead (Pb) .....	max. 0.0005 %
Nitrites (NO <sub>2</sub> ) .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.015 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.001 %	Magnesium and alkali salts (as SO <sub>4</sub> ) .....	max. 0.2 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %	Potassium (K) .....	max. 0.005 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.005 %	Sodium (Na) .....	max. 0.02 %
Barium (Ba) .....	max. 0.005 %	Strontium (Sr) .....	max. 0.01 %
Copper (Cu) .....	max. 0.0005 %		

Code	Capacity
C1081-1-1000	1 kg

## CALCIUM OXIDE



### Synonyms : Lime, caustic; Quicklime

- CaO
- M = 566.08 g/mol
- CAS [1305-78-8]
- EC number: 215-138-9

- Boiling point: 2850 °C
- pH (saturation solution H<sub>2</sub>O, 20 °C) 12.6

### Transport/storage:

- ADR: 5.1 O2 III UN 1454
- IMDG: 5.1 III UN 1454
- IATA/ICAO: 5.1 III UN 1454
- PAX: 516
- CAO: 5.1 B
- Disposal: 14

### Physical data:

- Form: Solid
- Spec density: ~3.37 g/cm<sup>3</sup>
- Bulk density: ~800 - 1200 kg/m<sup>3</sup>
- Solub. in water (20 °C): 1.65 g/l (exothermic reaction)

### Toxicological data:

- MAK: 5 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- R: 41
- S: 22-24-26-39
- Poison class CH (Swiss): 4

### C1089-1 Calcium oxide, reagent grade

HS-No: 2825 90 19 00

Assay .....	min. 90.0 %	Iron (Fe) .....	max. 0.1 %
Chloride (Cl) .....	max. 0.05 %	Lead (Pb) .....	max. 0.01 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.1 %	Nickel (Ni) .....	max. 0.01 %
Copper (Cu) .....	max. 0.01 %		

Code	Capacity
C1089-1-0500	500 g

## CALCIUM SULFATE DIHYDRATE

### Synonyms:

- CaSO<sub>4</sub>·2H<sub>2</sub>O
- M = 172.17 g/mol
- CAS [10101-41-4]
- EC number: 231-900-3

- Solub. in water (20 °C): ~ 2 g/l
- pH (50 g/l H<sub>2</sub>O, 20 °C) 7.0

### Safety:

- Poison class CH (Swiss): F

### Physical data:

- Spec. density: 2.32 g/cm<sup>3</sup>
- Bulk density: ~400 - 600 kg/m<sup>3</sup>

### Toxicological data:

- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 14

**C1100-1 Calcium sulfate dihydrate, reagent grade**

HS-No: 2833 29 90 00

Assay (complexometric) .....	min. 99 %	Chlorides (Cl) .....	max. 0.005 %
Insoluble in HCl .....	max. 0.01 %	Total N .....	max. 0.001 %
Appearance of solution (2.5% in HCl 10%) .....	passes test	Iron (Fe) .....	max. 0.001 %
Free Acid (as H <sub>2</sub> SO <sub>4</sub> ) .....	max. 0.01 %	Heavy metals (Pb) .....	max. 0.002 %
Free Alkali (as Ca(OH) <sub>2</sub> ) .....	max. 0.01 %	Magnesium (Mg) .....	max. 0.01 %
Carbonates (CO <sub>3</sub> ) .....	passes test	Potassium (K) .....	max. 0.01 %
		Sodium (Na) .....	max. 0.1 %

Code	Capacity
C1100-1-0500	500 g
C1100-1-1000	1 kg

**C1100-3 Calcium sulfate dihydrate, extra pure**

HS-No: 2833 29 90 00

Assay (complexometric) .....	min. 98 %	Total N .....	max. 0.001 %
Appearance of solution (2.5% in HCl 10%) .....	passes test	Iron (Fe) .....	max. 0.001 %
Acidity/Alcalinity .....	max. 0.01 %	Heavy metals (Pb) .....	max. 0.002 %
Free Alkali (as Ca(OH) <sub>2</sub> ) .....	max. 0.01 %	Magnesium (Mg) .....	max. 0.01 %
Carbonates (CO <sub>3</sub> ) .....	passes test	Potassium (K) .....	max. 0.01 %
Chlorides (Cl) .....	max. 0.005 %	Sodium (Na) .....	max. 0.1 %

Code	Capacity
C1100-3-0500	500 g
C1100-3-1000	1 kg

**CARBON DISULFIDE**

Synonyms : Carbon disulfide, Dithiocarbonic anhydride

- CS<sub>2</sub>
- M = 76.14 g/mol
- CAS [75-15-0]
- EC number: 200-843-6
- Dielectric const.: (20 °C) 2.6
- Saturation conc.: (20 °C) 1244 g/m<sup>3</sup>
- Expl. limit (upper): 60 Vol%
- Expl. limit (lower): 1 Vol%

- S: 16-33-36/37-45
- VbF class: AI
- Poison class CH (Swiss): 1

**Physical data:**

- Density: 1.26 g/cm<sup>3</sup>
- Solub. in water (20 °C): 2.1 g/l
- Melting point: -111.6 °C
- Boiling point: 46.5 °C
- Flash point: -30 °C
- Ignition temp.: 100 °C
- Vapour pressure: (20 °C) 398 hPa
- Viscosity: (20 °C) 0.36 mPas

**Toxicological data:**

- LD 50 (oral, rat): 3188 mg/kg
- MAK: 5 ml/m<sup>3</sup>, 16 mg/m<sup>3</sup>
- WGK: 2

**Safety:**

- EC Index no.: 006-003-00-3
- R: 11-36/38-48/23-62-63

**Transport/storage:**

- ADR: 3 FT1 | UN 1131
- IMDG: 3 | UN 1131
- IATA/ICAO: forbidden 3 | Un 1131
- PAX: F
- CAO: F
- LGK: 3A
- Disposal: 9

**C1116-3 Carbon disulfide, extra pure**

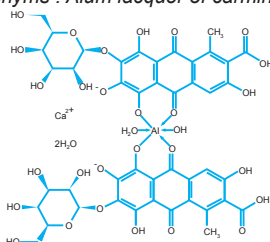
HS-No: 2813 10 00 00

Assay (G.C) .....	min. 99.5 %	Iron (Fe) .....	max. 0.00005 %
Benzene (G.C) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.00002 %
Toluene (G.C) .....	max. 0.005 %	Lead (Pb) .....	max. 0.00002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.0005 %	Non-volatile matter .....	max. 0.002 %
Sulfites (as SO <sub>2</sub> ) .....	max. 0.002 %	Water .....	max. 0.02 %
Copper (Cu) .....	max. 0.00002 %		

Code	Capacity
C1116-3-2500	2.5L

**CARMINE, C.I. 75470**

Synonyms : Alum lacquer of carminic acid



- C<sub>44</sub>H<sub>37</sub>AlCaO<sub>29</sub>·3H<sub>2</sub>O
- M = 492.38 g/mol
- CAS [1390-65-4]
- EC number: 215-724-4

**Physical data:**

- Form: Solid
- Bulk density: ~290 kg/m<sup>3</sup>
- Solub. in water (20 °C): insoluble

**Toxicological data:**

- WGK: 1

**Safety:**

- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13

**C1120-0 Carmine, C.I. 75470, for microscopy**

HS-No: 3203 00 90 00

Absorption maximum λ <sub>1</sub> in DMSO ..	563 - 571 nm	Absorptivity (E1%/1cm; λ <sub>2</sub> max) .....	100 - 150
Absorption maximum λ <sub>2</sub> in DMSO ..	525 - 533 nm	Calcination residue .....	9 - 17
Absorptivity (E1%/1cm; λ <sub>1</sub> max) .....	70 - 110	Loss on drying (110 °C) .....	max. 15 %

Code	Capacity
C1120-0-0010	10 g

**CERIUM (IV) SULFATE TETRAHYDRATE**

Synonyms :

- Ce(SO<sub>4</sub>)<sub>2</sub>·4H<sub>2</sub>O
- M = 404.30 g/mol
- CAS [10294-42-5]
- EC number: 237-029-5

**Physical data:**

- Form: Solid
- Spec. density: 5.02 g/cm<sup>3</sup>

- Bulk density: ~ 650 - 850 kg/m<sup>3</sup>
- Solub. in water (20 °C): 38 g/l
- Melting point: 180 - 200 °C  
(release of crystalline water)
- pH (10 g/l H<sub>2</sub>O, 20 °C) ~ 1.6

**Safety:**

- R: 36/38
- S: 26
- Poison class CH (Swiss): 4

**Transport/storage:**

- LGK: 10-13
- Disposal: 28

**C2007-3 Cerium (IV) sulfate tetrahydrate, extra pure**

HS-No: 2846 10 00 90

Assay (iodometric) .....	min. 98 %	Iron (Fe) .....	max. 0.01 %
Chlorides (Cl) .....	max. 0.003 %	Lead (Pb) .....	max. 0.01 %
Copper (Cu) .....	max. 0.01 %	Nickel (Ni) .....	max. 0.01 %
Heavy metals (as Pb) .....	max. 0.008 %		

Code	Capacity
C2007-3-0101	100 g

**CERIUM (IV) SULFATE****C2009-0 Cerium (IV) sulfate, solution 0.1 mol/l (0.1 N)**

HS-No: 2846 10 00 90

Synonyms :

- Ce(SO<sub>4</sub>)<sub>2</sub>·4H<sub>2</sub>O
- M = 404.30 g/mol
- CAS [10294-42-5]
- EC number: 237-029-5

- Physical data:**
- Density: 1.06 g/cm<sup>3</sup>
  - pH (20 °C) 0.4

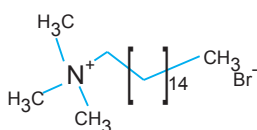
- Transport/storage:**
- LGK: 10-13
  - Disposal: 28

Code	Capacity
C2009-0-1000	1 L

- Toxicological data:**
- WGK: 1

1ml = 0.04043 g Ce(SO<sub>4</sub>)<sub>2</sub>·4H<sub>2</sub>O**CETYLTRIMETHYLAMMONIUM BROMIDE**

Synonyms :



- C<sub>19</sub>H<sub>47</sub>BrN
- M = 364.46 g/mol
- CAS [57-09-0]
- EC number: 200-311-3

- Physical data:**
- Solub. in water: 0.192 g/l (20 °C)
  - pH value: 5-7 (50 g/l H<sub>2</sub>O, 20 °C)
  - Melting point: 237-243 °C

- Bulk density: ~ 390 kg/m<sup>3</sup>

- Toxicological data:**
- LD 50 (oral, rat): 410 mg/kg
  - WGK: 3

- Safety:**
- Poison class CH: 3
  - R: 22-36/38-50/53
  - S: 26-39-61

**Transport/storage:**

- Packing-cat: A
- Disposal: 3
- Road/Rail: 9/12 c
- IMDG-Code: 9/III UN 3077
- IATA/DGR: 9 III UN 3077
- CAO 911 PAX 911
- LGK: 10-13

**C2050-1 Cetyltrimethylammonium bromide, reagent grade**

HS-No: 2923 90 00 00

Assay .....	min. 99 %	Iron (Fe) .....	max. 0.001 %
Acidity and alkalinity .....	passes test	Heavy metals (as Pb) .....	max. 0.0005 %
Solubility test in ethanol .....	passes test	Residue after ignition (as sulfate) ....	max. 0.1 %
Water (H <sub>2</sub> O) .....	max. 0.5 %		

Code	Capacity
C2050-1-0100	100 g

**CHARCOAL ACTIVATED**

Synonyms :

- C
- M = 12.01 g/mol
- CAS [7440-44-0]
- EC number: 231-153-3

- Physical data:**
- Form: Solid

- Spec density: ~1.8 - 2.1 g/cm<sup>3</sup>
- Bulk density: ~ 250 - 350 kg/m<sup>3</sup>
- Solub. in water (20 °C): insoluble
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 4 - 7

- Toxicological data:**
- MAK: 1.5 mg/m<sup>3</sup>

- WGK: 0

**Safety:**

- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13

**C3000-1 Charcoal activated, granulated**

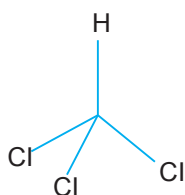
HS-No: 3802 10 00 20

Ash content .....	max. 3 %	Methylene blue adsorption .....	min. 21 g/100g
Acid - extractable matter .....	0.8 %	Calcium (Ca) .....	max. 0.02 %
pH (5%, H <sub>2</sub> O) .....	4 - 7	Iron (Fe) .....	max. 0.02 %
Iodine adsorption .....	1050 mg/g	Moisture .....	max. 2 %

Code	Capacity
C3000-1-1000	1 kg

**CHLOROFORM**

Synonyms : Trichloromethane, Formyl trichloride



- CHCl<sub>3</sub>
- M = 119.38 g/mol
- CAS [67-66-3]
- EC number: 200-663-8

- Physical data:**
- Density: 1.47 g/cm<sup>3</sup>
  - Solub. in water (20 °C): 8 g/l
  - Melting point: -63 °C
  - Boiling point: 61 °C
  - Ignition temp.: 982 °C
  - Vapour pressure: (20 °C) 213 hPa

- Viscosity: (20 °C) 0.56 mPas
- Dipolar moment: (20 °C) 1.01 Debye
- Dielectric const.: (20 °C) 4.8
- Saturation conc.: (20 °C) 1027 g/m<sup>3</sup>

- Toxicological data:**
- LD 50 (oral, rat): 908 mg/kg
  - MAK: 0.5 ml/m<sup>3</sup>, 2.5 mg/m<sup>3</sup>
  - WGK: 3

- Safety:**
- EC Index no.: 602-006-00-4

- R: 22-38-40-48/20/22

- S: 36/37-46

- Poison class CH (Swiss): 1\*

**Transport/storage:**

- ADR: 6.1 T1 III UN 1888
- IMDG: 6.1 III UN 1888
- IATA/ICAO: 6.1 III UN 1888
- PAX: 610
- CAO: 612
- LGK: 10-13
- Disposal: 2

**C3059-1 Chloroform, reagent grade**

HS-No: 2903 13 00 00

Assay (G.C) .....	99.0 - 99.5 %	Calcium (Cd) .....	max. 0.00005 %
Identity (IR-spectrum) .....	Passes test	Chromium (Cr) .....	max. 0.000002 %
Density (20°/4°) .....	1.476 - 1.479	Cobalt (Co) .....	max. 0.000002 %
Appearance .....	clear	Copper (Cu) .....	max. 0.000002 %
Colour .....	max. 10 Hazen	Iron (Fe) .....	max. 0.00001 %
Ethanol (G.C) .....	0.5 - 10 %	Lead (Pb) .....	max. 0.00001 %
Free Acid (as HCl) .....	max. 0.0002 %	Magnesium (Mg) .....	max. 0.00001 %
Free Chloride (as Cl) .....	max. 0.00003 %	Manganese (Mn) .....	max. 0.000002 %
Chloride (Cl) .....	max. 0.00002 %	Nickel (Ni) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.00005 %	Tin (Sn) .....	max. 0.00001 %
Barium (Ba) .....	max. 0.00001 %	Zinc (Zn) .....	max. 0.00001 %
Boron (B) .....	max. 0.000002 %	Water .....	max. 0.01 %
Cadmium (Cd) .....	max. 0.000005 %		

Code	Capacity
C3059-1-2501	2.5 L
C3059-1-4001	4 L

**C3059-4 Chloroform, HPLC grade**

HS-No: 2903 13 00 00

Assay (G.C) .....min. 99 %	Lead (Pb) .....max. 0.000005 %
Color .....max. 10 Hazen	Non-volatile matter .....max. 0.0003 %
Acetone and Aldehyde .....max. 0.005 %	Water .....max. 0.02 %
Acid and Chloride .....passes test	Suitability for use in dithizone test .....passes test
Free Chloride (as Cl) .....passes test	

Code	Capacity
C3059-4-2501	2.5 L
C3059-4-4001	4.0 L

**C3057-4 Chloroform, (Stabilized with Amylene), HPLC grade**

HS-No: 2903 13 00 00

See specification in Solvent Specification - 35

Code	Capacity
C3057-4-1001	1.0 L
C3057-4-4001	4.0 L

**C3057-11 Chloroform, (Stabilized with Amylene), Pesticide grade**

HS-No: 2903 13 00 00

See specification in Solvent Specification - 22

Code	Capacity
C3057-11-1001	1.0 L
C3057-11-4001	4.0 L

**C3057-12 Chloroform, (Stabilized with Amylene), Ultimate grade**

HS-No: 2903 13 00 00

See specification in Solvent Specification - 11

Code	Capacity
C3057-12-2501	1.0 L
C3057-12-4001	4.0 L

**C3058-4 Chloroform, (Stabilized with Alcohol), HPLC grade**

HS-No: 2903 13 00 00

See specification in Solvent Specification - 35

Code	Capacity
C3058-4-1001	1.0 L
C3058-4-4001	4.0 L

**C3058-11 Chloroform, (Stabilized with Alcohol), Pesticide grade**

HS-No: 2903 13 00 00

See specification in Solvent Specification - 22

Code	Capacity
C3058-11-1001	1.0 L
C3058-11-4001	4.0 L

**C3058-12 Chloroform, (Stabilized with Alcohol), Ultimate grade**

HS-No: 2903 13 00 00

See specification in Solvent Specification - 12

Code	Capacity
C3058-12-1001	1.0 L
C3058-12-4001	4.0 L

**C3058-15 Chloroform, (Stabilized with Alcohol), Ultra Dry grade**

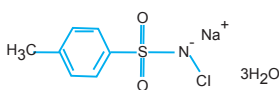
HS-No: 2903 13 00 00

See specification in Solvent Specification - 62

Code	Capacity
C3058-15-1001	1.0 L
C3058-15-4001	4.0 L

**CHLORAMINE T TRIHYDRATE**

Synonyms : *N*-Chloro-4-methylbenzenesulfonamide sodium salt, *N*-Chloro-*p*-toluenesulfonamide sodium salt, Tosylchloramide sodium, *N*-Chloro-4-toluenesulfonamide sodium salt



- C<sub>7</sub>H<sub>7</sub>ClNaNO<sub>2</sub>S·3H<sub>2</sub>O  
 - M = 281.69 g/mol  
 - CAS [7080-50-4]  
 - EC number: 204-854-7

**Physical data:**

- Form: Crystals  
 - Bulk density: ~ 500 - 600 kg/m<sup>3</sup>  
 - Solub. in water (25 °C): 150 g/l  
 - Melting point: > 70 °C (decomposes)  
 - Fresh point: 192 °C  
 - pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 8 - 10

**Toxicological data:**

- LD 50 (oral, rat): ~1000 mg/kg  
 - WGK: 2

**Safety:**

- EC Index no.: 616-010-00-9  
 - R: 22-31-34-42  
 - S: 7-22-26-36/37/39-45  
 - Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 8 C8 III UN 3263  
 - IMDG: 8 III UN 3263  
 - IATA/ICAO: 8 III UN 3263  
 - PAX: 822  
 - CAO: 823  
 - LGK: 8 A  
 - Disposal: 3

**C3060-1 Chloramine T Trihydrate, reagent grade**

HS-No: 2935 00 90 90

Assay ..... 99 - 103 %	Insoluble in ethanol ..... max. 1.5 %
Identity (IR-spectrum) ..... passes test	pH (5%, H <sub>2</sub> O) ..... 8 - 10
Appearance of aqueous solution .... passes test	Suitability for determination of bromide (Br) passes test

Code	Capacity
C3060-1-0250	250 g



## CHLOROPLATINIC ACID

Synonyms :

- $\text{H}_2\text{PtCl}_6 \cdot 6\text{H}_2\text{O}$
- M = 517.92 g/mol
- CAS [18497-13-7]

### C4000-1 Chloroplatinic acid, reagent grade

Assay (as Pt) .....	min. 37.0 %	Nitrate ( $\text{NO}_3$ ) .....	max. 0.04 %
Solubility test in water .....	passes test	Soluble matter in nitric acid .....	max. 0.2 %

Code	Capacity
C4000-1-0001	1 g

## CHROMIUM (III) CHLORIDE HEXAHYDRATE

Synonyms:

- $\text{CrCl}_3 \cdot 6\text{H}_2\text{O}$
- M = 266.45 g/mol
- CAS [10060-12-5]
- EC number: 233-038-3
- Solub. in water (20 °C): 590 g/l
- Melting point: 95 °C
- pH (50 g/l  $\text{H}_2\text{O}$ , 20 °C) 2 - 3

**Physical data:**  
- Spec. density: 2.76 g/cm<sup>3</sup>  
- Bulk density: ~ 700 kg/m<sup>3</sup>

**Toxicological data:**  
- LD 50 (oral, rat): 1790 mg/kg  
- WGK: 2



**Safety:**  
- R: 22  
- S: 24/25-46  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- LGK: 10-13

### C3089-3 Chromium (III) chloride hexahydrate, extra pure

HS-No: 2827 39 80 90

Assay (iodometric) .....	min. 97 %	Iron (Fe) .....	max. 0.01 %
pH (5%, $\text{H}_2\text{O}$ ) .....	2 - 3	Lead (Pb) .....	max. 0.005 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.02 %	Non precipitable with ammonia	
Copper (Cu) .....	max. 0.001 %	(as $\text{SO}_4$ ) .....	max. 0.2 %

Code	Capacity
C3089-3-0500	500 g
C3089-3-1000	1 kg

## CHROMIUM (III) NITRATE NONAHYDRATE

Synonyms: Chromic nitrate nonahydrate

- $\text{Cr}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O}$
- M = 400.15 g/mol
- CAS [7789-02-8]
- EC number: 236-921-1
- Safety: - R: 8-22  
- S: 26-36/37/39-45



**Transport/storage:**  
- ADR: 5.1 O2 III UN 2720  
- IMDG: 5.1 III UN 2720  
- PAX: 516  
- CAO: 518

### C3070-1 Chromium (III) nitrate nonahydrate, reagent grade

HS-No: 2834 29 80 00

Assay .....	min. 98.0 %	Iron (Fe) .....	max. 0.005 %
pH (5%, $\text{H}_2\text{O}$ ) .....	2.0 - 3.0	Ammonium ( $\text{NH}_4$ ) .....	max. 0.002 %
Chloride (Cl) .....	max. 0.002 %	Substances not precipitated by ammonia	
Sulfates ( $\text{SO}_4$ ) .....	max. 0.005 %	(as sulphate) .....	max. 0.05 %
Copper (Cu) .....	max. 0.001 %		

Code	Capacity
C3070-1-0500	500 g

### C3070-3 Chromium (III) nitrate nonahydrate, extra pure

HS-No: 2834 29 80 00

Assay .....	min. 97 %	Sulfates ( $\text{SO}_4$ ) .....	max. 0.05 %
pH (5%, $\text{H}_2\text{O}$ ) .....	2.0 - 3.0	Ammonium ( $\text{NH}_4$ ) .....	max. 0.01 %
Chloride (Cl) .....	max. 0.01 %	Iron (Fe) .....	max. 0.05 %

Code	Capacity
C3070-3-0500	500 g

## CHROMIUM (III) POTASSIUM SULFATE DODECAHYDRATE

Synonyms: Alum chrome, Potassium chromium (III) sulfate

- $\text{KCr}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$
- M = 499.41 g/mol
- CAS [7788-99-0]
- EC number: 233-401-6
- Bulk density: ~ 800 - 1000 kg/m<sup>3</sup>
- Solub. in water (25 °C): ~250 g/l
- Melting point: 89 °C
- pH (50 g/l  $\text{H}_2\text{O}$ , 20 °C) ~ 3

**Physical data:**  
- Spec. density: 1.83 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 2

**Safety:**  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 15

### C3091-1 Chromium (III) potassium sulfate dodecahydrate, reagent grade

HS-No: 2833 30 00 00

Assay (Iodometric) .....	min. 98 %	Ammonium ( $\text{NH}_4$ ) .....	max. 0.02 %
Insoluble in water .....	max. 0.02 %	Copper (Cu) .....	max. 0.005 %
pH (5%, $\text{H}_2\text{O}$ ) .....	> 2.5	Iron (Fe) .....	max. 0.003 %
Chlorides (Cl) .....	max. 0.1 %	Lead (Pb) .....	max. 0.01 %
Aluminium (Al) .....	max. 0.02 %	Nickel (Ni) .....	max. 0.01 %

Code	Capacity
C3091-1-1000	1 kg

### C3091-3 Chromium (III) potassium sulfate dodecahydrate, extra pure

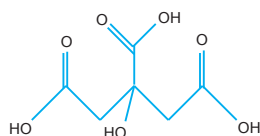
HS-No: 2833 30 00 00

Assay (Iodometric) .....	min. 98 %	Ammonium ( $\text{NH}_4$ ) .....	max. 0.03 %
Insoluble in water .....	max. 0.025 %	Copper (Cu) .....	max. 0.005 %
pH (5%, $\text{H}_2\text{O}$ ) .....	> 2.5	Iron (Fe) .....	max. 0.003 %
Chlorides (Cl) .....	max. 0.1 %	Lead (Pb) .....	max. 0.01 %
Aluminium (Al) .....	max. 0.02 %	Nickel (Ni) .....	max. 0.01 %

Code	Capacity
C3091-3-1000	1 kg

## CITRIC ACID ANHYDROUS

Synonyms: 2-Hydroxy-1,2,3-propanetricarboxylic acid, b-Hydroxy tricarboxilic acid, Hydroxytricarballic acid



- C<sub>6</sub>H<sub>8</sub>O<sub>7</sub>  
- M = 192.13 g/mol  
- CAS [77-92-9]  
- EC number: 201-069-1

### Physical data:

- Spec. density: (18 °C) 1.67 g/cm<sup>3</sup>  
- Bulk density: ~560 kg/m<sup>3</sup>  
- Solub. in water (20 °C): soluble  
- Melting point: ~ 153 °C (decomposes)

- Ignition temp.: 345 °C  
- Vapour pressure: (20 °C) < 0.1 hPa  
- Expl. limit (upper): 8.0 Vol%  
- Expl. limit (lower): 2.3 Vol%  
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~1.7

### Toxicological data:

- LD 50 (oral, rat): 3000 mg/kg  
- WGK: 1

### Safety:

- R: 36  
- S: 26  
- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13

### C3122-1 Citric acid anhydrous, reagent grade

HS-No: 2918 14 00 00

Assay (acidimetric) .....	min. 99.5 %	Copper (Cu) .....	max. 0.00005 %
Insoluble in water .....	max. 0.005 %	Heavy metals (as Pb) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.001 %	Iron (Fe) .....	max. 0.0003 %
Oxalates (C <sub>2</sub> O <sub>4</sub> ) .....	max. 0.03 %	Lead (Pb) .....	max. 0.0002 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.0005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %	Nickel (Ni) .....	max. 0.0002 %
Arsenic (As) .....	max. 0.00001 %	Substances darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Calcium (Ca) .....	max. 0.0025	Calcination residue (as SO <sub>4</sub> ) .....	max. 0.02 %

Code	Capacity
C3112-1-0500	500 g
C3112-1-1000	1 kg

### C3112-3 Citric acid anhydrous, extra pure

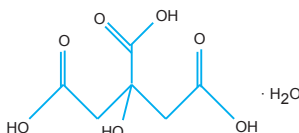
HS-No: 2918 14 00 00

Assay (acidimetric) .....	min. 99.5 %	Iron (Fe) .....	max. 0.001 %
Insoluble in water .....	max. 0.01 %	Lead (Pb) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.005 %	Magnesium (Mg) .....	max. 0.005 %
Oxalates (C <sub>2</sub> O <sub>4</sub> ) .....	max. 0.01 %	Mercury (Hg) .....	max. 0.0001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Nickel (Ni) .....	max. 0.001 %
Tartrates (C <sub>4</sub> H <sub>4</sub> O <sub>6</sub> ) .....	passes test	Zinc (Zn) .....	max. 0.001 %
Arsenic (As) .....	max. 0.0001 %	Sulfated ash (800 °C) .....	max. 0.05 %
Barium (Ba) .....	max. 0.002 %	Water .....	max. 0.5 %
Calcium (Ca) .....	max. 0.02 %	Appearance of solution (20%, water) .....	passes test
Copper (Cu) .....	max. 0.001 %	Substances darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Heavy metals (as Pb) .....	max. 0.001 %		

Code	Capacity
C3112-3-0500	500 g
C3112-3-1000	1 kg

## CITRIC ACID MONOHYDRATE

Synonyms: 2-Hydroxy-1,2,3-propanetricarboxylic acid, monohydrate



- C<sub>6</sub>H<sub>8</sub>O<sub>7</sub>·H<sub>2</sub>O  
- M = 210.14 g/mol  
- CAS [5949-29-1]  
- EC number: 201-069-1

### Physical data:

- Spec. density: 1.665 g/cm<sup>3</sup>  
- Bulk density: ~800 - 1000 kg/m<sup>3</sup>  
- Solub. in water (20 °C): soluble  
- Melting point: 135 - 152 °C

- Boiling point: 135 -152 °C (decomposes)  
- Ignition temp.: 345 °C  
- Vapour pressure: (20 °C) < 0.1 hPa  
- Expl. limit (lower): 8.0 Vol%  
- pH (50 g/l H<sub>2</sub>O, 25 °C) ~1.85

### Toxicological data:

- LD 50 (oral, rat): 3000 mg/kg  
- WGK: 1



### Safety:

- R: 36  
- S: 24/25  
- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13

### C3127-1 Citric acid monohydrate, reagent grade

HS-No: 2918 14 00 00

Assay (acidimetric) .....	min. 99.5 %	Copper (Cu) .....	max. 0.0001 %
Insoluble in water .....	max. 0.005 %	Heavy metals (as Pb) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.0005 %	Iron (Fe) .....	max. 0.0002 %
Oxalates (C <sub>2</sub> O <sub>4</sub> ) .....	max. 0.005 %	Lead (Pb) .....	max. 0.0005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %	Nickel (Ni) .....	max. 0.0001 %
Tartrates (C <sub>4</sub> H <sub>4</sub> O <sub>6</sub> ) .....	passes test	Organic volatile impurities .....	passes test
Arsenic (As) .....	max. 0.00001 %	Calcination residue (as SO <sub>4</sub> ) .....	max. 0.01 %
Barium (Ba) .....	passes test	Water .....	7.5 - 8.8
Calcium (Ca) .....	max. 0.001 %		

Code	Capacity
C3127-1-0500	500 g
C3127-1-1000	1 kg
C3127-1-5000	5 kg

## COBALT (II) ACETATE TETRAHYDRATE



- CoC<sub>4</sub>H<sub>6</sub>O<sub>4</sub>·4H<sub>2</sub>O  
- M = 249.08 g/mol  
- CAS [6147-53-1]  
- EC number: 200-755-8

### Physical data:

- Spec. density: 1.70 g/cm<sup>3</sup> (20 °C)  
- Solub. in water 380 g/l (25 °C)  
- M = 249.08 g/mol

- pH value: ~ 7.2 (50 g/l H<sub>2</sub>O, 25 °C)  
- Melting point: 140 °C (release of crystalline water)  
- Bulk density: ~ 850 kg/m<sup>3</sup>

### Toxicological data:

- LD 50 (oral, rat): 780 mg/kg  
- WGK: 3\*

### Safety:

- Harmful, sensitizing  
- R: 22-40-42/43  
- S: 22-36/37-45  
- Poison class CH: 2

### Transport/storage:

- LGK: 10-13  
- Disposal: 15

### C5000-3 Cobalt (II) acetate tetrahydrate, extra pure

HS-No: 2915 23 00 00

Assay .....	min. 99.0 %	Iron (Fe) .....	max. 0.01 %
Chloride (Cl) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.1 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.01 %	Lead (Pb) .....	max. 0.001 %

Code	Capacity
C5000-3-0500	500 g

## COBALT (II) CHLORIDE HEXAHYDRATE



### Synonyms:

- $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$
- $M = 237.93 \text{ g/mol}$
- CAS [7791-13-1]
- EC number: 231-589-4

- Melting point:  $56^\circ\text{C}$
- pH (50 g/l  $\text{H}_2\text{O}$ ,  $25^\circ\text{C}$ ) ~ 4.9

- S: 53-22-24-37-45-60-61
- Poison class CH (Swiss): 3

### Physical data:

- Spec. density: ( $25^\circ\text{C}$ )  $1.92 \text{ g/cm}^3$
- Bulk density: ~  $1250 \text{ kg/m}^3$
- Solub. in water ( $20^\circ\text{C}$ ):  $76 \text{ g/l}$

### Toxicological data:

- LD 50 (oral, rat):  $766 \text{ mg/kg}$
- WGK: 2

### Safety:

- EC Index no.: 027-004-00-5
- R: 49-E22-42/43-50/53

### Transport/storage:

- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288
- IATA/ICAO: 6.1 III UN 3288
- PAX: 619
- CAO: 619
- LGK: 6.1 B
- Disposal: 15

### C5002-1 Cobalt (II) chloride hexahydrate, reagent grade

HS-No: 2827 34 00 00

Assay (complexometric) .....	min. 99.0 %	Magnesium (Mg) .....	max. 0.001 %
Insoluble in water .....	max. 0.01 %	Manganese (Mn) .....	max. 0.001 %
Nitrates ( $\text{NO}_3$ ) .....	max. 0.01 %	Nickel (Ni) .....	max. 0.005 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.005 %	Potassium (K) .....	max. 0.005 %
Ammonium ( $\text{NH}_4$ ) .....	max. 0.005 %	Sodium (Na) .....	max. 0.01 %
Calcium (Ca) .....	max. 0.005 %	Zinc (Zn) .....	max. 0.002 %
Copper (Cu) .....	max. 0.0005 %	Non precipitable with	
Iron (Fe) .....	max. 0.001 %	( $\text{NH}_4$ ) <sub>2</sub> S (as $\text{SO}_4$ ) .....	max. 0.2 %
Lead (Pb) .....	max. 0.0005 %		

Code	Capacity
C5002-1-0250	250 g
C5002-1-0500	500 g

## COBALT (II) NITRATE HEXAHYDRATE



### Synonyms: Nitric acid cobalt salt hexahydrate

- $\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$
- $M = 291.04 \text{ g/mol}$
- CAS [10026-22-9]
- EC number: 233-402-1

- pH (100 g/l  $\text{H}_2\text{O}$ ,  $20^\circ\text{C}$ ) ~ 4.0

- Poison class CH (Swiss): 2

### Physical data:

- Spec. density:  $1.87 \text{ g/cm}^3$
- Bulk density: ~  $800 \text{ kg/m}^3$
- Solub. in water ( $20^\circ\text{C}$ ): soluble
- Melting point:  $57^\circ\text{C}$

### Toxicological data:

- LD 50 (oral, rat):  $434 \text{ mg/kg}$  (anhydrous substance)
- WGK: 2

### Safety:

- R: 22-40-43
- S: 36/37-46

### Transport/storage:

- ADR: 5.1 O2 II UN 1477
- IMDG: 5.1 II UN 1477
- IATA/ICAO: 5.1 II UN 1477
- PAX: 508
- CAO: 511
- LGK: 5.1 B
- Disposal: 15

### C5009-1 Cobalt (II) nitrate hexahydrate, reagent grade

HS-No: 2834 29 20 00

Assay (complexometric) .....	min. 99%	Magnesium (Mg) .....	max. 0.005%
Insoluble in water .....	max. 0.005%	Manganese (Mn) .....	max. 0.002%
Chlorides (Cl) .....	max. 0.001%	Nickel (Ni) .....	max. 0.001%
Sulfates ( $\text{SO}_4$ ) .....	max. 0.005%	Potassium (K) .....	max. 0.01%
Ammonium ( $\text{NH}_4$ ) .....	max. 0.05%	Sodium (Na) .....	max. 0.05%
Calcium (Ca) .....	max. 0.005%	Zinc (Zn) .....	max. 0.005%
Copper (Cu) .....	max. 0.001%	Non precipitable with	
Iron (Fe) .....	max. 0.001%	( $\text{NH}_4$ ) <sub>2</sub> S (as $\text{SO}_4$ ) .....	max. 0.2%
Lead (Pb) .....	max. 0.001		

Code	Capacity
C5009-1-0250	250 g

## COBALT (II) SULFATE HEPTAHYDRATE



### Synonyms:

- $\text{CoSO}_4 \cdot 7\text{H}_2\text{O}$
- $M = 281.19 \text{ g/mol}$
- CAS [10026-24-1]
- EC number: 233-334-2

### Toxicological data:

- LD 50 (oral, rat):  $582 \text{ mg/kg}$
- WGK: 2

### Transport/storage:

- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- PAX: 911
- CAO: 911
- LGK: 6.1 B
- Disposal: 15

### Physical data:

- Spec. density: ( $25^\circ\text{C}$ )  $1.95 \text{ g/cm}^3$
- Bulk density: ~  $900 \text{ kg/m}^3$
- Solub. in water ( $20^\circ\text{C}$ ):  $260 \text{ g/l}$
- Melting point:  $98^\circ\text{C}$
- pH (100 g/l  $\text{H}_2\text{O}$ ,  $20^\circ\text{C}$ ) ~ 4

### Safety:

- EC Index no.: 027-005-00-0
- R: 49-22-42/43-50/53
- S: 53-22-24/37-45-60-61
- Poison class CH (Swiss): 2

### C5016-1 Cobalt (II) sulfate heptahydrate, reagent grade

HS-No: 2833 29 30 00

Assay (complexometric) .....	min. 99 %	Lead (Pb) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.01 %
Total (N) .....	max. 0.002 %	Nickel (Ni) .....	max. 0.005 %
Calcium (Ca) .....	max. 0.005 %	Potassium (K) .....	max. 0.005 %
Copper (Cu) .....	max. 0.001 %	Sodium (Na) .....	max. 0.01 %
Iron (Fe) .....	max. 0.0005 %	Zinc (Zn) .....	max. 0.005 %

Code	Capacity
C5016-1-0500	0500 g

## COPPER (I) CHLORIDE



Synonyms: Copper monochloride

- CuCl
- M = 98.99 g/mol
- CAS [7758-89-6]
- EC number: 231-842-9

### Physical data:

- Spec. density: 3.53 g/cm<sup>3</sup>
- Bulk density: ~ 1600 - 1800 kg/m<sup>3</sup>
- Solub. in water (25 °C): 0.06 g/l
- Melting point: 422 °C
- Boiling point: 1366 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~5

### Toxicological data:

- LD 50 (oral, rat): 140 mg/kg
- MAK: 1 mg/m<sup>3</sup>
- WGK: 2

### Safety:

- EC Index no.: 029-001-00-4
- R: 22-50/53
- S: 22-46-60-61
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 8 C2 III UN 2802
- IMDG: 8 III UN 2802
- IATA/ICAO: 8 III UN 2802
- PAX: 822
- CAO: 823
- LGK: 8 B
- Disposal: 15

### C5040-1 Copper (I) Chloride, reagent grade

HS-No: 2827 39 80 10

Assay (cermetric) .....	min. 98 %	Iron (Fe) .....	max. 0.005 %
Insoluble in HCl-HNO <sub>3</sub> .....	max. 0.02 %	Lead (Pb) .....	max. 0.02 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.04 %	Potassium (K) .....	max. 0.02 %
Arsenic (As) .....	max. 0.0001 %	Sodium (Na) .....	max. 0.05 %
Calcium (Ca) .....	max. 0.01 %	Non precipitable with H <sub>2</sub> S (as SO <sub>4</sub> )	max. 0.2 %

**Code**      **Capacity**  
C5040-1-0500    500 g

### C5040-3 Copper (I) Chloride, extra pure

HS-No: 2827 39 80 10

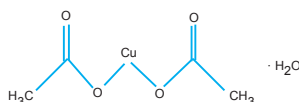
Assay (iodometric) .....	min. 98.5 %	Iron (Fe) .....	max. 0.01 %
Insoluble in HCl-HNO <sub>3</sub> .....	max. 0.02 %	Lead (Pb) .....	max. 0.02 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.04 %	Potassium (K) .....	max. 0.02 %
Arsenic (As) .....	max. 0.0005 %	Sodium (Na) .....	max. 0.05 %
Calcium (Ca) .....	max. 0.01	Non precipitable with H <sub>2</sub> S (as SO <sub>4</sub> )	max. 0.2 %

**Code**      **Capacity**  
C5040-3-0500    500 g

## COPPER (II) ACETATE MONOHYDRATE



Synonyms: Cupric acetate



- Cu(CH<sub>3</sub>COO)<sub>2</sub> · H<sub>2</sub>O
- M = 199.65 g/mol
- CAS [6046-93-1]
- EC number: 205-553-3

### Physical data:

- Spec. density: 1.88 g/cm<sup>3</sup>
- Bulk density: ~ 1100 kg/m<sup>3</sup>

- Solub. in water (20 °C): 72 g/l
- Melting point: 115 °C
- Boiling point: 240 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~5.5

### Toxicological data:

- LD 50 (oral, rat): 710 mg/kg
- MAK: 1 mg/m<sup>3</sup>
- WGK: 3\*

### Safety:

- R: 22
- S: 46
- Poison class CH (Swiss): 3

### Transport/storage:

- LGK: 10-13
- Disposal: 15

### C5044-1 Copper (II) acetate monohydrate, reagent grade

HS-No: 2915 29 00 90

Assay (iodometric) .....	min. 99 %	Lead (Pb) .....	max. 0.004 %
Insoluble in dil. CH <sub>3</sub> COOH .....	max. 0.01 %	Magnesium (Mg) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.001 %	Nickel (Ni) .....	max. 0.002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Potassium (K) .....	max. 0.01 %
Total N .....	max. 0.01 %	Sodium (Na) .....	max. 0.01 %
Calcium (Ca) .....	max. 0.005 %	Zinc (Zn) .....	max. 0.002 %
Iron (Fe) .....	max. 0.002 %		

**Code**      **Capacity**  
C5044-1-0500    0500 g

### C5044-3 Copper (II) acetate monohydrate, extra pure

HS-No: 2915 29 00 90

Assay (iodometric) .....	min. 98 %	Iron (Fe) .....	max. 0.005 %
Insoluble in water .....	max. 0.02 %	Lead (Pb) .....	max. 0.002 %
pH (5%, H <sub>2</sub> O) .....	5 - 6	Nickel (Ni) .....	max. 0.02 %
Chlorides (Cl) .....	max. 0.01 %	Potassium (K) .....	max. 0.01 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Sodium (Na) .....	max. 0.01 %
Total N .....	max. 0.01 %	Zinc (Zn) .....	max. 0.002 %
Calcium (Ca) .....	max. 0.005 %		

**Code**      **Capacity**  
C5044-3-0500    0500 g

## COPPER (II) CHLORIDE DIHYDRATE



Synonyms: Copper dichloride dihydrate

- CuCl<sub>2</sub> · 2H<sub>2</sub>O
- M = 170.48 g/mol
- CAS [10125-13-0]
- EC number: 231-210-2

### Physical data:

- Spec. density: 2.54 g/cm<sup>3</sup>
- Bulk density: ~ 950 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: ~ 100 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 3.0 - 3.8

### Toxicological data:

- LD 50 (oral, rat): 584 mg/kg (anhydrous substance)
- MAK: 1 mg/m<sup>3</sup>
- WGK: 2

### Safety:

- R: 22-36/37/38
- S: 26-46
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 8 C2 III UN 2802
- IMDG: 8 III UN 2802
- IATA/ICAO: 8 III UN 2802
- PAX: 822
- CAO: 823
- LGK: 8 B
- Disposal: 15

**C5057-1 Copper (II) chloride dihydrate, reagent grade**

HS-No: 2827 39 80 90

Assay (iodometric) .....	min. 99 %	Iron (Fe) .....	max. 0.001 %
Insoluble in matter .....	max. 0.01 %	Lead (Pb) .....	max. 0.004 %
pH (5%, H <sub>2</sub> O) .....	3.0 - 3.8	Nickel (Ni) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Potassium (K) .....	max. 0.01 %
Total N .....	max. 0.002 %	Sodium (Na) .....	max. 0.02 %
Arsenic (As) .....	max. 0.0001 %	Non precipitable with H <sub>2</sub> S (as SO <sub>4</sub> )	max. 0.1 %
Calcium (Ca) .....	max. 0.005 %		

Code	Capacity
C5057-1-0500	500 g
C5057-1-1000	1 kg

**COPPER (II) HYDROXIDE CARBONATE**

Synonyms: Copper (II) carbonate hydroxide, Copper (II) carbonate basic

- CuCO<sub>3</sub>Cu(OH)<sub>2</sub>
- M = 221.20 g/mol
- CAS [12069-69-1]
- EC number: 235-113-6

**Physical data:**

- Form: Solid
- Spec. density: ~4.0 g/cm<sup>3</sup>
- Bulk density: ~350 kg/m<sup>3</sup>

- Solub. in water (20 °C): insoluble
- Melting point: 200 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~8 - 9

**Toxicological data:**

- LD 50 (oral, rat): 1350 mg/kg
- MAK: 0.1 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- R: 22
- S: 46
- Poison class CH (Swiss): 3

**Transport/storage:**

- LGK: 10-13

**C5045-1 Copper (II) hydroxide carbonate, reagent grade**

HS-No: 2836 99 11 00

Assay (iodometry) .....	min. 95 %	Iron (Fe) .....	max. 0.005 %
Insoluble matter in H <sub>2</sub> SO <sub>4</sub> .....	max. 0.01 %	Lead (Pb) .....	max. 0.005 %
Chlorides (Cl) .....	max. 0.002 %	Potassium (K) .....	max. 0.05 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Sodium (Na) .....	max. 0.05 %

Code	Capacity
C5045-1-0500	500 g

**C5045-3 Copper (II) hydroxide carbonate, extra pure**

HS-No: 2836 99 11 00

Assay (iodometric) .....	min. 95 %	Nickel (Ni) .....	max. 0.05 %
Chloride (Cl) .....	max. 0.01 %	Sodium (Na) .....	max. 0.5 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.05 %	Zinc (Zn) .....	max. 0.01 %
Iron (Fe) .....	max. 0.02 %	Non precipitable with H <sub>2</sub> S (as SO <sub>4</sub> )	max. 1 %
Lead (Pb) .....	max. 0.005 %		

Code	Capacity
C5045-3-0500	500 g

**COPPER (II) NITRATE TRIHYDRATE**

Synonyms: Copper dinitrate dihydrate

- Cu(NO<sub>3</sub>)<sub>2</sub>·3H<sub>2</sub>O
- M = 241.60 g/mol
- CAS [10031-43-3]
- EC number: 221-838-5

**Physical data:**

- Spec. density: 2.32 g/cm<sup>3</sup>
- Bulk density: ~1050 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: ~114 °C

- pH (50 g/l H<sub>2</sub>O, 20 °C) ~3 - 4

- LD 50 (oral, rat): 940 mg/kg
- MAK: 1.5 mg/m<sup>3</sup>
- WGK: 2

**Safety:**

- R: 22-36/38
- S: 46

- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 5.1 O2 II UN 1477
- IMDG: 5.1 II UN 1477
- IATA/ICAO: 5.1 II UN 1477
- PAX: 508
- CAO: 511
- LGK: 5.1 B
- Disposal: 15

**C5064-1 Copper (II) nitrate trihydrate, reagent grade**

HS-NO: 2834 29 30 00

Assay (iodometric) .....	min. 99.5%	Lead (Pb) .....	max. 0.001%
Chlorides (Cl) .....	max. 0.0005%	Nickel (Ni) .....	max. 0.001%
Sulfates (SO <sub>4</sub> ) .....	max. 0.005%	Potassium (K) .....	max. 0.01%
Calcium (Ca) .....	max. 0.005%	Sodium (Na) .....	max. 0.01%
Iron (Fe) .....	max. 0.002%	Zinc (Zn) .....	max. 0.001%

Code	Capacity
C5064-1-0500	500 g

**C5064-3 Copper (II) nitrate trihydrate, extra pure**

HS-NO: 2834 29 30 00

Assay (iodometric) .....	min. 99%	Iron (Fe) .....	max. 0.01%
Chlorides (Cl) .....	max. 0.003%	Lead (Pb) .....	max. 0.005%
Sulfates (SO <sub>4</sub> ) .....	max. 0.01%	Magnesium (Mg) .....	max. 0.01%
Arsenic (As) .....	max. 0.0001%	Nickel (Ni) .....	max. 0.05%
Calcium (Ca) .....	max. 0.05%	Non precipitable with H <sub>2</sub> S (as SO <sub>4</sub> )	max. 0.01%

Code	Capacity
C5064-3-0500	500 g

**COPPER, POWDER**

Synonyms:

- Cu
- M = 63.55 g/mol
- CAS [7440-50-8]
- EC number: 231-159-6

**Physical data:**

- Solub. in water insoluble
- M = 63.55 g/mol

- Melting point: 1083 °C
- Bulk density: 1290 kg/m<sup>3</sup>

**Toxicological data:**

- WGK: nwg
- MAK: 1 mg/m<sup>3</sup>

**Safety:**

- Poison class CH: F

**Transport/storage:**

- Packing-cat: A
- Road/Rail: 9/12 c
- IMDG-Code 9/III UN 3077
- IATA/DGR: 9 III UN 3077
- PAX: 911
- CAO: 911
- LGK: 10-13
- Disposal: 27

**C5071-3 Copper, powder, extra pure**

HS-NO: 7406 10 00 00

Assay (Iodometric) .....	min. 99.5 %	Lead (Pb) .....	max. 0.05 %
Insoluble in HNO <sub>3</sub> .....	max. 0.05 %	Manganese (Mn) .....	max. 0.002 %
Antimony (Sb) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.005 %
Arsenic (As) .....	max. 0.0002 %	Silver (Ag) .....	max. 0.005 %
Iron (Fe) .....	max. 0.005 %	Tin (Sn) .....	max. 0.005 %

Code	Capacity
C5071-3-0500	500 g



## COPPER (II) OXIDE



Synonyms: *Copper monoxide*

- CuO  
- M = 79.55 g/mol  
- CAS [1317-38-0]  
- EC number: 215-269-1

- Melting point: 1336 °C  
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 7

- S: 22-46  
- Poison class CH (Swiss): 4

**Physical data:**  
- Spec. density: 6.45 g/cm<sup>3</sup>  
- Bulk density: ~ 1600 kg/m<sup>3</sup>  
- Solub. in water (20 °C): insoluble

**Toxicological data:**  
- MAK: 1 mg/m<sup>3</sup>  
- WGK: 1

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 27

**Safety:**  
- R: 22

### C5072-3 Copper (II) oxide, extra pure

HS-NO: 2825 50 00 10

Assay (iodometric) .....	min. 96%	Iron (Fe) .....	max. 0.05%
Insoluble in HCl .....	max. 0.05%	Total S (as SO <sub>4</sub> ) .....	max. 0.1%
Nitrogen compounds (as N) .....	max. 0.005%	Non precipitable with H <sub>2</sub> S (as SO <sub>4</sub> ) .....	max. 1%
Chlorides (Cl) .....	max. 0.01%		

**Code Capacity**  
C5072-3-0500 500 g

## COPPER (II) SULFATE ANHYROUS



Synonyms: *Copper monosulfate anhydrous, Copper vitriol anhydrous*

- CuSO<sub>4</sub>  
- M = 159.60 g/mol  
- CAS [7758-98-7]  
- EC number: 231-847-6

**Toxicological data:**  
- LD 50 (oral, rat): 300 mg/kg  
- MAK: 1 mg/m<sup>3</sup>  
- WGK: 2

**Transport/storage:**  
- ADR: 9 M7 III UN 3077  
- IMDG: 9 III UN 3077  
- IATA/ICAO: 9 III UN 3077  
- PAX: 911  
- CAO: 911  
- LGK: 10-13  
- Disposal: 15

**Physical data:**  
- Spec. density: 3.61 g/cm<sup>3</sup>  
- Bulk density: ~ 800 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 203 g/l  
- pH (50 g/l H<sub>2</sub>O, 20 °C) 3.5 - 4.5

**Safety:**  
- EC Index no.: 029-004-00-0  
- R: 22-36/38-50/53  
- S: 22-46-60-61  
- Poison class CH (Swiss): 3

### C5076-3 Copper (II) sulfate anhydrous, extra pure

HS-NO: 2833 25 00 00

Assay (iodometric) .....	min. 99 %	Lead (Pb) .....	max. 0.008 %
Insoluble in water .....	passes test	Magnesium (Mg) .....	max. 0.01 %
Chloride (Cl) .....	max. 0.01 %	Nickel (Ni) .....	max. 0.01 %
Arsenic (As) .....	max. 0.0005 %	Potassium (K) .....	max. 0.01 %
Calcium (Ca) .....	max. 0.02 %	Non precipitable with H <sub>2</sub> S .....	max. 0.3 %
Iron (Fe) .....	max. 0.01 %	Loss on drying (250 °C) .....	max. 1 %

**Code Capacity**  
C5076-3-0500 500 g

## COPPER (II) SULFATE PENTAHYDRATE



Synonyms: *Copper monosulfate pentahydrate, Copper vitriol pentahydrate*

- CuSO<sub>4</sub>·5H<sub>2</sub>O  
- M = 249.68 g/mol  
- CAS [7758-99-8]  
- EC number: 231-847-6

**Toxicological data:**  
- LD 50 (oral, rat): 300 mg/kg  
(anhydrous substance)  
- MAK: 1 mg/m<sup>3</sup>  
- WGK: 2

**Transport/storage:**  
- ADR: 9 M7 III UN 3077  
- IMDG: 9 III UN 3077  
- IATA/ICAO: 9 III UN 3077  
- PAX: 911  
- CAO: 911  
- LGK: 10-13  
- Disposal: 15

**Physical data:**  
- Spec. density: 2.29 g/cm<sup>3</sup>  
- Bulk density: ~ 900 - 1200 kg/m<sup>3</sup>  
- Solub. in water (20 °C): ~ 317 g/l  
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 3.5 - 4.5

**Safety:**  
- EC Index no.: 029-004-00-0  
- R: 22-36/38-50/53  
- S: 22-46-60-61  
- Poison class CH (Swiss): 3

### C5083-1 Copper (II) sulfate pentahydrate, reagent grade

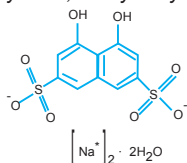
HS-No: 2833 25 00 00

Assay (Iodometric) .....	min. 99%	Potassium (K) .....	max. 0.001%
Insoluble matter .....	max. 0.005%	Sodium (Na) .....	max. 0.005%
pH (5%, H <sub>2</sub> O) .....	3.7 - 4.5	Nickel (Ni) .....	max. 0.005%
Arsenic (As) .....	max. 0.00005%	Lead (Pb) .....	max. 0.005%
Calcium (Ca) .....	max. 0.005%	Zinc (Zn) .....	max. 0.03%
Iron (Fe) .....	max. 0.003%	Non precipitable with H <sub>2</sub> S (as SO <sub>4</sub> ) .....	max. 0.1%

**Code Capacity**  
C5083-1-0500 500 g  
C5083-1-1000 1 kg

## CHROMOTROPIC ACID, DISODIUM SALT DIHYDRATE

Synonyms: *4,5-Dihydroxy-2,7-naphthalenedisulfonic acid disodium salt dihydrate*



- C<sub>10</sub>H<sub>8</sub>NaO<sub>8</sub>S<sub>2</sub>·2H<sub>2</sub>O  
- M = 400.30 g/mol  
- CAS [5808-22-0]  
- EC number: 204-972-9

**Physical data:**  
- Form: Solid  
- Bulk density: 780 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 170 g/l  
- pH (10 g/l H<sub>2</sub>O, 20 °C) ~ 3.6

**Toxicological data:**  
- WGK: 3

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 3

### C5505-1 Chromotropic acid, disodium salt dehydrate, reagent grade

HS-No: 2908 20 00 90

Assay .....	min. 98.5 %	Suitability for determination or formaldehyde .....	passes test
Identity (IR-spectrum) .....	passes test	Suitability for determination of nitrates .....	passes test
Appearance .....	off-white powder	Water .....	8.5 - 9.5 %
Clarity of solution .....	passes test		
Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %		

**Code Capacity**  
C5505-1-0025 25 g



## CHROMIUM (VI) OXIDE



Synonyms: Chromium trioxide, Chromic anhydride

- CrO<sub>3</sub>
- M = 99.99 g/mol
- CAS [1333-82-0]
- EC number: 215-607-8

### Physical data:

- Spec. density: 2.7 g/cm<sup>3</sup>
- Bulk density: ~ 900 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: 197 °C
- pH (100 g/l H<sub>2</sub>O, 20 °C) < 1

### Toxicological data:

- LD 50 (oral, rat): 50 mg/kg
- WGK: 3

### Safety:

- EC Index no.: 024-001-00-0
- R: 49-8-25-35-43-50/53
- S: 53-26-36/37/39-45-60-61
- Poison class CH (Swiss): 2

### Transport/storage:

- ADR: 5.1 OC2 II UN 1463
- IMDG: 5.1 II UN 1463
- IATA/ICAO: 5.1 II UN 1463
- PAX: 508
- CAO: 511
- LGK: 5.1 B
- Disposal: 15

### C6002-3 Chromium (VI) oxide, extra pure

HS-No: 2819 10 00 00

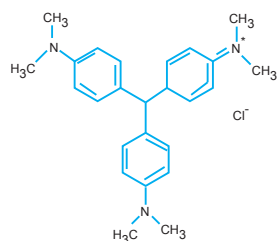
Assay (Iodometric) .....	min. 99.0 %	Lead (Pb) .....	max. 0.01 %
Calcium (Ca) .....	max. 0.02 %	Magnesium (Mg) .....	max. 0.01 %
Iron (Fe) .....	max. 0.02 %	Zinc (Zn) .....	max. 0.01 %
Potassium (K) .....	max. 0.02 %	Total Sulfur (S) .....	max. 0.05 %
Sodium (Na) .....	max. 0.2 %	Total Phosphorus (P) .....	max. 0.02 %
Copper (Cu) .....	max. 0.02 %	Chloride (Cl) .....	max. 0.1 %

Code	Capacity
C6002-3-0500	500 g

## CRYSTAL VIOLET



Synonyms: Hexamethylenepararosaniline chloride, Hexamethyl-p-rosanilinium chloride, Methyl violet 10 B



- C<sub>25</sub>H<sub>30</sub>ClN<sub>3</sub>
- M = 407.99 g/mol
- CAS [548-62-9]
- EC number: 208-953-6

### Physical data:

- Spec. density: 1.19 g/cm<sup>3</sup> (20 °C)
- Solub. in water 10 g/l (20 °C)
- M = 407.99 g/mol
- pH value: 2.5 - 3.5 (10 g/l H<sub>2</sub>O, 20 °C)
- Melting point: 189 - 194 °C
- Bulk density: ~ 220 - 400 kg/m<sup>3</sup>

### Toxicological data:

- LD 50 (oral, rat): 420 mg/kg

### Safety:

- Harmful, irritant, dangerous for the environment
- R: 22-40-41-50/53
- S: 22-26-36/37/39-61
- WGK: 3
- Poison class CH: 2

### Transport/storage:

- Packing-cat: A
- Road/Rail 9/12c
- IATA/DGR: 9 III UN 3077
- PAX: 911
- CAO: 911
- LGK: 10-13

### C6009-0 Crystal Violet

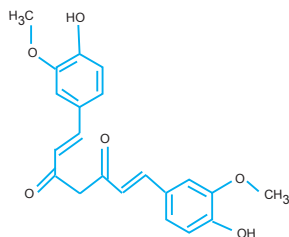
HS-No: 3204 13 00 00

Assay .....	min. 96 %
Loss on drying .....	max. 10 %
Residue on ignition (as SO <sub>4</sub> ) .....	max. 3 %

Code	Capacity
C6009-0-0025	25 g
C6009-0-0250	250 g

## CURCUMIN

Synonyms: 1,7 Bis (4-hydroxy-3-methoxyphenyl)- 1,6-heptadiene-3,5-dione, Turmeric yellow, Diferuloylmethane



- C<sub>21</sub>H<sub>20</sub>O<sub>6</sub>
- M = 368.39 g/mol
- CAS [458-37-7]
- EC number: 207-280-5

### Physical data:

- Solub. in water (20 °C) insoluble
- Melting point: 170 - 175 °C

### Transport/storage:

- Beilstein: 8,554, I 757, III 4312, IV 3697
- LGK: 10-13
- Disposal: 3

### C6010-1 Curcumin, reagent grade

HS-No: 2914 50 00 00

Melting point .....	181 - 185 °C	Solubility test in alcohols .....	passes test
Sensitivity test .....	passes test	Residue after ignition (a sulfate) .....	max. 0.5 %

Code	Capacity
C6010-1-0005	5 g

## CHLOROBENZENE



Synonyms :

- C<sub>6</sub>H<sub>5</sub>Cl
- F.W.: 112.58
- CAS: 108-90-7

### Physical Data:

- Elutropic value (E<sup>0</sup>) (on Alumina): 4.0
- Polarity index (P<sup>0</sup>): 2.7
- Density (g/ml, 25 °C): 1.107
- Boiling point (°C): 132
- Refractive index (25 °C): 1.525

### C6020-4 Chloroform, HPLC grade

HS-No: 2903 13 00 00

See specification in Solvent Specification - 34

Code	Capacity
C6020-4-1001	1.0 L
C6020-4-4001	4.0 L

## CYCLOHEXANE



Synonyms: Hexahydrobenzene, Hexamethylene, Napthene



- C<sub>6</sub>H<sub>12</sub>
- M = 84.16 g/mol
- CAS [110-82-7]
- EC number: 203-806-2

**Physical data:**

- Density: 0.78 g/cm<sup>3</sup>
- Solub. in water (20 °C): 55 g/l
- Melting point: 6 °C
- Boiling point: 80.7 - 81 °C
- Flash point: -18 °C
- Ignition temp.: 260 °C
- Vapour pressure: (20 °C) 103 hPa
- Refraction index: (n<sub>20 °C/D</sub>) 1.4264
- Viscosity: (kinetic, 20 °C) 1.26 mm<sup>2</sup>/s

- Dielectric const.: (20 °C) 2.0
- Evap. heat: (81 °C) 389 kJ/kg
- Saturation conc.: (20 °C) 357 g/m<sup>3</sup>
- Expl. limit (upper): 8.3 Vol%
- Expl. limit (lower): 1.2 Vol%

- S: 9-16-33-60-61-62
- VbF class: AI
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 3 F1 II UN 1145
- IMDG: 3 II UN 1145
- IATA/ICAO: 3 II UN 1145
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

**Toxicological data:**

- LD 50 (oral, rat): 12705 mg/kg
- MAK: 200 ml/m<sup>3</sup>, 700 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 601-017-00-1
- R: 11-38-50/53-65-67

### C6033-1 Cyclohexane, reagent grade

HS-No: 2902 11 00 00

Assay (GC) .....	min. 98 %	Iron (Fe) .....	max. 0.00001 %
Color .....	max. 10 Hazen	Magnesium (Mg) .....	max. 0.00001 %
Acidity .....	max. 0.0003 meq/g	Manganese (Mn) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.00005 %	Nickel (Ni) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.00001 %	Lead (Pb) .....	max. 0.00001 %
Boron (B) .....	max. 0.000002 %	Tin (Sn) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Aromatics (as benzene) .....	max. 0.001 %
Calcium (Ca) .....	max. 0.00005 %	Cyclohexene (G.C) .....	max. 0.05 %
Zinc (Zn) .....	max. 0.00001 %	Ethanol (G.C) .....	max. 0.01 %
Cobalt (Co) .....	max. 0.000002 %	Substances Darkened by H <sub>2</sub> SO <sub>4</sub> ....	passet test
Copper (Cu) .....	max. 0.000002 %	Non-Volatile Matter .....	max. 0.0005 %
Chromium (Cr) .....	max. 0.000002 %	Water (K.F) .....	max. 0.01 %

Code	Capacity
C6033-1-2501	2.5 L

### C6033-4 Cyclohexane, HPLC grade

HS-No: 2902 11 00 00

See specification in Solvent Specification - 36

Code	Capacity
C6033-4-1001	1.0 L
C6033-4-4001	4.0 L

### C6033- 11 Cyclohexane, Pesticide grade

HS-No: 2902 11 00 00

See specification in Solvent Specification - 22

Code	Capacity
C6033-11-1001	1.0 L
C6033-11-4001	4.0 L

## CYCLOHEXENE



Synonyms: 1,2,3,4-Tetrahydrobenzene



- C<sub>6</sub>H<sub>10</sub>
- M = 82.15 g/mol
- CAS [110-83-8]
- EC number: 203-807-8

**Physical data:**

- Form: Liquid
- Density: 0.81 g/cm<sup>3</sup>
- Solub. in water (20 °C): 0.21 g/l
- Melting point: -104 °C
- Boiling point: 80 °C
- Flash point: -17 °C
- Ignition temp.: 310 °C
- Vapour pressure: (20 °C) 90 hPa

- Refraction index: (n<sub>20 °C/D</sub>) 1.446
- Expl. limit (upper): 7.7 Vol%
- Expl. limit (lower): 1.2 Vol%
- pH (0.2 g/l H<sub>2</sub>O, 20 °C) 7 - 8

**Toxicological data:**

- LD 50 (oral, rat): 12705 mg/kg
- MAK: 200 ml/m<sup>3</sup>, 700 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- R: 11-21/22

- S: 16-23.2-51-33-36/37-46
- VbF class: AI
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 3 F1 II UN 2256
- IMDG: 3 II UN 2256
- IATA/ICAO: 3 II UN 2256
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

### C6040-2 Cyclohexene, synthesis grade

HS-No: 2902 19 90 00

Assay (G.C) .....	min. 99 %	Density (20 °/4 °) .....	0.810 - 0.811
Identity (IR-Spectrum) .....	passes test	Water .....	max. 0.03 %

Code	Capacity
C6040-2-1001	1 L

# CYCLOHEXANONE



Synonyms: Pimelic ketone



- C<sub>6</sub>H<sub>10</sub>O
- M = 98.15 g/mol
- CAS [108-94-1]
- EC number: 203-637-1

**Physical data:**

- Form: Liquid
- Density: 0.95 g/cm<sup>3</sup>
- Solub. in water (20 °C): ~ 80 g/l
- Melting point: -31 °C
- Boiling point: 156 °C
- Flash point: 43 °C
- Ignition temp.: 430 °C
- Vapour pressure: (20 °C) 4.0 hPa
- Dipolar moment: (20 °C) 2.9 Debye

- Dielectric const.: (25 °C) 18.3
- Saturation conc.: (20 °C) 19 g/m<sup>3</sup>
- Saturation conc.: (20 °C) 19 g/m<sup>3</sup>
- Expl. limit (upper): 9.4 Vol%
- Expl. limit (lower): 1.3 Vol%
- pH (50 g/l H<sub>2</sub>O) ~ 5

**Toxicological data:**

- LD 50 (oral, rat): 1300 - 1840 mg/kg
- WGK: 1

**Safety:**

- EC Index no.: 606-010-00-7
- R: 10-20

- S: 25
- VbF class: All
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 3 F1 III UN 1915
- IMDG: 3 III UN 1915
- IATA/ICAO: 3 III UN 1915
- PAX: 309
- CAO: 310
- LGK: 3 A
- Disposal: 1

**C6043-1 Cyclohexanone, reagent grade**

HS-No: 2914 22 00 00

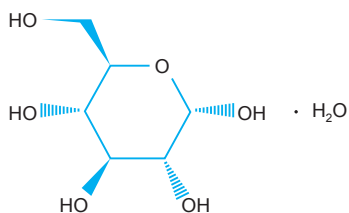
Assay .....	min. 99.5 %	Mixing test with water .....	passes test
Refractive index .....	1.4500 - 1.4510	Non-volatile matter .....	max. 0.05 %

Code	Capacity
C6043-1-2501	2.5 L

# **Chemical list : D**

## D(+)-GLUCOSE MONOHYDRATE

### Synonyms:



- C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>·H<sub>2</sub>O
- M = 198.17 g/mol
- CAS [5996-10-1]
- EC number: 200-075-1

- Ignition temp.: ~ 500 °C
- pH (100 g/l H<sub>2</sub>O, 20 °C) 6 - 7

### Safety:

- Poison class CH (Swiss): F

### Toxicological data:

- LD 50 (oral, rat): 25800 mg/kg (anhydrous substance)
- WGK: 0

### Transport/storage:

- LGK: 10-13

D

### D1015-3 D(+)-Glucose monohydrate, extra pure

HS-No: 1702 30 51 00

Specific rotation ([α]<sub>20</sub> °/D,

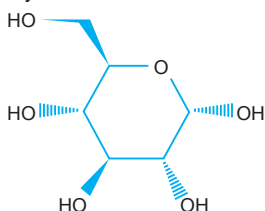
c=10, H <sub>2</sub> O) .....	+52.6 - +53.2 °
Acidity/Alkalinity .....	passes test
Insoluble in water .....	max. 0.01 %
Chlorides (Cl) .....	max. 0.005 %
Arsenic (As) .....	max. 0.0001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %

Sulfite (as SO <sub>4</sub> ) .....	max. 0.001 %
Calcium (Ca) .....	max. 0.02 %
Heavy metals (as Pb) .....	max. 0.0005 %
Lead (Pb) .....	max. 0.00005 %
Sulfated ash .....	max. 0.1 %
Water .....	max. 1 %
Foreign sugars, starch and dextrines .....	passes test

Code	Capacity
D1015-3-0500	500 g
D1015-3-1000	1 kg

## D(+)-GLUCOSE ANHYDROUS

### Synonyms: Dextrose



- C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>
- M = 180.16 g/mol
- CAS [50-99-7]
- EC number: 200-075-1

### Physical data:

- Bulk density: ~630 kg/m<sup>3</sup>
- Solub. in water (20 °C): ~ 470 g/l
- Melting point: ~ 146 °C
- Ignition temp.: ~ 500 °C
- pH (100 g/l H<sub>2</sub>O, 20 °C) 6 - 7

### Toxicological data:

- LD 50 (oral, rat): 25800 mg/kg
- WGK: 0

### Safety:

- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13

### D1019-3 D(+)-Glucose anhydrous, extra pure

HS-No: 1702 30 51 00

Specific rotation ([α]<sub>20</sub> °/D,

c=10, H <sub>2</sub> O) .....	+52.6 - +53.2 °
Acidity/Alkalinity .....	passes test
Insoluble in water .....	max. 0.01 %
Chlorides (Cl) .....	max. 0.01 %
Arsenic (As) .....	max. 0.02 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.001 %
Sulfite (SO <sub>2</sub> ) .....	max. 0.0001 %

Calcium (Ca) .....	max. 0.02 %
Heavy metals (as Pb) .....	max. 0.0005 %
Iron (Fe) .....	max. 0.0005 %
Lead (Pb) .....	max. 0.00005 %
Sulfated ash .....	max. 0.1 %
Water .....	max. 1 %
Foreign sugars, starch and dextrines .....	passes test

Code	Capacity
D1019-3-1000	1 kg

## 2,4-DINITROPHENYLHYDRAZINE

### Synonyms: DNP

- C<sub>10</sub>H<sub>9</sub>O
- M = 144.17 g/mol
- CAS [1135-19-3]

### Physical data:

- Solub. in water (20 °C): almost insoluble
- Melting point: ~ 203 °C
- Bulk density: ~ 680 kg/m<sup>3</sup>
- Decomposition point above melting point

### Toxicological data:

- LD 50 (oral, rat): 654 mg/kg
- WGK: 3\*

### Safety:

- Harmful, irritant
- R: 2-22-36/38
- S: 35

### Transport/storage:

- Packing-cat R
- Road/Rail: 4.1/21 a
- IATA/DGR
- CAO: F
- PAX: F
- LGK: 4.1 A
- Disposal: 3

### D3000-1 2,4-Dinitrophenylhydrazine, reagent grade

HS-No: 2928 00 90 00

Assay (HPLC, referred to anhydrous

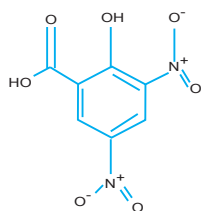
substance) .....	min. 99 %
Identity (IR-spectrum) .....	passes test
Insoluble in acid .....	passes test
Iron (Fe) .....	max. 0.003 %

Chloro-2,4-dinitrobenzene (HPLC) ...	max. 0.05 %
1,3-Dinitrobenzene (HPLC) .....	max. 0.05 %
Related Substance (TLC) .....	passes test
Sulfated Ash .....	max. 0.1 %
Water .....	30 - 35 %

Code	Capacity
D3000-1-0025	25 g

## 3,5-DINITROSALICYLIC ACID

### Synonyms: 3,5-Dinitro-2-hydroxybenzoic acid, 3,5-Dinitrosalicylic acid



- C<sub>7</sub>H<sub>4</sub>N<sub>2</sub>O<sub>7</sub>
- M = 228.12 g/mol
- CAS [609-99-4]
- EC number: 210-204-3

### Physical data:

- Solub. in water (20 °C): soluble
- pH value: ~ 1.3 - 1.8 (10 g/l, H<sub>2</sub>O, 20 °C)
- Melting point: 170 - 174 °C
- Bulk density: ~ 400 kg/m<sup>3</sup>

- Decomposition point above melting point

### Toxicological data:

- LD 50 (oral, rat): 860 mg/kg
- WGK: 3\*

### Safety:

- Harmful
- R: 22
- S: 24/25

### Transport/storage:

- Packing-cat G
- Road/Rail: 6.1/25 b
- IMDG-Code: 6.1/II UN 2811
- IATA/DGR: 6.1 II UN 2811
- CAO: 615
- PAX: 613
- LGK: 10-13
- Disposal: 4

**D3001-3 3,5-Dinitrosalicylic acid, extra pure**

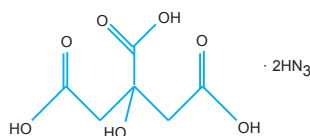
HS-No: 2918 29 90 00

Assay (Acidimetric) .....	min. 98 %	Performance test (Suitability as reagent for Amylase-and Diastase-determinations) .....	passes test
Identity (IR-spectrum) .....	passes test		
Melting point .....	170 - 174 °C		
Absorption maximum $\lambda$ max (Ethanol) .....	334 - 336 nm		
Spec. Absorptivity A 1%/1cm ( $\lambda$ max; 0.001%, ethanol abs.) .....	400 - 440		

Code	Capacity
D3001-3-0025	25 g

**DI-AMMONIUM HYDROGEN CITRATE**

Synonyms: Ammonium citrate dibasic



-  $C_6H_8O_7 \cdot 2NH_3$   
 - M = 226.19 g/mol  
 - CAS [3012-65-5]  
 - EC number: 221-146-3

**Physical data:**  
 - Spec. density: 1.48 g/cm<sup>3</sup>  
 - Bulk density: ~ 400 - 600 kg/m<sup>3</sup>

- Solub. in water (20 °C): freely soluble  
 - pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 5.2

**Toxicological data:**  
 - WGK: 1

**Safety:**  
 - Poison class CH (Swiss): 4

**Transport/storage:**  
 - LGK: 10-13  
 - Disposal: 14

**D3004-1 di-Ammonium hydrogen citrate, reagent grade**

HS-No. 2918 15 00 00

Assay (acidimetric) .....	min. 99 %	Phosphates (PO <sub>4</sub> ) .....	max. 0.001 %
Insoluble matter .....	max. 0.005 %	Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %
pH (5%, H <sub>2</sub> O) .....	4.7 - 5.3	Heavy metals (as Pb) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.0005 %	Iron (Fe) .....	max. 0.0005 %
Oxalates (C <sub>2</sub> O <sub>4</sub> ) .....	max. 0.05 %	Sulfated ash .....	max. 0.02 %

Code	Capacity
D3004-1-0500	500 g
D3004-1-1000	1 kg

**DI-AMMONIUM HYDROGEN PHOSPHATE**

Synonyms: Ammonium biphosphate, Diammonium hydrogen phosphate, Ammonium phosphate dibasic, Fyrex

-  $(NH_4)_2HPO_4$   
 - M = 132.06 g/mol  
 - CAS [7783-28-0]  
 - EC number: 231-987-8

**Physical data:**  
 - Spec. density: 1.62 g/cm<sup>3</sup>  
 - Bulk density: ~ 800 - 1000 kg/m<sup>3</sup>

**Toxicological data:**  
 - WGK: 1

**Safety:**  
 - Poison class CH (Swiss): 4

**Transport/storage:**  
 - LGK: 10-13  
 - Disposal: 14

**D3008-1 di-Ammonium hydrogen phosphate, reagent grade**

HS-No. 3105 30 00 00

Assay (acidimetric) .....	min. 99 %	Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %
Insoluble in water .....	max. 0.005 %	Arsenic (As) .....	max. 0.00005 %
Total sulfur (as SO <sub>4</sub> ) .....	max. 0.004 %	Heavy metals (as Pb) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	7.8 - 8.2	Iron (Fe) .....	max. 0.005 %
Chlorides (Cl) .....	max. 0.0005 %	Potassium (K) .....	max. 0.001 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.001 %	Sodium (Na) .....	max. 0.002 %

Code	Capacity
D3008-1-0500	500 g

**D3008-3 di-Ammonium hydrogen phosphate, extra pure**

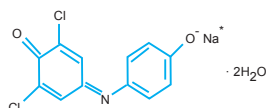
HS-No. 3105 30 00 00

Assay (acidimetric) .....	min. 99 %	Sulfates (SO <sub>4</sub> ) .....	max. 0.02 %
Insoluble in water .....	max. 0.01 %	Arsenic (As) .....	max. 0.0001 %
pH (1%, H <sub>2</sub> O) .....	7.8 - 8.2	Heavy metals (as Pb) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.002 %	Iron (Fe) .....	max. 0.001 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.01 %		

Code	Capacity
D3008-3-0500	500 g
D3008-3-1000	1 kg

**2,6-DICHLOROPHENOL-INDOPHENOL, SODIUM SALT DIHYDRATE**

Synonyms:



-  $C_{12}H_6Cl_2NNaO_2 \cdot 2H_2O$   
 - M = 326.11 g/mol  
 - CAS [620-45-1]  
 - EC number: 210-640-4

**Physical data:**  
 - Form: Solid  
 - Solub. in water (20 °C): slightly soluble  
 - Bulk density: 320 kg/m<sup>3</sup>

**Transport/storage:**  
 - LGK: 10-13  
 - Disposal: 3

**D3020-1 2,6-Dichlorophenol-indophenol, sodium salt dehydrate, indicator, reagent grade**

HS-No: 2925 20 00 90

Assay (titr. With HClO <sub>4</sub> , referred to dried substance) .....	min. 98 %	TLC-test .....	passes test
Identity (IR-spectrum) .....	passes test	Interfering dyes .....	passes test
		Loss on drying (120 °C) .....	max. 12.0 %

Code	Capacity
D3020-1-0025	25 g



## 1,2-Dichloroethane



### Synonyms:

- ClCH<sub>2</sub>CH<sub>2</sub>Cl
- F.W.: 98.96
- CAS: 107-06-2

### Physical Data:

- Elutropic value (E°) (on Alumina): 0.44
- Polarity Index (P'): 3.5
- Viscosity (cP, 25 °C): 0.779
- Density (g/ml, 25 °C): 1.245
- Boiling point (°C): 84
- Solubility of water (% , 20 °C): 0.15
- Refractive index (25 °C): 1.444

### Transport/storage:

- IMDG : 9 III UN 3077
- Environmentally Hazardous Substance, Solid, N.O.S.
- Marine Pollutant : P

D

### D3025-4 1,2-Dichloroethane, HPLC Grade

See specification in Solvent Specification - 37

HS-No: 2903 15 00

Code	Capacity
D3025-4-1001	1.0 L
D3025-4-4001	4.0 L

## o-Dichlorobenzene



### Synonyms:

- Formula: C<sub>6</sub>H<sub>4</sub>Cl<sub>2</sub>
- F.W.: 147.00
- CAS: 95-50-1

### Physical Data:

- Viscosity (cP, 20 °C): 1.32
- Density (g/ml, 25 °C): 1.3058
- Boiling point (°C): 180.5
- Refractive index (20 °C): 1.5514

### Transport/storage:

- IMDG: 6.1 III UN 1591
- IATA/ICAO: 6.1 III UN 1591

### D3030-4 o-Dichlorobenzene, HPLC Grade

See specification in Solvent Specification - 36

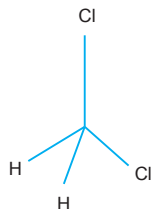
HS-No: 2903 61 00

Code	Capacity
D3030-4-1001	1.0 L
D3030-4-4001	4.0 L

## DICHLOROMETHANE



### Synonyms: Methylene chloride



- CH<sub>2</sub>Cl<sub>2</sub>
- M = 84.93 g/mol
- CAS [75-09-2]
- EC number: 200-838-9

### Physical data:

- Density: 1.32 g/cm<sup>3</sup>
- Solub. in water (20 °C): 20 g/l
- Melting point: ~ -95 °C
- Boiling point: 40 °C
- Ignition temp.: 605 °C
- Vapour pressure: (20 °C) 475 hPa
- Viscosity: (20 °C) 0.43 mPas
- Dipolar moment: (20 °C) 1.6 Debye

- Dielectric const.: (20 °C) 9.1
- Evap. heat: (40 °C) 329 kJ/kg
- Saturation conc.: (20 °C) 1549 g/m<sup>3</sup>
- Expl. limit (upper): 22 Vol%
- Expl. limit (lower): 13 Vol%
- pH (20 °C) 7

### Toxicological data:

- LD 50 (oral, rat): 2388 mg/kg
- MAK: 100 ml/m<sup>3</sup>, 350 mg/m<sup>3</sup>
- WGK: 2

### Safety:

- EC Index no.: 602-004-00-3
- R: 40
- S: 23.2-51-25-36/37
- Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 6.1 T1 III UN 1593
- IMDG: 6.1 III UN 1593
- IATA/ICAO: 6.1 III UN 1593
- PAX: 605
- CAO: 612
- LGK: 10-13
- Disposal: 2

### D3056-1 Dichloromethane, reagent grade (Stabilized with approx. 50 ppm of amylene)

HS-No: 2903 12 00 00

Assay .....	min. 99.5 %	Titration acid .....	max. 0.0003 meq/g
Appearance .....	clear	Water .....	max. 0.02 %
Colour .....	max. 10 APHA	Free Halogens .....	passes test
Residue After Evaporation .....	max. 0.002 %		

Code	Capacity
D3056-1-2501	2.5 L

### D3056-4 Dichloromethane, HPLC grade

See specification in Solvent Specification - 37

HS-No: 2903 12 00 00

Code	Capacity
D3056-4-1001	1.0 L
D3056-4-4001	4.0 L

### D3056-11 Dichloromethane, Pesticide grade

See specification in Solvent Specification - 22

HS-No: 2903 12 00 00

Code	Capacity
D3056-11-1001	1.0 L
D3056-11-4001	4.0 L

### D3056-12 Dichloromethane, Ultimate grade

See specification in Solvent Specification - 12

HS-No: 2903 12 00 00

Code	Capacity
D3056-12-1001	1.0 L
D3056-12-4001	4.0 L

**D3056-14 Dichloromethane, BIO grade**

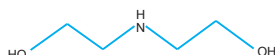
HS-No: 2903 12 00 00

See specification in Solvent Specification - 55

Code	Capacity
D3056-14-1001	1.0 L
D3056-14-4001	4.0 L

**DIETHANOLAMINE**

Synonyms: 2,2'-Iminodiethanol, Bis(b-hydroxyethyl) anime, 2,2'-Dihydroxydiethylamine



- C<sub>4</sub>H<sub>11</sub>NO<sub>2</sub>  
 - M = 105.14 g/mol  
 - CAS [111-42-2]  
 - EC number: 203-868-0

**Physical data:**

- Density: 1.09 g/cm<sup>3</sup>  
 - Solub. in water (20 °C): miscible  
 - Melting point: 28 °C

- Boiling point: 269 - 271 °C  
 - Flash point: 177 °C  
 - Ignition temp.: 370 °C  
 - Vapour pressure: (20 °) < 0.01 hPa  
 - Viscosity: (30 °C) 352 mPas  
 - Expl. limit (upper): 6.4 Vol%  
 - Expl. limit (lower): 1.7 Vol%  
 - pH (10 g/l H<sub>2</sub>O, 20 °C) ~ 11

**Toxicological data:**

> LD 50 (oral, rat): 676 mg/kg  
 > WGK: 1

**Safety:**

- EC Index no.: 603-071-00-1  
 - R: 22-38-41-48/22  
 - S: 26-36/37/39-46  
 - Poison class CH (Swiss): 4

**Transport/storage:**

- LGK: 10-13  
 - Disposal: 1

**D3083-1 Diethanolamine, reagent grade**

HS-No: 2922 12 00 10

Assay (acidimetric) .....	min. 99 %
Chloride (Cl) .....	max. 0.0005 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.002 %
Heavy metals (as Pb) .....	max. 0.0001 %
Iron (Fe) .....	max. 0.0001 %

Triethanolamine .....	max. 1 %
Orgamoc volatile impurities .....	passes test
Sulfated ash .....	max. 0.005 %
Water .....	max. 0.15 %

Code	Capacity
D3083-1-0500	500 ml

**D3083-2 Diethanolamine, synthesis grade**

HS-No: 2922 12 00 10

Assay (acidimetric) .....	min. 98 %
Sulfated ash .....	max. 0.01 %
Water .....	max. 0.5 %

Code	Capacity
D3083-2-2500	2.5 L

**1,4-Dioxane**

Synonyms:

- Formula: (CH<sub>2</sub>)<sub>4</sub>O<sub>2</sub>  
 - F.W.: 88.11  
 - CAS: 123-91-1

**Physical Data:**

- Eluotropic value (E<sup>o</sup>) (on Alumina): 0.56  
 - Polarity index (P'): 4.8  
 - Viscosity (cP, 25 °C): 1.177  
 - Density (g/ml, 25 °C): 1.028  
 - Boiling point (°C): 101.0  
 - Solubility of water (% 20 °C): Miscible  
 - Refractive index (25 °C): 1.420

**Transport/storage:**

- IMDG : 3, III UN 1165  
 - IATA/ICAO: 3 III UN 1165  
 - EC No.204-661-8

**D3090-4 1,4-Dioxane, HPLC Grade**

HS-No: 2932 99 85

See specification in Solvent Specification - 39

Code	Capacity
D3090-4-1001	1.0 L
D3090-4-4001	4.0 L

**D3090-15 1,4-Dioxane, Ultra Dry Grade**

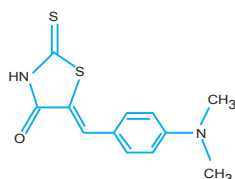
HS-No: 2932 99 85

See specification in Solvent Specification - 62

Code	Capacity
D3090-15-1001	1.0 L
D3090-15-4001	4.0 L

**P-DIMETHYLAMINOBENZALRHODANINE**

Synonyms: p-Dimethylaminobenzalrhosanine



- C<sub>12</sub>H<sub>12</sub>N<sub>2</sub>OS<sub>2</sub>  
 - M = 264.37 g/mol  
 - CAS [536-17-4]  
 - EC number: 208-625-2

**Physical data:**

- Form: Solid  
 - Bulk density: ~ 225 g/cm<sup>3</sup>  
 - Solub. in water (20 °C): almost insoluble

**Safety:**

- Poison class CH (Swiss): 3

**Transport/storage:**

- LGK: 10-13  
 - Disposal: 3

**D3100-1 p-Dimethylaminobenzalrhodanine, reagent grade**

HS-No: 2934 10 00 90

Assay (of S) .....	min. 98 %
Identity (IR-spectrum) .....	passes test
Insoluble in acetone .....	passes test

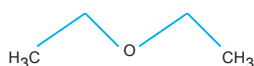
Sulfated Ash .....	max. 0.1 %
Suitability for determination of Ag ...	passes test

Code	Capacity
D3100-1-0025	25 g

## DIETHYL ETHER



Synonyms: Ethyl ether, Ethyl oxide, Ether



- C<sub>4</sub>H<sub>10</sub>O
- M = 74.12 g/mol
- CAS [60-29-7]
- EC number: 200-467-2

### Physical data:

- Density: 0.71 g/cm<sup>3</sup>
- Solub. in water (20 °C): 69 g/l
- Melting point: -116.3 °C
- Boiling point: 34.6 °C
- Flash point: -40 °C
- Ignition temp.: 170 °C
- Vapour pressure: (20 °C) 587 hPa
- Viscosity: (20 °C) 0.23 mPas
- Dipolar moment: (20 °C) 1.25 Debye

- Dielectric const.: (20 °C) 4.3
- Evap. heat: (35 °C) 392 kJ/kg
- Saturation conc.: (20 °C) 1776 g/m<sup>3</sup>
- Expl. limit (upper): 36 Vol%
- Expl. limit (lower): 1.7 Vol%

- S: 9-16-29-33-46
- VbF class: A1
- Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 3 F1 | UN 1155
- IMDG: 3 | UN 1155
- IATA/ICAO: 3 | UN 1155
- PAX: 302
- CAO: 303
- LGK: 3 A
- Disposal: 1

### Toxicological data:

- LD 50 (oral, rat): 1215 mg/kg
- MAK: 400 ml/m<sup>3</sup>, 1200 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 603-022-00-4
- R: 12-19-22-66-67

### D3103-1 Diethyl ether, reagent grade

Purity (GC) .....	min. 99.5%	Aluminium (Al) .....	max. 0.0005%
Identity (IR) .....	conforms	Boron (B) .....	max. 0.000002%
Colour .....	max. 10 Hazen	Barium (Ba) .....	max. 0.00001%
Acidity .....	max. 0.0002 meq/g	Calcium (Ca) .....	max. 0.00005%
Alkalinity .....	max. 0.0002 meq/g	Cadmium (Cd) .....	max. 0.000005%
Density (d <sub>20 °C/4 °C</sub> ) .....	0.712 - 0.714	Cobalt (Co) .....	max. 0.000002%
Acetone (GC) .....	max. 0.005%	Chromium (Cr) .....	max. 0.000002%
Ethanol (GC) .....	max. 0.05%	Copper (Cu) .....	max. 0.000002%
Methanol (GC) .....	max. 0.02%	Iron (Fe) .....	max. 0.00001%
Aldehydes (as CH <sub>3</sub> CHO) .....	max. 0.001%	Magnesium (Mg) .....	max. 0.00001%
Carbonyl Compounds (asCO) .....	max. 0.001%	Manganese (Mn) .....	max. 0.000002%
Matter discoloured by (H <sub>2</sub> SO <sub>4</sub> ) .....	max. 10 Hazen	Nickel (Ni) .....	max. 0.000002%
Peroxide (as H <sub>2</sub> O <sub>2</sub> ) .....	max. 0.00003%	Lead (Pb) .....	max. 0.00001%
Evaporation Residue .....	max. 0.001%	Tin (Sn) .....	max. 0.00001%
Water .....	max. 0.005%	Zinc (Zn) .....	max. 0.00001%

HS-No: 2909 11 00 00

Code	Capacity
D3103-1-2501	2.5 L

### D3103-4 Diethyl ether, HPLC grade

See specification in Solvent Specification - 41

HS-No: 2909 11 00 00

Code	Capacity
D3103-4-1001	1.0 L
D3103-4-4001	4.0 L

### D3103-11 Diethyl ether, Pesticide grade

See specification in Solvent Specification - 23

HS-No: 2909 11 00 00

Code	Capacity
D3103-11-1001	1.0 L
D3103-11-4001	4.0 L

### D3103-12 Diethyl ether, Ultimate grade

See specification in Solvent Specification - 13

HS-No: 2909 11 00 00

Code	Capacity
D3103-12-1001	1.0 L
D3103-12-4001	4.0 L

### D3103-15 Diethyl ether, Ultra Dry grade

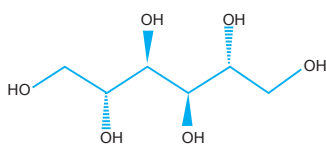
See specification in Solvent Specification - 63

HS-No: 2909 11 00 00

Code	Capacity
D3103-15-1001	1.0 L
D3103-15-4001	4.0 L

## D(-)-MANNITOL

Synonyms: Manna sugar



- C<sub>6</sub>H<sub>14</sub>O<sub>6</sub>  
- M = 182.17 g/mol  
- CAS [69-65-8]  
- EC number: 200-711-8

**Physical data:**  
- Spec. density: 1.49 g/cm<sup>3</sup>  
- Bulk density: ~ 400 - 500 kg/m<sup>3</sup>

- Solub. in water (25 °C): 213 g/l  
- Melting point: 164 - 169 °C  
- Boiling point: (4 hPa) 290 - 295 °C  
- pH (100 g/l H<sub>2</sub>O, 20 °C) 5 - 7

**Toxicological data:**  
- LD 50 (oral, rat): 13500 mg/kg  
- WGK: 0

**Safety:**  
- Poison class CH (Swiss): F

**Transport/storage:**  
- LGK: 10-13

HS-NO. 2905 43 00 00

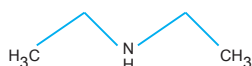
### D3110-1 D(-)-Mannitol, reagent grade

Assay (Iodometric) .....	min. 98 %	Arsenic (As) .....	max. 0.0001 %
Specific rotation ([α] <sub>20</sub> <sup>D</sup> , c=10, sodium borate) .....	+23 - +25 °	Copper (Cu) .....	max. 0.001 %
Red impurities (as glucose) .....	max. 0.05 %	Calcium (Ca) .....	max. 0.001 %
Sulfated Ash .....	max. 0.1 %	Heavy metals (as Pb) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.005 %	Lead (Pb) .....	max. 0.00005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Nickel (Ni) .....	max. 0.0001 %
		Zinc (Zn) .....	max. 0.0005 %

Code	Capacity
D3110-1-0500	500 g

## DIETHYLAMINE

Synonyms: N-Ethylethanamine



- C<sub>4</sub>H<sub>11</sub>N  
- M = 73.14 g/mol  
- CAS [109-89-7]  
- EC number: 203-716-3

**Physical data:**  
- Density: 0.71 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- Melting point: -48 °C  
- Boiling point: 56 °C  
- Flash point: -25 °C  
- Ignition temp.: 310 °C  
- Vapour pressure: (20 °C) 260 hPa  
- Refraction index: (n<sub>20</sub><sup>C/D</sup>) 1.3861

- Expl. limit (upper): 10.1 Vol%  
- Expl. limit (lower): 1.7 Vol%  
- pH (100 g/l H<sub>2</sub>O, 20 °C) > 12

**Toxicological data:**  
- LD 50 (oral, rat): 540 mg/kg  
- MAK: 5 ml/m<sup>3</sup>, 15 mg/m<sup>3</sup>  
- WGK: 1

**Safety:**  
- EC Index no.: 612-003-00-X  
- R: 11-20/21/22-35



- S: 3-16-26-29-36/37/39-45  
- VbF class: B  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- ADR: 3 FC II UN 1154  
- IMDG: 3 II UN 1154  
- IATA/ICAO: 3 II UN 1154  
- PAX: 306  
- CAO: 308  
- LGK: 3 A  
- Disposal: 5

### D3123-1 Diethylamine, reagent grade

Assay .....	min. 99.5 %	Heavy metals (as Pb) .....	max. 0.00005 %
Chlorides (Cl) .....	max. 0.0005 %	Non-volatile matter .....	max. 0.0005 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.02 %	Water .....	max. 0.1 %

HS-No: 2921 12 00 00

Code	Capacity
D3123-1-1000	1 L

### D3123-3 Diethylamine, extra pure

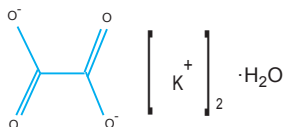
Assay (by GC) .....	min. 99.5%	Density (20 °C) .....	0.703 - 0.709 g/ml
Appearance .....	Colorless liquid ammonia smell	Water .....	max. 0.3
Solubility in water .....	passes test	Residue after evaporation .....	max. 0.001%

HS-No: 2921 12 00 00

Code	Capacity
D3123-3-1000	1 L

## DI-POTASSIUM OXALATE MONOHYDRATE

Synonyms: Oxalic acid dipotassium salt monohydrate



- C<sub>2</sub>K<sub>2</sub>O<sub>4</sub>·H<sub>2</sub>O  
- M = 184.24 g/mol  
- CAS [6487-48-5]  
- EC number: 209-506-8

**Physical data:**  
- Spec. density: 2.13 g/cm<sup>3</sup>  
- Bulk density: ~ 700 - 1100 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 360 g/l  
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 7.0 - 8.5

**Toxicological data:**  
- WGK: 1

**Safety:**  
- EC Index no.: 607-007-00-3  
- R: 21/22  
- S: 24/25-37-46  
- Poison class CH (Swiss): 2

**Transport/storage:**  
- ADR: 6.1 T3 III UN 3282  
- IMDG: 6.1 III UN 3282  
- IATA/ICAO: 6.1 III UN 3282  
- PAX: 619  
- CAO: 619  
- LGK: 10-13  
- Disposal: 3

### D3124-1 di-Potassium oxalate monohydrate, reagent grade

Assay .....	min. 99.8 %	Copper (Cu) .....	max. 0.0001 %
Insoluble in water .....	max. 0.005 %	Iron (Fe) .....	max. 0.0005 %
Substances Darkened by H <sub>2</sub> SO <sub>4</sub> ....	passes test	Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.002 %	Sodium (Na) .....	max. 0.002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %	Nickel (Ni) .....	max. 0.0001 %
Heavy metals (Pb) .....	max. 0.001 %	Loss on drying (105 °C) .....	max. 0.01 %

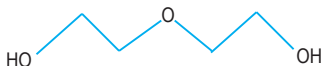
HS-No: 2917 11 00 90

Code	Capacity
D3124-1-0500	500 g

## DIETHYLENE GLYCOL



Synonyms: 2,2'-Oxydiethanol, 2,2'-Dihydroxydiethyl ether, Diglycol



- C<sub>4</sub>H<sub>10</sub>O<sub>3</sub>
- M = 106.12 g/mol
- CAS [111-46-6]
- EC number: 203-872-2

### Physical data:

- Form: Liquid
- Density: 1.12 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: ~ -10 °C
- Boiling point: 244 - 252 °C
- Flash point: > 135 °C
- Ignition temp.: ~ 230 °C

- Vapour pressure: (20 °C) 0.013 hPa
- Refraction index: (n<sub>20 °C/D</sub>) 1.4475
- Dielectric const.: (20 °C) 32
- Saturation conc.: (20 °C) 0.12 g/m<sup>3</sup>
- Expl. limit (upper): 22 Vol%
- Expl. limit (lower): 0.7 Vol%
- pH (H<sub>2</sub>O) 7

### Safety:

- R: 22
- S: 46
- Poison class CH (Swiss): 4

### Transport/storage:

- LGK: 10-13
- Disposal: 1

### Toxicological data:

- LD 50 (oral, rat): 12565 mg/kg
- MAK: 10 ml/m<sup>3</sup>, 44 mg/m<sup>3</sup>
- WGK: 1

### D3129-1 Diethylene Glycol, reagent grade

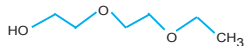
HS-No. 2909 41 00 00

Assay (G.C) .....	min. 99 %	Sulfated Ash .....	max. 0.005 %
Identity (IR-spectrum) .....	passes test	Water .....	max. 0.3 %
Density (20°/4°) .....	1.115 - 1.117		

Code	Capacity
D3129-1-2500	2.5 L

## DIETHYLENE GLYCOL MONOETHYL ETHER

Synonyms: Ethyl diglycol, 2-(2-Ethoxyethoxy)-ethanol, Carbitol



- C<sub>6</sub>H<sub>14</sub>O<sub>3</sub>
- M = 134.18 g/mol
- CAS [111-90-0]
- EC number: 203-919-7

### Physical data:

- Form: Liquid
- Density: 0.99 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -80 °C

- Boiling point: 207 °C
- Flash point: 94 °C
- Ignition temp.: 190 °C
- Vapour pressure: (20 °C) 0.13 hPa
- Refraction index: (n<sub>20 °C/D</sub>) 1.427
- Viscosity: (20 °C) 4.95 mPas
- Dielectric const.: (20 °C) 12.6
- Evap. heat: (202 °C) 403 kJ/kg
- Expl. limit (upper): 12.2 Vol%
- Expl. limit (lower): 1.8 Vol%

### Toxicological data:

- LD 50 (oral, rat): 8690 mg/kg
- WGK: 1

### Safety:

- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13
- Disposal: 1

### D3130-1 Diethylene glycol monoethyl monoethyl ether, reagent grade

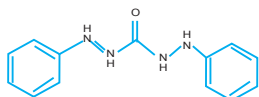
HS-No: 2909 43 00 90

Distillation range (95%) .....	200 - 203 °C	Residue after ignition .....	max. 0.01 %
Density (20 °C) .....	0.987 - 0.990 g/ml	Free acid (as H+), mmol/100 g .....	max. 0.15 %
Solubility test in water .....	passes test	Water .....	max. 0.1 %
Solubility test in ethanol .....	passes test		

Code	Capacity
D3130-1-1000	1.0 L

## 1,5-DIPHENYL CARBAZIDE

Synonyms: 1,5 Dphenylcarbonic dihydrazide



- C<sub>13</sub>H<sub>14</sub>N<sub>4</sub>O
- M = 242.28 g/mol
- CAS [140-22-7]
- EC number: 205-403-7

### Physical data:

- Form: Solid
- Bulk density: ~ 420 kg/m<sup>3</sup>
- Solub. in water (20 °C): slightly soluble
- Melting point: 170 -172 °C

### Toxicological data:

- WGK: 3\*

### Transport/storage:

- LGK: 10-13
- Disposal: 3

### D3140-1 1,5-Diphenyl carbazide, reagent grade

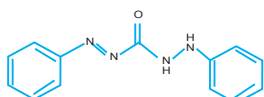
HS-No: 2928 00 90 90

Assay (HPLC) .....	min. 98 %	Diphenyl carbazone .....	passes test
Identity (IR-spectrum) .....	passes test	Sensitivity to Chromates .....	passes test
Melting point .....	173 - 176 °C	Suitability for determination of Hg ...	passes test
Solubility in Aqueous Acetone .....	passes test	Sulfated Ash .....	max. 0.05 %
Insoluble in Ethanol .....	passes test		

Code	Capacity
D3140-1-0025	25 g

## 1,5-DIPHENYL CARBAZONE

Synonyms: Phenyl diazenecarboxylic acid 2-phenylhydrazide, Phenyl azoformic acid 2-phenylhydrazide



- C<sub>13</sub>H<sub>12</sub>N<sub>4</sub>O
- M = 240.27 g/mol
- CAS [538-62-5]
- EC number: 208-698-0

### Physical data:

- Form: Solid
- Solub. in water (20 °C): insoluble
- Melting point: 153 - 158 °C (decomposes)

### Toxicological data:

- WGK: 2

### Transport/storage:

- LGK: 10-13
- Disposal: 3

### D3142-1 1,5-Diphenyl carbazone, reagent grade

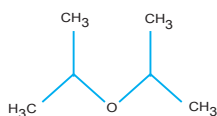
HS-No: 2928 00 90 90

Assay (HPLC) .....	35 - 40 %	Insoluble in Ethanol .....	passes test
Identity (IR-spectrum) .....	passes test	Sulfated Ash .....	max. 0.1 %
Melting point .....	153 - 158 °C	Suitability for determination of Hg ...	passes test
Solubility in Acetone .....	passes test		

Code	Capacity
D3142-1-0025	25 g

## DIISOPROPYL ETHER

Synonyms: Isopropyl ether, 2,2'-Oxybis[propane], 2,2-Propoxypropane



- C<sub>6</sub>H<sub>14</sub>O
- M = 102.18 g/mol
- CAS [108-20-3]
- EC number: 203-560-6

### Physical data:

- Form: Liquid
- Density: 0.72 g/cm<sup>3</sup>
- Solub. in water (20 °C): 12 g/l
- Melting point: -86 °C
- Boiling point: 67 - 70 °C
- Flash point: -28 °C
- Ignition temp.: 405 °C
- Vapour pressure: (20 °C) 175 hPa

- Viscosity: (25 °C) 0.37 mPas
- Dipolar moment: (20 °C) 1.3 Debye
- Dielectric const.: (25 °C) 3.8
- Evap. heat: (68 °C) 285 kJ/kg
- Saturation conc.: (20 °C) 751 g/m<sup>3</sup>
- Expl. limit (upper): 21 Vol%
- Expl. limit (lower): 1.0 Vol%
- pH (20 °C) ~ 7

### Toxicological data:

- LD 50 (oral, rat): 8470 mg/kg
- MAK: 200 ml/m<sup>3</sup>, 850 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 603-045-00-X [2]
- R: 11-19-66-67
- S: 9-16-29-33
- VbF class: AI
- Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 3 F1 II UN 1159
- IMDG: 3 II UN 1159
- IATA/ICAO: 3 II UN 1159
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

HS-No: 2909 19 00 90

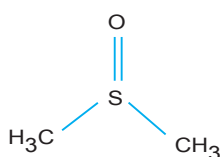
### D3150-2 Diisopropyl Ether, synthesis grade

Assay (G.C) .....	min. 99 %	Peroxides (as H <sub>2</sub> O <sub>2</sub> ) .....	max. 0.005 %
Identity (IR-spectrum) .....	passes test	Non-volatile matter .....	max. 0.005 %
Density (20 /4 °) .....	0.722 - 0.724		

Code	Capacity
D3150-2-2501	2.5 L

## DIMETHYL SULPHOXIDE

Synonyms: DMSO, Sulfinyl bis (methane), Methylsulfoxide, Methysufinylmethane



- C<sub>2</sub>H<sub>6</sub>SO
- M = 78.13 g/mol
- CAS [67-68-5]
- EC number: 200-664-3

### Physical data:

- Form: Liquid
- Density: 1.10 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: 18.5 °C
- Boiling point: (33 hPa) 85 - 87 °C
- Flash point: 95 °C

- Ignition temp.: 300 - 302 °C
- Vapour pressure: (20 °C) 0.6 hPa
- Refraction index: (n 20 °C/D) 1.48
- Viscosity: (25 °C) 1.98 mPas
- Saturation conc.: (20 °C) 8.0 g/m<sup>3</sup>
- Expl. limit (upper): 63.0 Vol%
- Expl. limit (lower): 1.8 Vol%

### Toxicological data:

- LD 50 (oral, rat): 14500 mg/kg
- WGK: 1

### Safety:

- R: 36/38
- S: 26
- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13
- Disposal: 1

HS-No: 2930 90 70 90

### D3161-1 Dimethyl sulphoxide, reagent grade

Assay .....	min. 99.9 %	Titration acid .....	max. 0.001 meq/g
Appearance .....	clear & colourless	Water (coulometric KF) .....	max. 0.1 %
Residue after evaporation .....	max. 0.01 %		

Code	Capacity
D3161-1-2501	2.5 L

### D3161-4 Dimethyl sulphoxide, HPLC grade

See specification in Solvent Specification - 39

HS-No: 2930 90 70 90

Code	Capacity
D3161-4-1001	1.0 L
D3161-4-4001	4.0 L

### D3161-14 Dimethyl sulphoxide, BIO grade

See specification in Solvent Specification - 62

HS-No: 2930 90 70 90

Code	Capacity
D3161-14-1001	1.0 L
D3161-14-4001	4.0 L

## DI-POTASSIUM HYDROGEN PHOSPHATE ANHYDROUS

Synonyms: Dipotassium hydrogen phosphat, Potassium phosphate dibasic

- K<sub>2</sub>HPO<sub>4</sub>
- M = 174.18 g/mol
- CAS [7758-11-4]
- EC number: 231-834-5

### Physical data:

- Spec. density: 2.44 g/cm<sup>3</sup>

- Bulk density: ~ 700 - 1000 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble
- pH (10 g/l H<sub>2</sub>O, 20 °C) 8.7 - 9.4

### Toxicological data:

- WGK: 1

### Safety:

- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13
- Disposal: 14

HS-No: 2835 24 00 00

### D3203-1 di-Potassium hydrogen phosphate anhydrous, reagent grade

Assay (acidimetric, on dried substance) min. 99 %	Heavy metals (as Pb) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	Iron (Fe) .....	max. 0.001 %
Total N .....	Sodium (Na) .....	max. 0.5 %
Chloride (Cl) .....	Loss on drying (105 °C) .....	max. 1 %
Sulfates (SO <sub>4</sub> ) .....		

Code	Capacity
D3203-1-0500	500 g



## DI-POTASSIUM HYDROGEN PHOSPHATE TRIHYDRATE

Synonyms: Secondary potassium phosphate, Potassium phosphate dibasic

- $K_2HPO_4 \cdot 3H_2O$
- M = 228.23 g/mol
- CAS [16788-57-1]
- EC number: 231-834-5

### Physical data:

- Bulk density: ~ 800 kg/m<sup>3</sup>
- Solub. in water (20 °C): freely soluble
- pH (50 g/l H<sub>2</sub>O, 20 °C) 9.2 - 9.4

### Toxicological data:

- WGK: 1

### Safety:

- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13
- Disposal: 14

HS-No: 2835 24 00 00

### D3211-1 di-Potassium hydrogen phosphate trihydrate, reagent grade

Assay (acidimetric) .....	min. 99 %	Arsenic (As) .....	max. 0.00005 %
Insoluble in water .....	max. 0.01 %	Copper (Cu) .....	max. 0.003 %
pH (5%, H <sub>2</sub> O) .....	9.1 - 9.3	Iron (Fe) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.001 %	Lead (Pb) .....	max. 0.003 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.001 %
Total N (as N) .....	max. 0.001 %	Sodium (Na) .....	max. 0.1 %

Code	Capacity
D3211-1-0250	250 g

## DI-SODIUM HYDROGEN PHOSPHATE ANHYDROUS

Synonyms: Disodium hydrogen phosphate, Sodium phosphate dibasic, Sodium monohydrogen phosphate

- $Na_2HPO_4$
- M = 141.96 g/mol
- CAS [7558-79-4]
- EC number: 231-448-7

### Physical data:

- Spec. density: 1.53 g/cm<sup>3</sup>
- Bulk density: ~ 880 kg/m<sup>3</sup>

- Solub. in water (20 °C): 77 g/l
- Melting point: ~ 250 °C (decomposes)
- pH (20 g/l H<sub>2</sub>O, 20 °C) 8.7 - 9.3

### Toxicological data:

- LD 50 (oral, rat): 17000 mg/kg
- WGK: 1

### Safety:

- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13
- Disposal: 14

HS-No: 2835 22 00 00

### D3235-1 di-Sodium hydrogen phosphate anhydrous, reagent grade

Assay .....	min. 99 %	Copper (Cu) .....	max. 0.0003 %
Insoluble in water .....	max. 0.01 %	Heavy metals (as Pb) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	8.7 - 9.3	Iron (Fe) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.001 %	Lead (Pb) .....	max. 0.001 %
Fluorides (F) .....	max. 0.001 %	Potassium (K) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Zinc (Zn) .....	max. 0.0005 %
Total N .....	max. 0.001 %	Loss on drying (105 °C) .....	max. 0.2 %
Arsenic (As) .....	max. 0.00005 %		

Code	Capacity
D3235-1-0500	500 g
D3235-1-1000	1 kg

## DI-SODIUM HYDROGEN PHOSPHATE DIHYDRATE

Synonyms: Sodium monohydrogen phosphate, Sodium phosphate dibasic

- $Na_2HPO_4 \cdot 2H_2O$
- M = 177.99 g/mol
- CAS [10028-24-7]
- EC number: 231-448-7

### Physical data:

- Spec. density: 2.1 g/cm<sup>3</sup>
- Bulk density: ~ 850 - 1000 kg/m<sup>3</sup>

- Solub. in water (20 °C): 93 g/l
- Melting point: 92.5 °C (release of crystalline water)
- pH (50 g/l H<sub>2</sub>O), 20 °C ~ 9.1 - 9.4

### Toxicological data:

- LD 50 (oral, rat): 17000 mg/kg (anhydrous substance)

- WGK: 1

### Safety:

- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13
- Disposal: 14

HS-No: 2835 22 00 00

### D3243-1 di-Sodium hydrogen phosphate dihydrate, reagent grade

Assay .....	min. 99.5 %	Arsenic (As) .....	max. 0.0001 %
pH (5%, H <sub>2</sub> O) .....	9.0 - 9.2	Copper (Cu) .....	max. 0.0003 %
Chloride (Cl) .....	max. 0.001 %	Heavy metals (as Pb) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Iron (Fe) .....	max. 0.0005 %
Total N .....	max. 0.001 %	Potassium (K) .....	max. 0.005 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %	Loss on drying (105 °C) .....	20.0 - 20.4

Code	Capacity
D3243-1-0500	500 g
D3243-1-1000	1 kg

### D3243-3 di-Sodium hydrogen phosphate dihydrate, extra pure

Assay .....	min. 98.5 %	Iron (Fe) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	9.0 - 9.2	Sodium dihydrogen phosphate (NaH <sub>2</sub> PO <sub>4</sub> ) .....	max. 1.7 %
Chlorides (Cl) .....	max. 0.005 %	KMnO <sub>4</sub> red. Matter (as O) .....	max. 0.04 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Loss on drying (130 °C) .....	19.5 - 21.0 %
Arsenic (As) .....	max. 0.0002 %		
Heavy metals (as Pb) .....	max. 0.001 %		

HS-No: 2835 22 00 00

Code	Capacity
D3243-3-0500	500 g
D3243-3-1000	1 kg

## DI-SODIUM HYDROGEN PHOSPHATE DODECAHYDRATE

Synonyms: Sodium monohydrogen phosphate, Sodium phosphate dibasic, Secondary sodium phosphate

- $Na_2HPO_4 \cdot 12H_2O$
- M = 358.14 g/mol
- CAS [10039-32-4]
- EC number: 231-448-7

### Physical data:

- Spec. density: 1.52 g/cm<sup>3</sup>
- Bulk density: ~ 800 - 900 kg/m<sup>3</sup>

- Solub. in water (20 °C): ~ 218 g/l
- Melting point: 35 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 9.0 - 9.4

### Toxicological data:

- LD 50 (oral, rat): 17000 mg/kg (anhydrous substance)
- WGK: 1

### Safety:

- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13
- Disposal: 14

**D3244-1 di-Sodium hydrogen phosphate dodecahydrate, reagen grade**

HS-No: 2835 22 00 00

Assay (acidimetric) .....	99 -102 %	Copper (Cu) .....	max. 0.0002 %
Identity .....	passes test	Heavy metals (as Pb) .....	max. 0.0005 %
Appearance of solution .....	clear	Iron (Fe) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	9.0 - 9.4	Lead (Pb) .....	max. 0.0005 %
Total N (as N) .....	max. 0.001 %	Potassium (K) .....	max. 0.005 %
Chlorides (Cl) .....	max. 0.0005 %	Sodium dihydrogen phosphate .....	passes test
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Reducing substances .....	passes test
Arsenic (As) .....	max. 0.00005 %	Water .....	57 - 61 %

Code	Capacity
D3244-1-0500	500 g
D3244-1-1000	1 kg

**D3244-3 di-Sodium hydrogen phosphate dodecahydrate, extra pure**

HS-No: 2835 22 00 00

Assay (acidimetric) .....	min. 98.5 %	Arsenic (As) .....	max. 0.0001 %
Appearance of solution .....	passes test	Copper (Cu) .....	max. 0.001 %
Insoluble in water .....	max. 0.15 %	Heavy metals (as Pb) .....	max. 0.0008 %
pH (5%, H <sub>2</sub> O) .....	9.0 - 9.3	Iron (Fe) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.001 %	Lead (Pb) .....	max. 0.001 %
Flourides (F) .....	max. 0.001 %	Potassium (K) .....	max. 0.005 %
Sodium dihydrogenphosphate (NaH <sub>2</sub> PO <sub>4</sub> ) .....	max. 0.8 %	Zinc (Zn) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	KMnO <sub>4</sub> red. Matter (as O) .....	max. 0.02 %
		Loss on drying (130 °C) .....	57 - 61 %

Code	Capacity
D3244-3-0500	500 g
D3244-3-1000	1 kg

**DI-SODIUM OXALATE**

Synonyms: Oxalic acid sodium salt, Soerensen's buffer substances

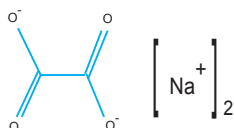
- C<sub>2</sub>Na<sub>2</sub>O<sub>4</sub>  
 - M = 134.01 g/mol  
 - CAS [62-76-0]  
 - EC number: 200-550-3

**Toxicological data:**

- LD 50 (oral, rat): 7500 mg/kg (oxalic acid)  
 - WGK: 1

**Transport/storage:**

- ADR: 6.1 T3 III UN 3282  
 - IMDG: 6.1 III UN 3282  
 - IATA/ICAO: 6.1 III UN 3282  
 - PAX: 619  
 - CAO: 619  
 - LGK: 10-13  
 - Disposal: 3

**Physical data:**

- Bulk density: ~ 600 kg/m<sup>3</sup>  
 - Solub. in water (20 °C): 37 g/l  
 - Melting point: 250 - 270 °C (decomposes)  
 - pH (30 g/l H<sub>2</sub>O, 20 °C) ~ 8

**Safety:**

- EC Index no.: 607-007-00-3  
 - R: 21/22  
 - S: 24/25-3746  
 - Poison class CH (Swiss): 2

**D3248-1 di-Sodium oxalate, reagent grade**

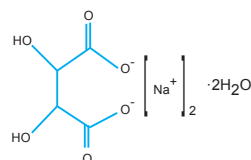
HS-No: 2917 11 00 90

Assay (permanganometric) .....	min. 99.8 %	Heavy metals (as Pb) .....	max. 0.001 %
pH (3%, H <sub>2</sub> O) .....	7.5 - 8.5	Lead (Pb) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.002 %	Iron (Fe) .....	max. 0.0005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Potassium (K) .....	max. 0.005 %
Total N .....	max. 0.0005 %	Loss on drying .....	max. 0.05 %
Copper (Cu) .....	max. 0.001 %		

Code	Capacity
D3248-1-0500	500 g

**DI-SODIUM TARTRATE DIHYDRATE**

Synonyms: Tartaric acid sodium salt dihydrate



- C<sub>4</sub>H<sub>4</sub>Na<sub>2</sub>O<sub>6</sub>·2H<sub>2</sub>O  
 - M = 230.08 g/mol  
 - CAS [6106-24-7]  
 - EC number: 212-773-3

**Physical data:**

- Spec. density: ~ 1.82 g/cm<sup>3</sup>  
 - Bulk density: ~ 460 kg/m<sup>3</sup>  
 - Solub. in water (20 °C): 290 g/l  
 - Melting point: 154 °C  
 - pH (50 g/l H<sub>2</sub>O, 25 °C) ~ 8

**Toxicological data:**

- LD 50 (oral, rat): 1290 mg/kg  
 - WGK: 1

**Transport/storage:**

- LGK: 10-13  
 - Disposal: 3

**D3255-1 di-Sodium tartrate dihydrate, reagent grade**

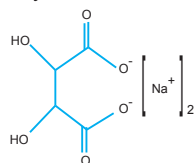
HS-NO: 2918 13 00 90

Assay (acidimetric) .....	min. 99.5 %	Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	7 - 9	Calcium (Ca) .....	max. 0.0005 %
Total N .....	max. 0.002 %	Heavy metals (as Pb) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.0005 %	Iron (Fe) .....	max. 0.0005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0005 %	Loss on drying (150 °C, 4h) .....	15.61 - 15.71 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %		

Code	Capacity
D3255-1-0500	500 g

**DI-SODIUM TARTRATE ANHYDROUS**

Synonyms: Tartaric acid disodium salt



- C<sub>4</sub>H<sub>4</sub>Na<sub>2</sub>O<sub>6</sub>  
 - M = 194.06 g/mol  
 - CAS [868-18-8]  
 - EC number: 212-773-3

**Physical data:**

- Solub. in water (20 °C): soluble  
 - pH (50 g/l H<sub>2</sub>O, 20 °C) 7.0 - 9.0

**D3259-1 di-Sodium tartrate anhydrous, reagent grade**

HS-NO: 2918 13 00 90

Assay (acidimetric) .....	min. 99 %	Arsenic (As) .....	max. 0.00005 %
Insoluble in water .....	max. 0.005 %	Calcium (Ca) .....	max. 0.005 %
pH (5%, H <sub>2</sub> O) .....	7 - 9	Copper (Cu) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.005 %	Iron (Fe) .....	max. 0.001 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.005 %	Lead (Pb) .....	max. 0.0005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.0005 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.003 %		

Code	Capacity
D3259-1-0500	500 g
D3259-1-1000	1 kg

## DI-SODIUM TETRABORATE ANHYDROUS

Synonyms: Sodium biborate, Sodium borate, Borax

- $\text{Na}_2\text{B}_4\text{O}_7$
- M = 201.22 g/mol
- CAS [1330-43-4]
- EC number: 215-540-4
- Melting point: 742 °C
- Boiling point: 1575 °C (decomposes)
- Vapour pressure: (1200 °C) 7.3 hPa
- pH (25 g/l  $\text{H}_2\text{O}$ , 20 °C) 9.2

**Safety:**  
- S: 24/25  
- Poison class CH (Swiss): 4

**Physical data:**  
- Spec. density: 2.37 g/cm<sup>3</sup>  
- Bulk density: ~ 700 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 25.6 g/l

**Toxicological data:**  
- LD 50 (oral, rat): 2660 mg/kg (decahydrate substance)  
- WGK: 1

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 28

### D3263-3 di-Sodium tetraborate anhydrous, extra pure

HS-NO: 2840 11 00 00

Assay (acidimetric) .....	min. 98 %	Heavy metals (as Pb) .....	max. 0.005 %
Insoluble in water .....	max. 0.05 %	Iron (Fe) .....	max. 0.005 %
Chlorides (Cl) .....	max. 0.05 %	Lead (Pb) .....	max. 0.02 %
Phosphates ( $\text{PO}_4$ ) .....	max. 0.005 %	Magnesium (Mg) .....	max. 0.005 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.05 %	Nickel (Ni) .....	max. 0.05 %
Calcium (Ca) .....	max. 0.02 %	Potassium (K) .....	max. 0.05 %
Copper (Cu) .....	max. 0.005 %		

Code	Capacity
D3263-3-1000	1 kg

## DI-SODIUM TETRABORATE DECAHYDRATE



Synonyms: Borax, Sodium biborate decahydrae, Sodium borate decahydrate

- $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$
- M = 381.37 g/mol
- CAS [1303-96-4]
- EC number: 215-540-4
- Melting point: 75 °C
- Boiling point: 1575 °C (anhydrous)
- Vapour pressure: (20 °C) 0.213 hPa
- pH (47 g/l  $\text{H}_2\text{O}$ , 20 °C) 9.2

**Safety:**  
- S: 24/25  
- Poison class CH (Swiss): 5

**Physical data:**  
- Spec. density: 1.72 g/cm<sup>3</sup>  
- Bulk density: ~ 750 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 51.4 g/l

**Toxicological data:**  
- LD 50 (oral, rat): 2660 mg/kg  
- WGK: 1

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 28

### D3265-1 di-Sodium tetraborate decahydrate, reagent grade

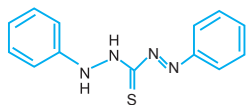
HS-NO: 2840 19 90 00

Assay (acidimetric) .....	min. 99.5 %	Arsenic (As) .....	max. 0.0001 %
Insoluble in water .....	max. 0.005 %	Calcium (Ca) .....	max. 0.005 %
pH (4%, $\text{H}_2\text{O}$ ) .....	9.15 - 9.20	Copper (Cu) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.0005 %	Iron (Fe) .....	max. 0.0005 %
Phosphates ( $\text{PO}_4$ ) .....	max. 0.001 %	Lead (Pb) .....	max. 0.0005 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.005 %		

Code	Capacity
D3265-1-0500	500 g
D3265-1-1000	1 kg

## DITHIZONE

Synonyms: Diphenylthiocarbazone



- $\text{C}_{13}\text{H}_{12}\text{N}_4\text{S}$
- M = 256.33 g/mol
- CAS [60-10-6]
- EC number: 200-454-1

**Physical data:**  
- Solub. in water in soluble  
- Melting point: ~ 168 °C (decomposition)  
- Bulk density: ~ 250 kg/m<sup>3</sup>

**Toxicological data:**  
- WGK: 3\*

**Safety:**  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 3

### D3700-1 Dithizone, reagent grade

HS-No: 2930 90 70 00

Assay (spectrophotometry) .....	min. 75.0 %	Residue after ignition (as sulfate) ....	max. 0.1 %
Sensitivity test .....	passes test	Solubility test in chloroform .....	passes test
Loss on drying .....	max. 5.0 %	Heavy metals (as Pb) .....	max. 0.0005 %

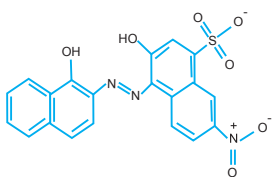
Code	Capacity
D3700-1-0005	5 g

# Chemical list : E

## ERIOCHROME BLACK T



Synonyms: Chrome black T, 2-Hydroxy-1-(1-hydroxy-2-naphthylazo) 6-nitronaphthalene-4-sulfonic acid sodium salt



- $C_{20}H_{12}N_3NaO_5S$
- M = 461.38 g/mol
- CAS [1787-61-7]
- EC number: 217-250-3

### Physical data:

- Form: Solid
- Bulk density: ~ 400 - 600 kg/cm<sup>3</sup>

- Solub. in water (20 °C): ~ 50 g/l
- pH (10 g/l H<sub>2</sub>O, 20 °C) 3.7

### Toxicological data:

- LD 50 (oral, rat): 17590 mg/kg
- WGK: 3\*

### Safety:

- R: 36-51/53
- S: 26-61

### Transport/storage:

- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- PAX: 911
- CAO: 911
- LGK: 10-13
- Disposal: 3

E

### E5000-1 Eriochrome black T, C.I. 14645

HS-No: 3204 19 00 90

Absorption maximum  $\lambda$  (pH +10.0) ..... 612 - 616 nm  
Absorptivity (A1%/1cm;  $\lambda$  max;  
pH10.0 on dried material) ..... 320 - 420

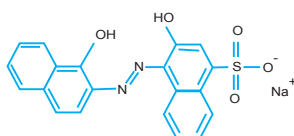
Suitability as metal indicator ..... passet test  
Loss on drying ..... max. 7 %

Code	Capacity
E5000-1-0025	25 g

## ERIOCHROME BLUE-BLACK B



Synonyms: 2-Hydroxy-1-(1-hydroxy-2-naphthylazo)-naphthalene-4-sulfonic acid sodium salt



- $C_{20}H_{13}N_2NaO_5S$
- M = 166.85 g/mol
- CAS [3564-14-5]
- EC number: 222-639-6

### Physical data:

- Form: Solid

- Bulk density: 540 kg/cm<sup>3</sup>
- Solub. in water (20 °C): ~ 20 g/l
- pH (20 g/l H<sub>2</sub>O, 20 °C) 9.5

### Toxicological data:

- LD 50 (oral, rat): > 5000 mg/kg
- WGK: 1

### Safety:

- R: 36
- Poison class CH (Swiss): 4

### Transport/storage:

- LGK: 10-13
- Disposal: 3

### E5001-1 Eriochrome blue-black B, C.I. 14640

HS-No: 3204 19 00 90

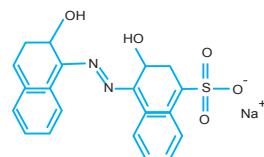
Absorption maximum  $\lambda$  (pH 10.0) ..... 634 - 641 nm  
Absorptivity (A1%/1cm;  $\lambda$  max;  
0.0025%; pH10.0 on dried material) . 220 - 230

Suitability as indicator for metal titration .. passet test  
Loss on drying (110 °C) ..... max. 5 %

Code	Capacity
E5001-1-0025	25 g

## ERIOCHROME BLUE-BLACK R

Synonyms: 2-Hydroxy-1-(2-hydroxy-1-naphthylazo) -naphthalene-4-sulfonic acid sodium salt



- $C_{20}H_{13}N_2NaO_5S$
- M = 416.39 g/mol
- CAS [2538-85-4]
- EC number: 219-810-2

### Physical data:

- Form: Solid
- Bulk density: 530 kg/cm<sup>3</sup>
- Solub. in water (20 °C): ~ 20 g/l
- pH (10 g/l H<sub>2</sub>O, 20 °C) 9.4

### Toxicological data:

- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 3

### E5002-1 Eriochrome blue-black R, C.I. 15705

HS-No: 2927 00 00 90

Absorption maximum  $\lambda$  (pH 12.2) ..... 632 - 636 nm  
Absorptivity (A1%/1cm;  $\lambda$  max;  
0.0015%; pH12.2 on dried material) ... 200 - 300

Suitability as indicator for metal titration ..... passet test  
Loss on drying (110 °C) ..... max. 10 %

Code	Capacity
E5002-1-0025	25 g

## ETHANOL ABSOLUTE



Synonyms: Ethyl alcohol, Methylcarbinol, Spirit, Spirit of wine



- $C_2H_6O$
- M = 46.07 g/mol
- CAS [64-17-5]
- EC number: 200-578-6

### Physical data:

- Density: 0.79 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -114.5 °C
- Boiling point: 78.3 °C
- Flash point: 12 °C
- Ignition temp.: 425 °C
- Vapour pressure: (20 °C) 59 mPas
- Viscosity: (20 °C) 1.2 mPas

- Dipolar moment: (20 °C) 1.7 Debye
- Dielectric const.: (25 °C) 24.3
- Evap. heat: (78 °C) 855 kJ/kg
- Saturation conc.: (20 °C) 105 g/m<sup>3</sup>
- Expl. limit (upper): 15 Vol%
- Expl. limit (lower): 3.5 Vol%
- pH (10 g/l H<sub>2</sub>O, 20 °C) 7.0

### Toxicological data:

- LD 50 (oral, rat): 6200 mg/kg
- MAK: 500 ml/m<sup>3</sup>, 960 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 603-002-00-5
- R: 11

- S: 7-16
- VbF class: B
- Poison class CH (Swiss): F

### Transport/storage:

- ADR: 3 F1 II UN 1170
- IMDG: 3 II UN 1170
- IATA/ICAO: 3 II UN 1170
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

**E7024-1 Ethyl Alcohol 95 % (Absolute Denatured), reagent grade**

HS-No: 2207 10 00 90

Appearance .....	Clear, Colourless liquid	Acetaldehyde .....	max. 0.001 %
Identification .....	IR Spectrometry	Methanol .....	max. 0.02 %
Assay (by Density) .....	94.8 ~ 95.8 vol%	Fusel oil .....	max. 0.004 %
Density at 20 °C .....	0.808 % 0.812 g/ml	Substances reducing	
Residue after evaporation .....	max. 0.001%	permanganate .....	passes test
Acidity (as CH <sub>3</sub> COOH) .....	max. 0.002%	Substances darkened	
Alkalinity (as NH <sub>3</sub> ) .....	max. 1 ppm	by sulfuric acid .....	passes test
Heavy metals (as Pb) .....	max. 1 ppm	Contains Bitrex 5~10 ppm/L	

Code	Capacity
E7024-1-2500	2.5 L
E7024-1-9020	20 L

**E7025-1 Ethanol 99.9 % (Absolute denatured), reagent grade**

HS-No: 2207 10 00 90

Purity (GC) .....	min. 99.9 %	Indium (In) .....	max. 0.02 ppm
Identity (IR) .....	conforms	Lithium (Li) .....	max. 0.02 ppm
Free Alkali (as NH <sub>3</sub> ) .....	max. 3 ppm	Potassium (K) .....	max. 0.2 ppm
Free Acid (as CH <sub>3</sub> COOH) .....	max. 10 ppm	Magnesium (Mg) .....	max. 0.1 ppm
Spec. resistance .....	max. 1 MWcm	Manganese (Mn) .....	max. 0.02 ppm
Heavy metals (as Pb) .....	max. 0.2 ppm	Molybdenum (Mo) .....	max. 0.05 ppm
Silver (Ag) .....	max. 0.02 ppm	Sodium (Na) .....	max. 0.5 ppm
A1 Aluminum (Al) .....	max. 0.2 ppm	Nickel (Ni) .....	max. 0.02 ppm
Arsenic (As) .....	max. 0.01 ppm	Lead (Pb) .....	max. 0.05 ppm
Gold (Au) .....	max. 0.1 ppm	Platinum (Pt) .....	max. 0.2 ppm
Barium (Ba) .....	max. 0.1 ppm	Antimony (Sb) .....	max. 0.01 ppm
Beryllium (Be) .....	max. 0.02 ppm	Tin (Sn) .....	max. 0.1 ppm
Bismuth (Bi) .....	max. 0.1 ppm	Strontium (Sr) .....	max. 0.02 ppm
Calcium (Ca) .....	max. 0.6 ppm	Titanium (Ti) .....	max. 0.1 ppm
Cadmium (Cd) .....	max. 0.05 ppm	Thallium (Tl) .....	max. 0.05 ppm
Cobalt (Co) .....	max. 0.05 ppm	Vanadium (V) .....	max. 0.05 ppm
Chromium (Cr) .....	max. 0.05 ppm	Zinc (Zn) .....	max. 0.1 ppm
Copper (Cu) .....	max. 0.02 ppm	Zirconium (Zr) .....	max. 0.2 ppm
Iron (Fe) .....	max. 0.1 ppm	Evaporation residue .....	max. 10 ppm
Gallium (Ga) .....	max. 0.02 ppm	Water .....	max. 0.2 %

Code	Capacity
E7025-1-1000	1.0 L
E7025-1-2500	2.5 L
E7025-1-4000	4.0 L

**E7026-1 Ethyl alcohol, absolute, 99.9% reagent grade**

HS-No: 2207 10 90 90

Purity (GC) .....	min. 99.9 %	Indium (In) .....	max. 0.02 ppm
Identity (IR) .....	conforms	Lithium (Li) .....	max. 0.02 ppm
Free Alkali (as NH <sub>3</sub> ) .....	max. 3 ppm	Potassium (K) .....	max. 0.2 ppm
Free Acid (as CH <sub>3</sub> COOH) .....	max. 10 ppm	Magnesium (Mg) .....	max. 0.1 ppm
Spec. resistance .....	max. 1 MWcm	Manganese (Mn) .....	max. 0.02 ppm
Heavy metals (as Pb) .....	max. 0.2 ppm	Molybdenum (Mo) .....	max. 0.05 ppm
Silver (Ag) .....	max. 0.02 ppm	Sodium (Na) .....	max. 0.5 ppm
A1 Aluminum (Al) .....	max. 0.2 ppm	Nickel (Ni) .....	max. 0.02 ppm
Arsenic (As) .....	max. 0.01 ppm	Lead (Pb) .....	max. 0.05 ppm
Gold (Au) .....	max. 0.1 ppm	Platinum (Pt) .....	max. 0.2 ppm
Barium (Ba) .....	max. 0.1 ppm	Antimony (Sb) .....	max. 0.01 ppm
Beryllium (Be) .....	max. 0.02 ppm	Tin (Sn) .....	max. 0.1 ppm
Bismuth (Bi) .....	max. 0.1 ppm	Strontium (Sr) .....	max. 0.02 ppm
Calcium (Ca) .....	max. 0.6 ppm	Titanium (Ti) .....	max. 0.1 ppm
Cadmium (Cd) .....	max. 0.05 ppm	Thallium (Tl) .....	max. 0.05 ppm
Cobalt (Co) .....	max. 0.05 ppm	Vanadium (V) .....	max. 0.05 ppm
Chromium (Cr) .....	max. 0.05 ppm	Zinc (Zn) .....	max. 0.1 ppm
Copper (Cu) .....	max. 0.02 ppm	Zirconium (Zr) .....	max. 0.2 ppm
Iron (Fe) .....	max. 0.1 ppm	Evaporation residue .....	max. 10 ppm
Gallium (Ga) .....	max. 0.02 ppm	Water .....	max. 0.2 %

Code	Capacity
E7026-1-1000	1.0 L
E7026-1-2500	2.5 L
E7026-1-4000	4.0 L

**E7026-4 Ethyl alcohol, absolute, 99.9% HPLC grade**

HS-No: 2207 10 90 90

See specification in Solvent Specification - 40

Code	Capacity
E7026-4-1000	1.0 L
E7026-4-4001	4.0 L

**ETHANOL, APPROX. 96%**

Synonyms: Ethyl alcohol, Methylcarbinol, Spirit, Spirit of wine



- C<sub>2</sub>H<sub>6</sub>O
- M = 46.07 g/mol
- CAS [64-17-5]
- EC number: 200-578-6

**Physical data:**

- Density: 0.81 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -117 °C
- Boiling point: 78 °C
- Flash point: 9 °C
- Ignition temp.: 425 °C
- Vapour pressure: (20 °C) ~ 59 hPa

- Viscosity: (20 °C) 1.2 mPas
- Dipolar moment: (20 °C) 1.7 Debye
- Dielectric const.: (25 °C) 24.3
- Saturation conc.: (20 °C) 105 g/m<sup>3</sup>
- Expl. limit (upper): 15 Vol%
- Expl. limit (lower): 3.5 Vol%
- pH (10 g/l H<sub>2</sub>O, 20 °C) 7.0

**Toxicological data:**

- LD 50 (oral, rat): 6200 mg/kg (anhydrous substance)
- MAK: 500 ml/m<sup>3</sup>, 960 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 603-002-00-5
- R: 11
- S: 7-16
- VbF class: B
- Poison class CH (Swiss): F

**Transport/storage:**

- ADR: 3 F1 II UN 1170
- IMDG: 3 II UN 1170
- IATA/ICAO: 3 II UN 1170
- PAX: 305
- CAO: 307
- LGK: 3 A



**E7045-1 Ethanol approx. 96%, reagent grade**

Assay (GC) .....	95 - 96 %	Tin (Sn) .....	max. 0.00002 %
Colour .....	max. 10 Hazen	Zinc (Zn) .....	max. 0.00002 %
Acidity .....	max. 0.0005 meq/g	Acetone (G.C.) .....	max. 0.001 %
Alkalinity .....	max. 0.0002 meq/g	Iso-amyl alcohol (G.C.) .....	max. 0.05 %
Aluminium (Al) .....	max. 0.00005 %	Methanol (G.C.) .....	max. 0.05 %
Barium (Ba) .....	max. 0.00002 %	2-Propanol (G.C.) .....	max. 0.003 %
Boron (B) .....	max. 0.000005 %	Aldehydes (as CH <sub>3</sub> CHO) .....	max. 0.002 %
Cadmium (Cd) .....	max. 0.00001 %	Carbonyl compounds (as CO) .....	max. 0.003 %
Calcium (Ca) .....	max. 0.0001 %	KMnO <sub>4</sub> red. Matter (as O) .....	max. 0.0003 %
Chromium (Cr) .....	max. 0.000005 %	Substances darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Cobalt (Co) .....	max. 0.000005 %	Furfural .....	passes test
Copper (Cu) .....	max. 0.000005 %	Fusel oil .....	passes test
Iron (Fe) .....	max. 0.00002 %	Non-volatile matter .....	max. 0.001 %
Lead (Pb) .....	max. 0.00002 %	UV spectroscopy .....	passes test
Magnesium (Mg) .....	max. 0.00002 %	Water (K.F.) .....	approx. 5 %
Manganese (Mn) .....	max. 0.000005 %	Residual solvents (Ph Eur/ICH) .....	excluded by production process
Nickel (Ni) .....	max. 0.000005 %		

Code	Capacity
E7045-1-1000	1.0 L
E7045-1-2500	2.5 L
E7045-1-9025	25 L

**ETHANOLAMINE**

2-Aminoethanol, 2-Hydroxyethylamine, Monoethanolamine



- C<sub>2</sub>H<sub>7</sub>NO  
 - M = 61.08 g/mol  
 - CAS [141-43-5]  
 - EC number: 205-483-3

**Physical data:**

- Density: 1.02 g/cm<sup>3</sup>  
 - Solub. in water (20 °C): miscible  
 - Melting point: 10.5 °C  
 - Boiling point: 171 °C  
 - Flash point: 93 °C

- Ignition temp.: 410 °C  
 - Vapour pressure: (20 °C) 0.5 hPa  
 - Refraction index: (n<sub>20 °C/D</sub>) 1.4539  
 - Viscosity: (20 °C) 23 mPas  
 - Evap. heat: (170 °C) 963 kJ/kg  
 - Expl. limit (upper): 13.1 Vol%  
 - Expl. limit (lower): 2.5 Vol%  
 - pH (100 g/l H<sub>2</sub>O, 20 °C) 12.1

**Toxicological data:**

- LD 50 (oral, rat): 1720 mg/kg  
 - MAK: 2 ml/m<sup>3</sup>, 5.1 mg/m<sup>3</sup>  
 - WGK: 1

**Safety:**

- EC Index no.: 603-030-00-8  
 - R: 20-36/37/38  
 - Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 8 C7 III UN 2491  
 - IMDG: 8 III UN 2491  
 - IATA/ICAO: 8 III UN 2491  
 - PAX: 818  
 - CAO: 820  
 - LGK: 8 A  
 - Disposal: 1

**E7067-1 Ethanolamine, reagent grade**

Assay (GC) .....	min. 99.5 %	Chromium (Cr) .....	max. 10.0 %
Identity (IR-spectrum) .....	passes test	Copper (Cu) .....	max. 10.0 %
Aluminium (Al) .....	max. 0.00005 %	Iron (Fe) .....	max. 10.0 %
Boron (B) .....	max. 0.000002 %	Magnesium (Mg) .....	max. 10.0 %
Barium (Ba) .....	max. 0.00001 %	Manganese (Mn) .....	max. 10.0 %
Calcium (Ca) .....	max. 0.00005 %	Nickel (Ni) .....	max. 10.0 %
Cadmium (Cd) .....	max. 0.00005 %	Lead (Pb) .....	max. 10.0 %
Cobalt (Co) .....	max. 10.0 %	Tin (Sn) .....	max. 10.0 %

HS-No: 2922 11 00 10

Code	Capacity
E7067-1-1000	1.0 L
E7067-1-2500	2.5 L

**E7067-2 Ethanolamine, synthesis grade**

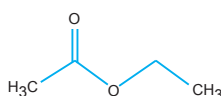
Assay (GC) .....	min. 98 %	Sulfated Ash .....	max. 0.01 %
Identity (IR-spectrum) .....	passes test	Water (K.F) .....	max. 0.3 %
Density (20 °/4 °) .....	1.014 - 1.016		

HS-No: 2922 11 00 10

Code	Capacity
E7067-2-1000	1.0 L
E7067-2-2500	2.5 L

**ETHYL ACETATE**

Synonyms: Acetic acid ethyl ester, Acetic ether



- C<sub>4</sub>H<sub>8</sub>O<sub>2</sub>  
 - M = 88.10 g/mol  
 - CAS [141-78-6]  
 - EC number: 205-500-4

**Physical data:**

- Density: 0.90 g/cm<sup>3</sup>  
 - Solub. in water (20 °C): 85.3 g/l  
 - Melting point: -83 °C  
 - Boiling point: 77 °C  
 - Flash point: -4 °C  
 - Ignition temp.: 460 °C  
 - Vapour pressure: (20 °C) 97 hPa  
 - Refraction index: (n<sub>20 °C/D</sub>) 1.3723

- Viscosity: (20 °C) 0.44 mPas  
 - Dipolar moment: (20 °C) 1.78 Debye  
 - Dielectric const.: (25 °C) 6.0  
 - Evap. heat: (77 °C) 427 kJ/kg  
 - Saturation conc.: (20 °C) 336 g/m<sup>3</sup>  
 - Expl. limit (upper): 11.5 Vol%  
 - Expl. limit (lower): 2.1 Vol%

**Toxicological data:**

- LD 50 (oral, rat): 5620 mg/kg  
 - MAK: 400 ml/m<sup>3</sup>, 1500 mg/m<sup>3</sup>  
 - WGK: 1

**Safety:**

- EC Index no.: 607-022-00-5  
 - R: 11-36-66-67  
 - S: 16-26-33  
 - VbF calss: A1  
 - Poison class CH (Swiss): 5

**Transport/storage:**

- ADR: 3 F1 II UN 1173  
 - IMDG: 3 II UN 1173  
 - IATA/ICAO: 3 II UN 1173  
 - PAX: 305  
 - CAO: 307  
 - LGK: 3 A  
 - Disposal: 1

**E7100-1 Ethyl acetate, reagent grade**

Assay .....	min. 99.5 %	Lead (Pb) .....	max. 0.00001 %
Colour .....	max. 10 Hazen	Magnesium (Mg) .....	max. 0.00001 %
Free Acid (as CH <sub>3</sub> COOH) .....	max. 0.005 %	Manganese (Mn) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.00005 %	Nickel (Ni) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.00001 %	Tin (Sn) .....	max. 0.00001 %
Boron (B) .....	max. 0.000002 %	Zinc (Zn) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Ethanol (G.C.) .....	max. 0.1 %
Calcium (Ca) .....	max. 0.00005 %	Methanol (G.C.) .....	max. 0.1 %
Chromium (Cr) .....	max. 0.000002 %	Methyl Acetate (G.C.) .....	max. 0.1 %
Cobalt (Co) .....	max. 0.000002 %	Substances darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Copper (Cu) .....	max. 0.000002 %	Non-Volatile matter .....	max. 0.001 %
Iron (Fe) .....	max. 0.00001 %	Water .....	max. 0.05 %

HS-No: 2915 31 00 00

Code	Capacity
E7100-1-1000	1.0 L
E7100-1-2500	2.5 L
E7100-1-2501	2.5 L
E7100-1-4000	4.0 L

**E7100-4 Ethyl acetate, HPLC grade**

See specification in Solvent Specification - 40

HS-No: 2915 31 00 00

Code	Capacity
E7100-4-1001	1.0 L
E7100-4-4001	4.0 L

**E7100-11 Ethyl acetate, Pesticide grade**

See specification in Solvent Specification - 23

HS-No: 2915 31 00 00

Code	Capacity
E7100-11-1001	1.0 L
E7100-11-4001	4.0 L

**E7100-12 Ethyl acetate, Ultimate grade**

See specification in Solvent Specification - 13

HS-No: 2915 31 00 00

Code	Capacity
E7100-12-1001	1.0 L
E7100-12-4001	4.0 L

**E7100-15 Ethyl acetate, Ultra Dry grade**

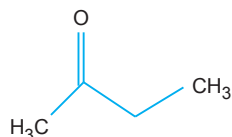
See specification in Solvent Specification - 63

HS-No: 2915 31 00 00

Code	Capacity
E7100-15-1001	1.0 L
E7100-15-4001	4.0 L

**ETHYL METHYL KETONE**

Synonyms: 2-Butanone, Methyl ethyl ketone, MEK



- C<sub>4</sub>H<sub>8</sub>O
- M = 72.11 g/mol
- CAS [78-93-3]
- EC number: 201-159-0

**Physical data:**

- Density: 0.80 g/cm<sup>3</sup>
- Solub. in water (20 °C): 292 g/l
- Melting point: -86 °C
- Boiling point: 79.6 °C
- Flash point: -1 °C
- Ignition temp.: 505 °C
- Vapour pressure: (20 °C) 105 hPa
- Viscosity: (15 °C) 0.42 mPas
- Dipolar moment: (20 °C) 2.7 Debye

- Dielectric const.: (20 °C) 18.5
- Saturation conc.: (20 °C) 310 g/m<sup>3</sup>
- Expl. limit (upper): 11.5 Vol%
- Expl. limit (lower): 1.8 Vol%
- pH (300 g/l H<sub>2</sub>O, 20 °C) ~ 5.5

**Toxicological data:**

- LD 50 (oral, rat): 2737 mg/kg
- MAK: 200 ml/m<sup>3</sup>, 600 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 606-002-00-3
- R: 11-36-66-67

- S: 9-16
- VbF class: AI
- Poison class CH (Swiss): 5

**Transport/storage:**

- ADR: 3 F1 II UN 1193
- IMDG: 3 II UN 1193
- IATA/ICAO: 3 II UN 1193
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

**E7125-1 Ethyl methyl ketone, reagent grade**

HS-NO: 2914 12 00 00

Assay .....	min. 99.5 %	Cobalt (Co) .....	max. 0.000002 %
Color .....	max. 10 Hazen	Copper (Cu) .....	max. 0.000002 %
Acidity .....	max. 0.0005 meq/g	Chromium (Cr) .....	max. 0.000002 %
Alkalinity .....	max. 0.0002 meq/g	Iron (Fe) .....	max. 0.00001 %
Evaporation residue .....	max. 0.001 %	Tin (Sn) .....	max. 0.00001 %
Water .....	max. 0.5 %	Magnesium (Mg) .....	max. 0.000005 %
Aluminium (Al) .....	max. 0.00002 %	Manganese (Mn) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.00001 %	Nickel (Ni) .....	max. 0.000002 %
Boron (B) .....	max. 0.000002 %	Lead (Pb) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Zinc (Zn) .....	max. 0.00001 %
Calcium (Ca) .....	max. 0.00005 %		

Code	Capacity
E7125-1-2500	2.5 L
E7125-1-2501	2.5 L
E7125-1-4000	4.0 L
E7125-1-9025	25 L

**E7125-7 Ethyl methyl ketone, EC-10**

HS-NO: 2914 12 00 00

Purity (GC) .....	min. 99.5 %	Gallium (Ga) .....	max. 20 ppb
Free Acid (as CH <sub>3</sub> COOH) .....	max. 20 ppm	Indium (In) .....	max. 20 ppb
Spec. resistance .....	max. 10 MWcm	Potassium (K) .....	max. 100 ppb
Evaporation residue .....	max. 5 ppm	Lithium (Li) .....	max. 20 ppb
Water .....	max. 0.05 %	Magnesium (Mg) .....	max. 100 ppb
Heavy metals (as Pb) .....	max. 0.2 ppm	Manganese (Mn) .....	max. 20 ppb
Silver (Ag) .....	max. 20 ppb	Molybdenum (Mo) .....	max. 50 ppb
Aluminium (Al) .....	max. 200 ppb	Sodium (Na) .....	max. 500 ppb
Arsenic (As) .....	max. 10 ppb	Nickel (Ni) .....	max. 20 ppb
Gold (Au) .....	max. 100 ppb	Lead (Pb) .....	max. 50 ppb
Boron (B) .....	max. 10 ppb	Platinum (Pt) .....	max. 200 ppb
Barium (Ba) .....	max. 100 ppb	Antimony (Sb) .....	max. 10 ppb
Beryllium (Be) .....	max. 20 ppb	Tin (Sn) .....	max. 100 ppb
Bismuth (Bi) .....	max. 100 ppb	Strontium (Sr) .....	max. 20 ppb
Calcium (Ca) .....	max. 500 ppb	Titanium (Ti) .....	max. 100 ppb
Cadmium (Cd) .....	max. 50 ppb	Thallium (Tl) .....	max. 50 ppb
Cobalt (Co) .....	max. 20 ppb	Vanadium (V) .....	max. 50 ppb
Chromium (Cr) .....	max. 20 ppb	Zinc (Zn) .....	max. 100 ppb
Copper (Cu) .....	max. 20 ppb	Zirconium (Zr) .....	max. 200 ppb
Iron (Fe) .....	max. 100 ppb		

Code	Capacity
E7125-7-2500	2.5 L

**E7125-7 Ethyl methyl ketone, HPLC Grade**

See specification in Solvent Specification - 44

HS-No: 2914 12 00 00

Code	Capacity
E7125-4-1001	1.0 L
E7125-4-4001	4.0 L

## ETHYLENE GLYCOL MONOBUTYL ETHER



Synonyms: 2-Butoxyethanol, Butyl glycol



- C<sub>6</sub>H<sub>14</sub>O<sub>2</sub>  
- M = 118.18 g/mol  
- CAS [111-76-2]  
- EC number: 203-905-0

**Physical data:**  
- Density: 0.9 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- Melting point: -70 °C  
- Boiling point: 170 - 172 °C  
- Flash point: 63 - 64 °C  
- Ignition temp.: 230 °C

- Vapour pressure: (20 °C) 0.8 hPa  
- Reflection index: (n 20 °C/D) 1.4193  
- Viscosity: (20 °C) 5.31 mPas  
- Dielectric const.: (20 °C) 9.4  
- Saturation conc.: (20 °C) 5 g/m<sup>3</sup>  
- Expl. limit (upper): 10.3 Vol%  
- Expl. limit (lower): 1.9 Vol%  
- pH (20 °C) 7

**Toxicological data:**  
- LD 50 (oral, rat): 1480 mg/kg  
- MAK: 20 ml/m<sup>3</sup>, 98 mg/m<sup>3</sup>  
- WGK: 1

**Safety:**  
- EC Index no.: 603-014-00-0  
- R: 20/21/22-36/38  
- S: 24/25-37-46  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- PAX: 611  
- CAO: 618  
- LGK: 10-13  
- Disposal: 1

### E7135-2 Ethylene glycol monobutyl ether, synthesis grade

HS-No: 2909 43 00 00

Assay .....	min. 99.0 %	Aluminium (Al) .....	max. 0.00005 %
Colour .....	max. 10 APHA	Calcium (Ca) .....	max. 0.00005 %
Sulfated ash .....	max. 0.01 %	Iron (Fe) .....	max. 0.00005 %
Acidity .....	max. 0.01 %	Magnesium (Mg) .....	max. 0.00005 %
Water (KF) .....	max. 0.1 %	Nickel (Ni) .....	max. 0.00005 %
Non-volatile matter .....	max. 0.05 %		

Code	Capacity
E7135-2-2500	2.5 L
E7135-2-9025	25 L

## ETHYLENE GLYCOL



Synonyms: 1,2-Ethandiol, Glycol



- C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>  
- M = 62.07 g/mol  
- CAS [107-21-1]  
- EC number: 203-473-3

**Physical data:**  
- Density: 1.11 g/cm<sup>3</sup>  
- Solub. in water (20 °C):  
1000 g/l (miscible)  
- Melting point: -13 °C  
- Boiling point: (39 hPa) 117 °C  
- Flash point: 111 °C

- Ignition temp.: 410 °C  
- Vapour pressure: (20 °C) 0.053 hPa  
- Viscosity: (20 °C) 21 mPas  
- Dielectric const.: (25 °C) 37.7  
- Saturation conc.: (20 °C) 0.15 g/m<sup>3</sup>  
- Expl. limit (upper): 12.8 Vol%  
- Expl. limit (lower): 1.8 Vol%

**Toxicological data:**  
- LD 50 (oral, rat): 4700 mg/kg  
- MAK: 10 ml/m<sup>3</sup>, 26 mg/m<sup>3</sup>  
- WGK: 1

**Safety:**  
- EC Index no.: 603-027-00-1  
- R: 22  
- S: 46  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 1

### E7152-1 Ethylene glycol, reagent grade

HS-No: 2905 31 00 00

Assay .....	min. 99.5 %	KMnO <sub>4</sub> red. matter (as O) .....	max. 0.0003 %
Acidity .....	max. 0.0002 meq/g	Substances darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Formaldehyde .....	max. 0.005 %	Sulfated ash .....	max. 0.005 %
Chlorides (Cl) .....	max. 0.00002 %	Water .....	max. 0.1 %
Iron (Fe) .....	max. 0.00002 %		

Code	Capacity
E7152-1-1000	1.0 L
E7152-1-2500	2.5 L

## ETHYLENE GLYCOL MONOETHYL ETHER



Synonyms: 2-Ethoxyethanol, Ethyl glycol, Ethyl cellosolve



- C<sub>4</sub>H<sub>10</sub>O<sub>2</sub>  
- M = 90.12 g/mol  
- CAS [110-80-5]  
- EC number: 203-804-1

**Physical data:**  
- Form: Liquid  
- Density: 0.93 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- Melting point: -100 °C  
- Boiling point: 135 °C  
- Flash point: 44 °C  
- Ignition temp.: 235 °C

- Vapour pressure: (20 °C) ~ 5 hPa  
- Refraction index: (n 20 °C/D) 1.4075  
- Viscosity: (20 °C) 2.07 mPas  
- Dielectric const.: (20 °C) 11.9  
- Saturation conc.: (20 °C) 18 g/m<sup>3</sup>  
- Expl. limit (upper): 15.7 Vol%  
- Expl. limit (lower): 1.8 Vol%  
- pH (20 °C) 7

**Toxicological data:**  
- LD 50 (oral, rat): 2125 mg/kg  
- MAK: 5 ml/m<sup>3</sup>, 19 mg/m<sup>3</sup>  
- WGK: 1

**Safety:**  
- EC Index no.: 603-012-00-X  
- R: 60-61-10-E20/21/22  
- S: 53-36/37-45  
- Poison class CH (Swiss): 2

**Transport/storage:**  
- ADR: 3 F1 III UN 1171  
- IMDG: 3 III UN 1171  
- IATA/ICAO: 3 III UN 1171  
- PAX: 309  
- CAO: 310  
- LGK: 3 A  
- Disposal: 1

### E7154-1 Ethylene glycol monoethyl ether, reagent grade

HS-No: 2909 43 00 00

Assay .....	min. 99.5 %	Lead (Pb) .....	max. 0.00001 %
Identity (IR-spectrum) .....	passes test	Magnesium (Mg) .....	max. 0.00001 %
Density (20°/4) .....	0.929 - 0.930	Manganese (Mn) .....	max. 0.000002 %
Colour .....	max. 10 Hazen	Nickel (Ni) .....	max. 0.000002 %
Acidity .....	max. 0.001 meq/g	Zinc (Zn) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Acetaldehyde (CH <sub>3</sub> CHO) .....	max. 0.001 %
Calcium (Ca) .....	max. 0.00005 %	Formaldehyde (HCHO) .....	max. 0.001 %
Chromium (Cr) .....	max. 0.000002 %	Peroxides (as H <sub>2</sub> O <sub>2</sub> ) .....	max. 0.0003 %
Cobalt (Co) .....	max. 0.000002 %	Non-volatile matter .....	max. 0.001 %
Copper (Cu) .....	max. 0.000002 %	Water .....	max. 0.1 %
Iron (Fe) .....	max. 0.00001 %		

Code	Capacity
E7154-1-2501	2.5 L

## ETHYLENEDIAMINE DIHYDROCHLORIDE

Synonyms: 1,2-Diaminoethane dihydrochloride, Ethylenediammonium dichloride



- C<sub>2</sub>H<sub>8</sub>N<sub>2</sub>·2HCl  
- M = 133.02 g/mol  
- CAS [333-18-6]  
- EC number: 206-369-6

- Spec. density: 1.11 g/cm<sup>3</sup>  
- Bulk density: 650 kg/m<sup>3</sup> ~ 650 kg/m<sup>3</sup>  
- Solub. in water (20 °C) 300 g/l  
- pH (100 g/l H<sub>2</sub>O, 20 °C) 5

**Safety:**  
> Poison calss CH (Swiss): 3

**Transport/storage:**  
> LGK: 10-13  
> Disposal: 3

**Physical data:**  
- Form: Powder

**Toxicological data:**  
- WGK: 2

### E7156-1 Ethylenediamine dihydrochloride, reagent grade

HS-No: 2921 21 00 00

Assay ..... min. 99.0 %  
Solubility test in water ..... passes test  
Residue after ignition (as sulfate) ... max. 0.1 %  
Heavy metals (as Pb) ..... max. 0.001 %

Code	Capacity
E7156-1-0100	100 g

## ETHYLENEDIAMINE DIHYDROCHLORIDE

Synonyms: 1,2-Diaminoethane dihydrochloride, Ethylenediammonium dichloride



- C<sub>2</sub>H<sub>8</sub>N<sub>2</sub>·2HCl  
- M = 133.02 g/mol  
- CAS [333-18-6]  
- EC number: 206-369-6

- Spec. density: 1.11 g/cm<sup>3</sup>  
- Bulk density: 650 kg/m<sup>3</sup> ~ 650 kg/m<sup>3</sup>  
- Solub. in water (20 °C) 300 g/l  
- pH (100 g/l H<sub>2</sub>O, 20 °C) 5

**Safety:**  
- Poison calss CH (Swiss): 3

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 3

**Physical data:**  
- Form: Powder

**Toxicological data:**  
- WGK: 2

### E7156-1 Ethylenediamine dihydrochloride, reagent grade

HS-No: 2921 21 00 00

Assay ..... min. 99.0 %  
Solubility test in water ..... passes test  
Residue after ignition (as sulfate) ... max. 0.1 %  
Heavy metals (as Pb) ..... max. 0.001 %

Code	Capacity
E7156-1-0100	100 g

## ETHYLENE GLYCOL MONOMETHYL ETHER



Synonyms: 2-Methoxyethanol, Methyl glycol Methyl cellosolve



- C<sub>3</sub>H<sub>8</sub>O<sub>2</sub>  
- M = 76.10 g/mol  
- CAS [109-86-4]  
- EC number: 203-713-7

- Vapour pressure: (20 °C) 11 hPa  
- Refraction index: (n<sub>20 °C/D</sub>) 1.4021  
- Dielectirc const.: (20 °C) 15.4  
- Evap. heat: (125 °C) 557 kJ/kg  
- Saturation conc.: (20 °C) 33 g/m<sup>3</sup>  
- Expl. limit (upper): 20 Vol%  
- Expl. limit (lower): 2.5 Vol%

**Safety:**  
- EC Index no.: 603-011-00-4  
- R: 60-61-10-E20/21/22  
- S: 53-36/37-45  
- Poison class CH (Swiss): 2

**Transport/storage:**  
- ADR: 3 F1 III UN 1188  
- IMDG: 3 III UN 1188  
- IATA/ICAO: 3 III UN 1188  
- PAX: 309  
- CAO: 310  
- LGK: 3 A  
- Disposal: 1

**Physical data:**  
- Form: Liquid  
- Density: 0.95 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- Melting point: -85 °C  
- Boiling point: 124.5 °C  
- Flash point: 39 °C  
- Ignition temp.: 285 °C

**Toxicological data:**  
- LD 50 (oral, rat): 2370 mg/kg  
- MAK: 5 ml/m<sup>3</sup>, 16 mg/m<sup>3</sup>  
- WGK: 1

### E7158-1 Ethylene glycol monomethyl ether, reagent grade

HS-No: 2909 42 00 00

Assay .....	min. 99.5 %	Iron (Fe) .....	max. 0.00005 %
Identit (IR-spectrum) .....	passes test	Lead (Pb) .....	max. 0.00001 %
Density (20/4°) .....	0.964 - 0.968	Magnesium (Mg) .....	max. 0.00001 %
Colour .....	max. 10 Hazen	Manganese (Mn) .....	max. 0.000002 %
Acidity .....	max. 0.001 meq/g	Nickel (Ni) .....	max. 0.000002 %
Alkalinity .....	max. 0.0005 meq/g	Tin (Sn) .....	max. 0.00001 %
Aluminium (Al) .....	max. 0.00005 %	Zinc (Zn) .....	max. 0.00001 %
Barium (Ba) .....	max. 0.00001 %	Acetaldehyde (CH <sub>3</sub> CHO) .....	max. 0.003 %
Boron (B) .....	max. 0.000002 %	Formaldehyde .....	max. 0.001 %
Cadmium (Cd) .....	max. 0.000005 %	Peroxides (as H <sub>2</sub> O <sub>2</sub> ) .....	max. 0.002 %
Calcium (Ca) .....	max. 0.00005 %	Substances darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Chromium (Cr) .....	max. 0.000002 %	Non-volatile matter .....	max. 0.002 %
Cobalt (Co) .....	max. 0.000002 %	Water .....	max. 0.1 %
Copper (Cu) .....	max. 0.000002 %		

Code	Capacity
E7158-1-2501	2.5 L

## ETHYLENEDIAMINE



Synonyms: 1,2-Ethanediamine, 1,2-Diaminoethane



- C<sub>2</sub>H<sub>8</sub>N<sub>2</sub>  
- M = 60.10 g/mol  
- CAS [107-15-3]  
- EC number: 203-468-6

**Physical data:**

- Density: 0.90 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- Melting point: 11 °C  
- Boiling point: 116 - 118 °C  
- Flash point: ~ 36 °C  
- Ignition temp.: ~ 400 °C  
- Vapour pressure: (20 °C) 12 hPa

- Refraction index: (n 20 °C/D) 1.4540  
- Viscosity: (25 °C) 1.54 mPas  
- Dielectric const.: (18 °C) 16  
- Eva. heat: (116 °C) 700 kJ/kg  
- Saturation conc.: (20 °C) 29 g/m<sup>3</sup>  
- Expl. limit (upper): 16.3 Vol%  
- Expl. limit (lower): 2.5 Vol%  
- pH (250 g/l H<sub>2</sub>O, 25 °C) ~ 12

**Toxicological data:**

- LD 50 (oral, rat): 76 mg/kg  
- MAK: 10 ml/m<sup>3</sup>, 25 mg/m<sup>3</sup>  
- WGK: 2

**Safety:**

- EC Index no.: 612-006-00-6  
- R: 10-21/22-34-42/43  
- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 8 CF1 II UN 1604  
- IMDG: 8 II UN 1604  
- IATA/ICAO: 8 II UN 1604  
- PAX: 808  
- CAO: 812  
- LGK: 3 A  
- Disposal: 5

E

### E7160-2 Ethylenediamine, synthesis grade

HS-No: 2921 21 00 00

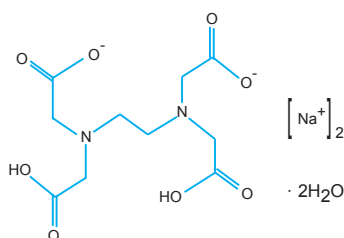
Assay ..... min. 99 %  
Non-volatile matter ..... max. 0.05 %  
Water ..... max. 0.5 %

Code	Capacity
E7160-2-1000	1 L
E7160-2-2500	2.5 L

## ETHYLENEDIAMINETETRAACETIC ACID, EDTA, DISODIUM SALT, DEHYDRATE



Synonyms: Edetic acid disodium salt, Disodium dihydrogen ethylenediaminetetraacetate



- C<sub>10</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>8</sub>·2H<sub>2</sub>O  
- M = 372.24 g/mol  
- CAS [6381-92-6]  
- EC number: 205-358-3

**Physical data:**

- Bulk density: ~ 400 - 500 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 100 g/l

- Melting point: 252 °C (decomposes)  
- pH (50 g/l H<sub>2</sub>O, 20 °C) 4 - 5

**Toxicological data:**

- LD 50 (oral, rat): 2000 mg/kg  
- WGK: 2

**Safety:**

- R: 22  
- S: 46  
- Poison class CH (Swiss): 4

**Transport/storage:**

- LGK: 10-13  
- Disposal: 3

### E7174-1 Ethylenediaminetetraacetic acid, EDTA, disodium salt, dehydrate, reagent grade

HS-No: 2922 49 95 90

Assay (complexometric, referred to anhydrous substance) ..... min. 99 %	Nitrilotriacetic acid ..... max. 0.05 %
Insoluble in water ..... max. 0.003 %	Calcium (Ca) ..... passes test
pH (5%, H <sub>2</sub> O) ..... 4 - 5	Copper (Cu) ..... max. 0.0001 %
Chloride (Cl) ..... max. 0.004 %	Iron (Fe) ..... max. 0.0005 %
Cyanides (Cn) ..... max. 0.001 %	Heavy metals (as Pb) ..... max. 0.0005 %
Sulfates (SO <sub>4</sub> ) ..... max. 0.01 %	Lead (Pb) ..... max. 0.001 %
	Loss on drying (150 °C, 3h) ..... 9 - 10 %

Code	Capacity
E7174-1-0250	250 g
E7174-1-0500	500 g
E7174-1-1000	1 kg

### E7174-3 Ethylenediaminetetraacetic acid, EDTA, disodium salt, dehydrate, synthesis grade

HS-No: 2922 49 95 90

Assay (complexometric, referred to anhydrous substance) ..... min. 98 %	Sulfates (SO <sub>4</sub> ) ..... max. 0.1 %
pH (5%, H <sub>2</sub> O) ..... 4 - 5	Heavy metals (as Pb) ..... max. 0.005 %
Chlorides (Cl) ..... max. 0.02 %	Lead (Pb) ..... max. 0.005 %
	Water ..... 9 - 10 %

Code	Capacity
E7174-3-0500	500 g

## ETHYLENEDIAMINETETRAACETIC ACID, EDTA, DISODIUM SALT, VOLUMETRIC SOLUTIONS

### E7178-0 Ethylenediaminetetraacetic acid, EDTA, disodium salt, solution 0.01 mol/l (0.02 N)

Synonyms: Edetic acid disodium salt, Disodium dihydrogen ethylenediaminetetraacetate

HS-No: 2922 49 95 90

- C<sub>10</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>8</sub>·2H<sub>2</sub>O  
- M = 372.24 g/mol  
- CAS [6381-92-6]  
- EC number: 205-358-3

**Physical data:**

- Density: 0.99 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Transport/storage:**

- LGK: 10-13

1 ml = 0.003722 g  
[CH<sub>2</sub>N(CH<sub>2</sub>COOH)CH<sub>2</sub>COONa]<sub>2</sub>·2H<sub>2</sub>O

Code	Capacity
E7178-0-1000	1 L

### E7181-0 Ethylenediaminetetraacetic acid, EDTA, disodium salt, solution 0.02 mol/l (0.04 N)

HS-No: 2922 49 95 90

Synonyms: Edetic acid disodium salt, Disodium dihydrogen ethylenediaminetetraacetate

- C<sub>10</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>8</sub>·2H<sub>2</sub>O  
- M = 372.24 g/mol  
- CAS [6381-92-6]  
- EC number: 205-358-3

**Physical data:**

- Density: 0.99 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Transport/storage:**

- LGK: 10-13

1 ml = 0.007444 g  
[CH<sub>2</sub>N(CH<sub>2</sub>COOH)CH<sub>2</sub>COONa]<sub>2</sub>·2H<sub>2</sub>O

Code	Capacity
E7181-0-1000	1 L



**E7182-0 Ethylenediaminetetraacetic acid, EDTA, disodium salt, solution 0.025 mol/l (0.05 N)**

HS-No: 2922 49 95 90

Synonyms: *Edetic acid disodium salt, Disodium dihydrogen ethylenediaminetetraacetate*

- C<sub>10</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>8</sub>·2H<sub>2</sub>O
- M = 372.24 g/mol
- CAS [6381-92-6]
- EC number: 205-358-3

**Physical data:**

- Density: 1.00 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Transport/storage:**

- LGK: 10-13

1 ml = 0.009305 g  
[CH<sub>2</sub>N(CH<sub>2</sub>COOH)CH<sub>2</sub>COONa]<sub>2</sub>·2H<sub>2</sub>O

Code	Capacity
E7182-0-1000	1.0 L

**E7183-0 Ethylenediaminetetraacetic acid, EDTA, disodium salt, solution 0.05 mol/l (0.1 N)**

HS-No: 2922 49 95 90

Synonyms: *Edetic acid disodium salt, Disodium dihydrogen ethylenediaminetetraacetate*

- C<sub>10</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>8</sub>·2H<sub>2</sub>O
- M = 372.24 g/mol
- CAS [6381-92-6]
- EC number: 205-358-3

**Physical data:**

- Density: 1.00 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Transport/storage:**

- LGK: 10-13

1 ml = 0.01861 g  
[CH<sub>2</sub>N(CH<sub>2</sub>COOH)CH<sub>2</sub>COONa]<sub>2</sub>·2H<sub>2</sub>O

Code	Capacity
E7183-0-1000	1.0 L
E7183-0-2501	2.5 L

**E7185-0 Ethylenediaminetetraacetic acid, EDTA, disodium salt, solution 0.1 mol/l (0.2 N)**

HS-No: 2922 49 95 90

Synonyms: *Edetic acid disodium salt, Disodium dihydrogen ethylenediaminetetraacetate*

- C<sub>10</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>8</sub>·2H<sub>2</sub>O
- M = 372.24 g/mol
- CAS [6381-92-6]
- EC number: 205-358-3

**Toxicological data:**

- LD 50 (oral, rat): 2000 mg/kg (EDTA disodium salt)
- WGK: 1

**Transport/storage:**

- LGK: 10-13

1 ml = 0.03722 g  
[CH<sub>2</sub>N(CH<sub>2</sub>COOH)CH<sub>2</sub>COONa]<sub>2</sub>·2H<sub>2</sub>O**Physical data:**

- Density: 1.00 g/cm<sup>3</sup>
- pH (20 °C) ~ 7.5

**Safety:**

- Poison class CH (Swiss): F

Code	Capacity
E7185-0-1000	1.0 L

E

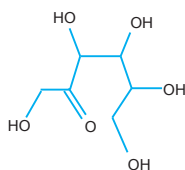




# Chemical list : F

## D(-)-FRUCTOSE

Synonyms:



- C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>  
- M = 180.16 g/mol  
- CAS [57-48-7]  
- EC number: 200-333-3

- pH value ~ 5 - 6 (100 g/l H<sub>2</sub>O, 20 °C)  
- Melting point: 100 - 110 °C (decomposition)  
- Bulk density ~ 700 - 800 kg/m<sup>3</sup>

**Safety:**  
- Poison class CH: F  
**Transport/storage:**  
- LGK: 10-13

**Physical data:**

- Spce. density: ~ 1.65 g/cm<sup>3</sup> (20 °C)  
- Solub. in water 500 g/l (20 °C)

**Toxicological**

- WGK: nwg

### F1000-3 D(-)-Fructose, extra pure

HS-No: 1702 50 50 00

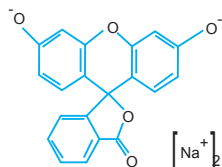
Assay (C <sub>6</sub> H <sub>12</sub> O <sub>6</sub> ) .....	98.5 -102.0 %
Identity (IR-spectrum) .....	passes test
Appearance of solution (50%, water)	passes test
Insoluble in water .....	passes test
Specific rotation ([α] <sub>D</sub> <sup>20</sup> , c = 10, water) .....	-91.0 - -93.5
Chloride (Cl) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %
Arsenic (As) .....	max. 0.0001 %
Barium (Ba) .....	max. 0.005 %
Calcium (Ca) .....	max. 0.002 %
Calcium and magnesium (as Ca) ...	max. 0.005 %
Copper (Cu) .....	max. 0.001 %

Heavy metals (as Pb) .....	max. 0.0005 %
Iron (Fe) .....	max. 0.001 %
Lead (Pb) .....	max. 0.00005 %
Magnesium (Mg) .....	max. 0.002 %
Nickel (Ni) .....	max. 0.001 %
Foreign sugars .....	passes test
Glucose (HPLC) .....	max. 0.5 %
5-Hydroxymethylfurfural and related substances .....	passes test
Sulfated ash .....	max. 0.1 %
Water .....	max. 0.5 %
Residual solvents (Ph Eur/ICH) class 3	max. 0.5 %
Other residual solvents (Ph Eur/ICH) ..	excluded by production process

Code	Capacity
F1000-3-0500	500 g

## FLUORESCIN SODIUM

Synonyms: 3',6'-Dihydroxyspiro-[isobenzofuran -1-(3H),9'-[9H] xanthen] -3-one, Resorcinolphthalein



- C<sub>20</sub>H<sub>10</sub>Na<sub>2</sub>O<sub>5</sub>  
- M = 376.28 g/mol  
- CAS [518-47-8]  
- EC number: 208-253-0

- Solub. in water (20 °C): 500 g/l  
- Melting point: > 360 °C  
- pH (10 g/l, H<sub>2</sub>O, 20 °C) ~ 8.3

**Safety:**  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- LGK: 10-13

**Physical data:**

- Form: Solid  
- Bulk density: ~ 600 g/m<sup>3</sup>

**Toxicological data:**

- LD 50 (oral, rat): 6721 mg/kg  
- WGK: 3\*

### F4000-01 Fluorescein sodium, C.I. 45350

HS-No: 3204 90 00 00

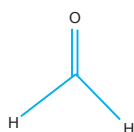
Assay (titr. with HClO <sub>4</sub> , on dried substance) .....	min. 95 %
Identity (IR-spectrum) .....	passes test
Absorption maximum (pH 8.0) .....	490 - 492 nm
Absorptivity (A1%/1cm; λ max, pH 8.0 on dried substance) .....	1950 - 2150

Arsenic (As) .....	max. 0.005 %
Cadmium (Cd) .....	max. 0.05 %
Copper (Cu) .....	max. 0.01 %
Lead (Pb) .....	max. 0.01 %
Water .....	max. 10 %

Code	Capacity
F4000-1-0025	25 g

## FORMALDEHYDE, SOLUTION 37 %

Synonyms: Formalin solution, Formol, Methanal solution, Methyl aldehyde solution



- CH<sub>2</sub>O  
- M = 30.03 g/mol  
- CAS [50-00-00]  
- EC number: 200-001-8

- Vapour pressure: 1.3 hPa (formaldehyde)  
- Expl. limit (upper): 73 Vol% (formaldehyde)  
- Expl. limit (lower): 7 Vol% (formaldehyde)  
- pH (20 °C) 3 - 4



**Safety:**  
- EC Index no.: 605-001-00-5  
- R: 23/24/25-34-39/23/24/25-40-42  
- S: 26-36/37/39-45  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- ADR: 8 C9 III UN 2209  
- IMDG: 8 III UN 2209  
- IATA/ICAO: 8 III UN 2209  
- PAX: 818  
- CAO: 820  
- LGK: 6.1 A  
- Disposal: 7

**Physical data:**

- Density: 1.09 g/cm<sup>3</sup>  
- Melting point: < -15 °C  
- Boiling point: 93 - 96 °C  
- Flash point: ~ 62 °C  
- Ignition temp.: ~ 300 °C (pure substance)

**Toxicological data:**

- LD 50 (oral, rat): 100 mg/kg (formaldehyde)  
- MAK: 0.5 ml/m<sup>3</sup>, 0.62 mg/m<sup>3</sup>  
- WGK: 2

### F5023-1 Formaldehyde solution 37%, reagent grade, stabilized with approx. 10% methanol

HS-No: 2912 11 00 00

Assay (acidimetric after oxidation) ..	37.0 - 38.0 %
Identity .....	passes test
Colour .....	passes test
Free acid as (HCOOH) .....	max. 0.03 %
Density (d 20 °C/4 °C) .....	1.08 - 1.09 g/ml
Chloride (Cl) .....	max 0.001 %

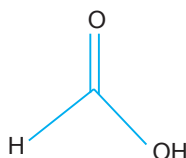
Heavy metals (as Pb) .....	max. 0.0005 %
Iron (Fe) .....	max. 0.0005 %
Methanol (GC) .....	9.0 - 11.0 %
Others residual solvents (Ph Eur/ICH)	Excluded by production process
Sulfated ash .....	max. 0.1 %

Code	Capacity
F5023-1-1000	1.0 L
F5023-1-2501	2.5 L

## FORMIC ACID, 85%



Synonyms: Methanoic acid, Formylic acid



- CH<sub>2</sub>O<sub>2</sub>  
- M = 46.03 g/mol  
- CAS [64-18-6]  
- EC number: 200-579-1

### Physical data:

- Form: Liquid  
- Density: ~ 1.2 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible

- Melting point: ~ -9 °C  
- Boiling point: ~ 107 °C  
- Expl. limit (upper): 45.5 Vol%  
- Expl. limit (lower): 10 Vol%

### Toxicological:

- LD 50 (oral, rat): 730 mg/kg (pure substance)  
- MAK: 5 ml/m<sup>3</sup>, 9.5 mg/m<sup>3</sup>

### Safety:

- EC Index no.: 607-001-00-0  
- R: 34  
- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 2

### Transport/storage:

- ADR: 8 C3 II UN 1779  
- IMDG: 8 II UN 1779  
- IATA/ICAO: 8 II UN 1779  
- PAX: 808  
- CAO: 812

### F5033-3 Formic acid 85%, extra pure

HS-No: 2915 11 00 00

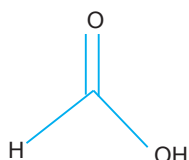
Assay (acidimetric) .....	min. 85 %	Iron (Fe) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.002 %	Lead (Pb) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.001 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.01 %	Non-volatile matter .....	max. 0.01 %
Copper (Cu) .....	max. 0.001 %		

Code	Capacity
F5033-3-2501	2.5 L

## FORMIC ACID, 98-100%



Synonyms: Methanoic acid, Formylic acid



- CH<sub>2</sub>O<sub>2</sub>  
- M = 46.03 g/mol  
- CAS [64-18-6]  
- EC number: 200-579-1

### Physical data:

- Form: Liquid  
- Density: 1.22 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- Melting point: ~ 8 °C  
- Boiling point: 101 °C  
- Flash point: 48 °C  
- Ignition temp.: 480 °C

- Vapour pressure: (20 °C) 42 hPa  
- Refraction index: (n 20 °C/D) 1.3714  
- Dielectric const.: (16 °C) 58.5  
- Evap. heat: (101 °C) 900 kJ/kg  
- Saturaton conc.: (20 °C) 80 g/m<sup>3</sup>  
- Expl. limit (upper): 38 Vol%  
- Expl. limit (lower): 12 Vol%  
- pH (10 g/l H<sub>2</sub>O, 20 °C) 2.2

### Toxicological data:

- LD 50 (oral, rat): 730 mg/kg  
- MAK: 5 ml/m<sup>3</sup>, 9.5 mg/m<sup>3</sup>  
- WGK: 1

### Safety:

- EC Index no.: 607-001-00-0  
- R: 35  
- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 8 C3 II UN 1779  
- IMDG: 8 II UN 1779  
- IATA/ICAO: 8 II UN 1179  
- PAX: 808  
- CAO: 812  
- LGK: 8 A  
- Disposal: 4

### F5035-1 Formic acid 98-100%, reagent grade

HS-No: 2915 11 00 00

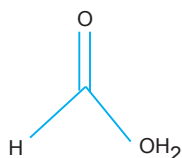
Assay (acidimetric) .....	min. 98 %	Iron (Fe) .....	max. 0.0002 %
Colour .....	max. 10 Hazen	Germanium (Ge) .....	max. 0.000005 %
Acetic acid (CH <sub>3</sub> COOH) .....	max. 0.005 %	Lithium (Li) .....	max. 0.000002 %
Chloride (Cl) .....	max. 0.0005 %	Magnesium (Mg) .....	max. 0.00005 %
Oxalates (C <sub>2</sub> O <sub>4</sub> ) .....	max. 0.005 %	Manganese (Mn) .....	max. 0.000005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.0005 %	Molybdenum (Mo) .....	max. 0.000002 %
Sulfites (SO <sub>3</sub> ) .....	max. 0.001 %	Nickel (Ni) .....	max. 0.000005 %
Silver (Ag) .....	max. 0.000002 %	Lead (Pb) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.000005 %	Potassium (K) .....	max. 0.00001 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %	Sodium (Na) .....	max. 0.00005 %
Barium (Ba) .....	max. 0.000005 %	Strontium (Sr) .....	max. 0.000002 %
Beryllium (Be) .....	max. 0.000002 %	Titanium (Ti) .....	max. 0.00001 %
Bismuth (Bi) .....	max. 0.00001 %	Thallium (Tl) .....	max. 0.000005 %
Cadmium (Cd) .....	max. 0.000005 %	Vanadium (V) .....	max. 0.000005 %
Calcium (Ca) .....	max. 0.00002 %	Zinc (Zn) .....	max. 0.000005 %
Cobalt (Co) .....	max. 0.000002 %	Zirconium (Zr) .....	max. 0.00001 %
Copper (Cu) .....	max. 0.000002 %	Non-volatile matter .....	max. 0.001 %
Chromium (Cr) .....	max. 0.000005 %		

Code	Capacity
F5035-1-2501	2.5 L

## FORMAMIDE



Synonyms: Methanamide, Methane amide, Carbamaldehyde, Formic acid amide



- CH<sub>3</sub>NO  
- M = 45.04 g/mol  
- CAS [75-12-7]  
- EC number: 200-542-0

### Physical data:

- Form: Liquid  
- Density: 1.13 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible

- Melting point: 2 °C  
- Boiling point: 210 °C  
- Flash point: 175 °C  
- Ignition temp.: 500 °C  
- Vapour pressure: (20 °C) 0.08 hPa  
- Dipolar moment: (20 °C) 3.4 Debye  
- Dielectric const: (20 °C) 109.5  
- Saturation conc.: (20 °C) 0.24 g/m<sup>3</sup>  
- Expl. limit (upper): 19.0 Vol%  
- Expl. limit (lower): 2.7 Vol%  
- pH (200 g/l H<sub>2</sub>O, 20 °C) 4 - 5

### Toxicological data:

- LD 50 (oral, rat): 5800 mg/kg  
- WGK: 1

### Safety:

- R: 61  
- S: 53-24/25-37-45  
- Poison class CH (Swiss): 3

### Transport/storage:

- LGK: 6.1 A  
- Disposal: 1

**F5040-1 Formamide, reagent grade**

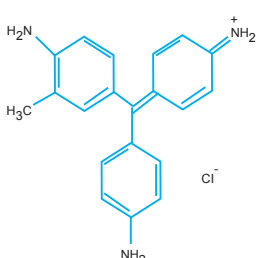
HS-No: 2924 19 00 90

Assay (as N) .....	min. 99 %	Iron (Fe) .....	max. 0.0001 %
Identity (IR-spectrum) .....	passes test	Lead (Pb) .....	max. 0.0001 %
Density (20°/4°) .....	1.132 - 1.135	Zinc (Zn) .....	max. 0.0001 %
Colour .....	max. 10 Hazen	Formic acid .....	max. 0.02 %
Melting point .....	2.0 - 3.0 °C	Ammonium formate .....	max. 0.1 %
Chloride (Cl) .....	max. 0.0001 %	Sulfated Ash (600 °C) .....	max. 0.005 %
Cadmium (Cd) .....	max. 0.0001 %	Water .....	max. 0.1 %
Copper (Cu) .....	max. 0.0001 %		

Code	Capacity
F5040-1-2501	2.5 L

**FUCHSIN ACID, C.I. 42510**

Synonyms:



- C<sub>20</sub>H<sub>20</sub>ClN<sub>3</sub>
- M = 337.85 g/mol
- CAS [632-99-5]
- EC number: 211-189-6

**Physical data:**

- Form: Solid
- Density: ~ 500 kg/cm<sup>3</sup>
- Solub. in water (25 °C): 4 g/l
- Melting point: ~ 235 °C (decomposes)
- pH (1 g/l H<sub>2</sub>O, 25 °C) 5 - 6

**Toxicological data:**

- WGK: 3

**Transport/storage:**

- LGK: 10-13

**F6000-9 Fuchsin basic C.I. 42510**

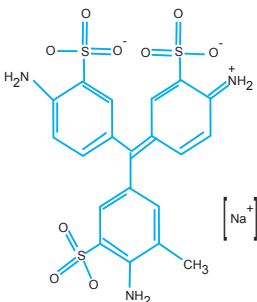
HS-No: 3204 13 00 00

Absorption maximum λ (in ethanol 50%) .....	549 - 552 nm	Absorptivity (A1%/1cm, λ max) .....	1600 - 2250
		Loss on drying (135 °C) .....	max. 15 %

Code	Capacity
F6000-9-0025	25 g

**FUCHSIN ACID, C.I. 42685**

Synonyms:



- C<sub>20</sub>H<sub>17</sub>N<sub>3</sub>Na<sub>2</sub>O<sub>9</sub>S<sub>3</sub>
- M = 585.54 g/mol
- CAS [3244-88-0]
- EC number: 221-816-5

**Physical data:**

- Form: Solid
- Bulk Density: ~ 920 kg/cm<sup>3</sup>
- Solub. in water (20 °C): 200 g/l
- Melting point: > 130 °C (decomposes)
- pH (10 g/l H<sub>2</sub>O, 20 °C) ~ 3 - 4

**Transport/storage:**

- LGK: 10-13

**F6001-0 Fuchsin acid, C.I. 42685**

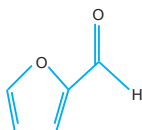
HS-No: 3204 12 00 00

Absorption maximum λ (in HCl 0.005 mol/l) .....	540 - 545 nm	Absorptivity (A1%/1cm, λ max) .....	800 - 1300
		Loss on drying (135 °C) .....	max. 10 %

Code	Capacity
F6001-0-0025	25 g

**FURFURAL**

Synonyms: 2-Furaldehyde, 2-Furancarbaldehyde, Furfymethanal



- C<sub>5</sub>H<sub>4</sub>O<sub>2</sub>
- M = 96.09 g/mol
- CAS [98-01-1]
- EC number: 202-627-7

**Physical data:**

- Form: Liquid
- Density: 1.16 g/cm<sup>3</sup>
- Solub. in water (20 °C): 83 g/l
- Melting point: -37 °C
- Boiling point: 162 °C
- Flash point: 60 °C
- Ignition temp.: 315 °C

**Applications:** Analytical chemistry, for the detection of: aromatic amines, insecticide, fungicide, solvents.

- Vapour pressure: (20 °C) 1 hPa
- Dielectric const.: (20 °C) 41.9
- Saturation conc.: (20 °C) 5.8 g/m<sup>3</sup>
- Expl. limit (upper): 19.3 Vol%
- Expl. limit (lower): 2.1 Vol%

- S: 26-36/37/39/45
- Vbc class: All
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 6.1 TF1 II UN 1199
- IMDG: 6.1 II UN 1199
- IATA/ICAO: 6.1 II UN 1199
- PAX: 609
- CAO: 611
- LGK: 3 B
- Disposal: 9

**Toxicological data:**

- LD 50 (oral, rat): 65 mg/kg
- WGK: 2

**Safety:**

- EC Index no.: 605-010-00-4
- R: 21-23/25-36/37-40

**F6005-1 Furfural, reagent grade**

HS-No: 2932 12 00 00

Assay .....	min. 98 %	Sulfated ash .....	max. 0.005 %
Identity (IR-spectrum) .....	passes test	Water .....	max. 0.05 %
Density (20°/4°) .....	1.158 - 1.160		

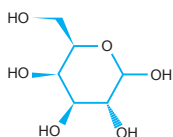
Code	Capacity
F6005-1-0501	500 ml

# Chemical list : G



## D(+)-GALACTOSE

Synonyms: Lactoglucose, D-Galactopyranose



- C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>  
- M = 180.16 g/mol  
- CAS [59-23-4]  
- EC number: 200-416-4

**Physical data:**  
- Form: Solid

- Spec. density: 1.5 g/cm<sup>3</sup>  
- Bulk density: ~ 600 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 650 g/l  
- Melting point: 163 - 169 °C  
- pH (H<sub>2</sub>O, 20 °C) 4.5 - 6.0

**Safety:**  
- Poison class CH (Swiss): F

**Transport/storage:**  
- LGK: 10-13

**Toxicological data:**  
- WGK: 0

### G1000-3 D(+)-Galactose, extra pure

HS-No: 2940 00 00 80

Identity (IR-spectrum) ..... passes test  
Acidly or alkalinely reacting impurities ..... passes test  
Specific rotation ([α]<sub>D</sub><sup>20</sup>, 10% water, referred to anhydrous substance) ..... +79 - +81 °C  
Barium (Ba) ..... passes test  
Calcium (Ca) ..... max. 0.01 %

Heavy metals (as Pb) ..... max. 0.0005 %  
Lead (Pb) ..... max. 0.00005 %  
Sulfated ash ..... max. 0.1 %  
Related substances (TLC) ..... passes test  
Loss on drying (105 °C) ..... max. 0.2 %

Code	Capacity
G1000-3-0250	250 g

G

## GOLD STANDARD SOLUTION 1000MG/L FOR AA

### G1001-0 Gold standard solution 1000mg/l for AA (gold (III) trichloride acid in hydrochloric acid 2 mol/l)

HS-No: 3822 00 00 00

Synonyms:

1 ml = 1000±5 mg/l

**Physical data:**

- Solub. in water (20 °C): miscible  
- pH (20 °C) < 1

Code	Capacity
G1001-0-0500	500 ml

## GELATINE POWDER

Synonyms: Gelatine powder

- CAS [9000-70-8]  
- EC number: 232-554-6

- Solub. in water: soluble in hot water  
- Boiling point: 100 °C

**Safety:**  
- Poison class CH (Swiss): F

**Physical data:**  
- Bulk density: ~ 580 kg/m<sup>3</sup>

**Toxicological data:**  
- LD 50 (oral, rat): > 5000 mg/kg  
- WGK: 0

**Transport/storage:**  
- LGK: 10-13

### G2001-1 Gelatine powder, reagent grade

HS-No: 3503 00 10 00

pH (1%, H<sub>2</sub>O) ..... 3.8 - 7.6  
Sulphur dioxide (SO<sub>2</sub>) ..... max. 0.005 %  
Arsenic (As) ..... max. 0.0001 %  
Heavy metals (as Pb) ..... max. 0.001 %

Peroxides (as H<sub>2</sub>O<sub>2</sub>) ..... max. 0.01 %  
Sulfated ash ..... max. 2 %  
Loss on drying ..... max. 15 %  
Suitability for microbiology ..... passes test

Code	Capacity
G2001-1-0500	500 g

## GLUTARDIALDEHYDE SOLUTION 25%

Synonyms: Pentanedial, glutaraldehyde, Glutaric dialdehyde



- C<sub>5</sub>H<sub>8</sub>O<sub>2</sub>  
- M = 100.12 g/mol  
- CAS [111-30-8]  
- EC number: 203-856-5

**Physical data:**  
- Form: Liquid  
- Density: 1.06 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- Melting point: -7 °C  
- Boiling point: ~ 100 °C

**Toxicological data:**  
- LD 50 (oral, rat): 134 mg/kg (pure substance)  
- MAK: 0.05 ml/m<sup>3</sup>, 0.21 mg/m<sup>3</sup>  
- WGK: 2

**Safety:**  
- EC Index no.: 605-022-00-X  
- R: 22-23-34-42/43/50  
- S: 26-36/37/39-45-61  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- ADR: 6.1 TC1 II UN 2927  
- IMDG: 6.1 II UN 2927  
- IATA/ICAO: 6.1 II UN 2927  
- PAX: 609  
- CAO: 611  
- LGK: 6.1 B  
- Disposal: 7



### G3001-1 Glutardialdehyde solution 25%, reagent grade

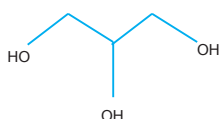
HS-No: 2912 19 00 00

Assay (methanol of bisulfite) ..... approx. 25.0 %  
Density (20 °C) ..... 1.060 - 1.065

Code	Capacity
G3001-1-0500	500 g

## GLYCEROL

Synonyms: Glycerin, 1,2,3-Propanetriol



- C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>  
- M = 92.10 g/mol  
- CAS [56-81-5]  
- EC number: 200-289-5

**Physical data:**  
- Density: 1.26 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- Melting point: 18 °C

- Boiling point: (0.09 hPa) 120 °C  
- Flash point: 199 °C  
- Ignition temp.: 400 °C  
- Vapour pressure: (20 °C) < 0.001 hPa  
- Expl. limit (lower): 0.9 Vol%  
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~ 5

**Toxicological data:**  
- LD 50 (oral, rat): 12600 mg/kg  
- WGK: 1

**Safety:**  
- Poison class CH (Swiss): F

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 1

**G4018-1 Glycerol 99.5%, reagent grade**

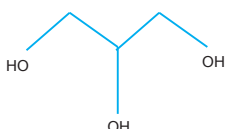
HS-No: 2905 45 00 00

Assay (acidimetric) .....	min. 99.5 %	Heavy metals (as Pb) .....	max. 0.0005 %
Insoluble in water .....	passes test	Iron (Fe) .....	max. 0.0005 %
Acidity/alkalinity .....	passes test	Lead (Pb) .....	max. 0.001 %
Halogen compounds (as Cl) .....	max. 0.003 %	Nickel (Ni) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.001 %	Zinc (Zn) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.001 %	Aldehydes (HCHO) .....	max. 0.0005 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.0015 %	1,2,4-butanetriol (G.C) .....	max. 0.2 %
Arsenic (As) .....	max. 0.0001 %	Sulfated Ash .....	max. 0.01 %
Copper (Cu) .....	max. 0.001 %	Water .....	max. 2 %

Code	Capacity
G4018-1-1000	1.0 L
G4018-1-2500	2.5 L

**GLYCEROL ANHYDROUS**

Synonyms: Glycerin, 1,2,3-Propanetriol



- C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>
- M = 92.10 g/mol
- CAS [56-81-5]
- EC number: 200-289-5

**Physical data:**

- Form: Liquid
- Density: 1.26 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: 18 °C
- Boiling point: (0.09 hPa) 120 °C

- Flash point: 199 °C
- Ignition temp.: 400 °C
- Vapour pressure: (20 °C) < 0.001 hPa
- Expl. limit (lower): 0.9 Vol%
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~ 5

**Toxicological data:**

- LD 50 (oral, rat): 12600 mg/kg
- WGK: 1

**Safety:**

- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13
- disposal: 1

**G4018-8 Glycerol anhydrous, molecular biology grade**

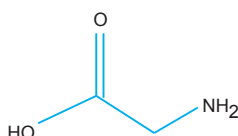
HS-No: 2905 45 00 00

Assay .....	min. 99 %	Arsenic (As) .....	max. 0.0003 %
Specific gravity .....	1.249	Heavy metals (as Pb) .....	max. 0.0005 %
Ash .....	max. 0.01 %	RNase, DNase, Protease activity ....	none detected

Code	Capacity
G4018-8-1000	1.0 L

**GLYCINE**

Synonyms: Aminoacetic acid, Glycocol



- C<sub>2</sub>H<sub>5</sub>NO<sub>2</sub>
- M = 75.07 g/mol
- CAS [56-40-6]
- EC number: 200-272-2

**Physical data:**

- Form: Solid
- Spec. density: 1.595 g/cm<sup>3</sup>

- Bulk density: ~ 920 kg/m<sup>3</sup>
- Solub. in water (20 °C): 225 g/l
- Melting point: 232 - 236 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5.9 - 6.4

**Toxicological data:**

- LD 50 (oral, rat): 7930 mg/kg
- WGK: 0

**Safety:**

- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13

**G4020-3 Glycine, extra pure**

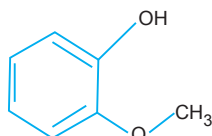
HS-No: 2922 49 10 00

Assay (titr. with HClO <sub>4</sub> ) .....	99 - 101 %	Ammonium (NH <sub>4</sub> ) .....	max. 0.02 %
Appearance of solution (10%, water)	passes test	Heavy metals (as Pb) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	5.9 - 6.4	Sulfated Ash .....	max. 0.1 %
Hydrolizable substances .....	passes test	Loss on drying (105 °C) .....	max. 0.2 %
Other aminoacids .....	max. 0.1 %	Organic volatile impurities (USP) ....	passes test
Other ninhydrin positive substance (as glycine) .....	max. 0.1 %	Residual solvents (Ph Eur) class2 (Methanol) .....	max. 0.3 %
Chlorides (Cl) .....	max. 0.005 %	Other residual solvents (Ph Eur/ICH)	Excluded by production process
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %		

Code	Capacity
G4020-3-0500	500 g

**GUAIACOL**

Synonyms: O-Methoxyphenol, Methylcatechol, 1-Hydroxy-2-methoxybenzene, 2-Methoxyphenol, Pyrocatechol monomethyl ether, 2-Hydroxyanisole



- C<sub>7</sub>H<sub>8</sub>O<sub>2</sub>
- M = 124.14 g/mol
- CAS [90-05-1]
- EC number: 201-964-7

**Physical data:**

- Form: Solid
- Density: 1.13 g/cm<sup>3</sup>
- Solub. in water (30 °C): 15 g/l
- Melting point: 28 - 32 °C
- Boiling point: 205 °C
- Flash point: 82 °C
- Ignition temp.: 750 °C
- Vapour pressure: (25 °C) 0.1 hPa

- pH (10 g/l H<sub>2</sub>O, 20 °C) 5.4

**Toxicological data:**

- LD 50 (oral, rat): 520 mg/kg
- WGK: 1

**Safety:**

- EC Index no.: 604-031-00-6
- R: 22-36/38
- S: 26-46
- VbF class: AllI
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 6.1 T1 III UN 2810
- IMDG: 6.1 III UN 2810
- IATA/ICAO: 6.1 III UN 2810
- PAX: 611
- CAO: 618
- LGK: 3 B

**G5000-1 Guaiacol, reagent grade**

HS-No: 2929 50 10 000

Assay .....	min. 99 %	Sulfated Ash .....	max. 0.05 %
Identity (IR-spectrum) .....	passes test	Water .....	max. 0.3 %

Code	Capacity
G5000-1-0101	100 ml



# Chemical list : H

## 1,6-HEXANEDIAMINE



Synonyms: 1,6-Hexanediamine, Hexamethylenediamine



- C<sub>6</sub>H<sub>16</sub>N<sub>2</sub>
- M = 116.2 g/mol
- CAS [124-09-4]
- EC number: 204-679-6

### Physical data:

- Vapour pressure 2 hPa (50 °C)
- Spec. density: 0.83 g/cm<sup>3</sup> (60 °C)
- Explosive limit: 0.9 - 7.6 Vol%
- Flash point: 85 °C
- Solub. in water: 490 g/l (20 °C)
- pH value 12 (100 g/l H<sub>2</sub>O, 20 °C)

- Melting point: 39 - 42 °C
- Boiling point: 199 - 204 °C
- Ignition temp.: 305 °C

### Toxicological data:

- LD 50 (oral, rat): 850 mg/kg
- WGK: 1

### Safety:

- EC Index no.: 612-104-00-9
- Harmful, corrosive
- Poison class (CH) 2

- R: 21/22-34-37
- S: 22-26-36/37/39-45

### Transport/storage:

- Packing-cat M
- Road/Rail: 8/52 c
- IMDG-Code: 8/III UN 2280
- IATA/DGR: 8 III UN 2280
- PAX: 822
- CAO: 823
- LGK: 8
- Disposal: 3

HS-No: 2921 22 00 00

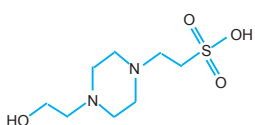
### H1001-1 1,6-Hexanediamine, reagent grade

Assay .....	min. 99 %
Melting range .....	39 - 42 °C
Identity (IR) .....	conforms

Code	Capacity
H1001-1-0500	500 g

## HEPES

Synonyms: 4-(2-Hydroxyethyl)-1-piperazineethanesulfonic acid, N-(2-Hydroxyethyl)-piperazine- N'-(2-ethanesulfonic acid)



- C<sub>8</sub>H<sub>18</sub>N<sub>2</sub>O<sub>4</sub>S
- M = 238.3 g/mol
- CAS [7365-45-9]
- EC number: 230-907-9

### Physical data:

- Form: Solid
- Bulk density: ~ 560 kg/m<sup>3</sup>
- Solub. in water (20 °C): 400 g/l
- Melting point: 210 - 215 °C
- pH (100 g/l H<sub>2</sub>O, 20 °C) 5.0 - 5.5

### Toxicological data:

- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 3

HS-No: 2933 59 95 00

### H2007-8 HEPES, high purity grade

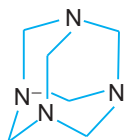
Assay .....	min. 99 %
pKa (20 °C) .....	7.55

Code	Capacity
H2007-8-0500	500 g

## HEXAMETHYLENETETRAMINE



Synonyms: Hexamine, Methenamine, Formin, Urotropin



- C<sub>6</sub>H<sub>12</sub>N<sub>4</sub>
- M = 140.19 g/mol
- CAS [100-97-0]
- EC number: 202-905-8

### Physical data:

- Form: Solid
- Spec. density: 1.33 g/cm<sup>3</sup>
- Bulk density: ~ 600 kg/m<sup>3</sup>
- Solub. in water (20 °C): 100 g/l
- pH (100 g/l H<sub>2</sub>O, 20 °C) 7.0 - 9.0

### Toxicological data:

- LD 50 (oral, rat): 9200 mg/kg
- WGK: 1

### Safety:

- EC Index no.: 612-101-00-2
- R: 11-42/43
- S: 16-22-24-37-45
- Poison class CH (Swiss): 5

### Transport/storage:

- ADR: 4.1 F1 III UN 1328
- IMDG: 4.1 III UN 1328
- IATA/ICAO: 4.1 III UN 1328
- PAX: 419
- CAO: 420
- LGK: 4.1 B
- Disposal: 3

HS-No: 2933 69 20 00

### H6001-1 Hexamethylenetetramine, reagent grade

Assay .....	min. 99 %	Chloride (Cl) .....	max. 0.001 %
pH value (100g/ml, 25 °C) .....	8.5 - 9.5	Sulfates (SO <sub>4</sub> ) .....	max. 0.001 %
Appearance of solution .....	passes test	Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %
Insolubility matter in water .....	max. 0.02 %	Iron (Fe) .....	max. 0.001 %
Residue after ignition (as Sulfate) ...	max. 0.01 %	Heavy metals (as Pb) .....	max. 0.0005 %

Code	Capacity
H6001-1-1000	1 kg

## HYDROCHLORIC ACID 20 %



Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

### Physical data:

- Form: Liquid
- Density: ~1.1 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: ~ -70 °C
- Boiling point: 107 °C
- Vapour pressure: (20 °C) 12 hPa
- pH (20 °C) < 1

### Toxicological data:

- MAK: 2ml/m<sup>3</sup>, 3.0 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 017-002-01-X
- R: 34-37
- S: 26-36/37/39-45
- Poison class CH (Swiss): 2

### Transport/storage:

- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- PAX: 809
- CAO: 813
- LGK: 8 B
- Disposal: 12

### Special regulations:

- Drug precursor, cat: 3

**H8000-1 Hydrochloric acid 20%, reagent grade**

HS-No: 2806 10 00 00

Assay .....	min. 20 %	Gallium (Ga) .....	max. 0.02 ppm
Colour .....	max. 10 Hazen	Indium (In) .....	max. 0.02 ppm
Bromide (Br) .....	max. 50 ppm	Potassium (K) .....	max. 0.1 ppm
Free Chlorine (Cl) .....	max. 0.5 ppm	Lithium (Li) .....	max. 0.02 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 0.5 ppm	Magnesium (Mg) .....	max. 0.1 ppm
Sulfate (SO <sub>4</sub> ) .....	max. 0.5 ppm	Manganese (Mn) .....	max. 0.02 ppm
Sulphite (SO <sub>3</sub> ) .....	max. 1 ppm	Molybdenum (Mo) .....	max. 0.05 ppm
Arsenic and Antimony (as As) .....	max. 0.01 ppm	Ammonium (NH <sub>4</sub> ) .....	max. 2 ppm
Silver (Ag) .....	max. 0.02 ppm	Sodium (Na) .....	max. 0.5 ppmg
Aluminium (Al) .....	max. 0.05 ppm	Nickel (Ni) .....	max. 0.02 ppm
Gold (Au) .....	max. 0.1 ppm	Lead (Pb) .....	max. 0.02 ppm
Boron (B) .....	max. 0.05 ppm	Platinum (Pt) .....	max. 0.2 ppm
Barium (Ba) .....	max. 0.05 ppm	Tin (Sn) .....	max. 0.1 ppm
Beryllium (Be) .....	max. 0.02 ppm	Strontium (Sr) .....	max. 0.1 ppm
bismuth (Bi) .....	max. 0.1 ppm	Titanium (Ti) .....	max. 0.1 ppm
Calcium (Ca) .....	max. 0.5 ppm	Thallium (Tl) .....	max. 0.05 ppm
Cadmium (Cd) .....	max. 0.05 ppm	Vanadium (V) .....	max. 0.05 ppm
Cobalt (Co) .....	max. 0.02 ppm	Zinc (Zn) .....	max. 0.1 ppm
Chromium (Cr) .....	max. 0.02 ppm	Zirconium (Zr) .....	max. 0.1 ppm
Copper (Cu) .....	max. 0.02 ppm	Residue after ignition (as sulfate) ....	max. 5 ppm
Iron (Fe) .....	max. 0.2 ppm		

Code	Capacity
H8000-1-1000	1.0 L

**H****HYDRAZINE HYDRATE, 60%**

Synonyms: Hydrazinium hydroxide

- N<sub>2</sub>H<sub>4</sub>·H<sub>2</sub>O
- M = 50.06 g/mol
- CAS [10217-52-4]
- EC number: 206-114-9

**Physical data:**

- Density: 1.03 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -60 °C
- Boiling point: 117 - 119 °C
- Flash point: 91 °C
- Ignition temp.: 310 °C
- Vapour pressure: (20 °C) 13 hPa

- Viscosity: (20 °C) 1.33 mPas
- Expl. limit (upper): 100 Vol%
- Expl. limit (lower): 4.7 Vol%
- pH (510 g/l H<sub>2</sub>O, 20 °C) > 12

**Toxicological data:**

- LD 50 (oral, rat): 129 mg/kg
- WGK: 3

**Safety:**

- R: 45-E23/24/25-34-43-50/53
- S: 53-26-36/37/39-45-60-61
- Poison class CH (Swiss): 1\*

**Transport/storage:**

- ADR: 8 CT1 II UN 2030
- IMDG: 8 II UN 2030
- IATA/ICAO: Forbidden UN 2030
- PAX: F
- CAO: 812
- LGK: 6.1 A
- Disposal: 9

**H8010-9 Hydrazine hydrate 60%, TG**

HS-No: 2825 10 00 00

Assay .....	min. 60.0 %	Copper (Cu) .....	max. 5 %
Specific Gravity (25 °C) .....	1.0190 g/cm <sup>3</sup>	Appearance .....	clear, colourless liquid
Viscosity (25 °C) .....	1.5 mPas	Solubility in water .....	completely soluble
Chloride (Cl) .....	max. 0.1 %		

Code	Capacity
H8010-9-920E	200 kg

**HYDRAZINE SULFATE**

Synonyms: Hydrazinium sulfate, Hydrazonium sulfate

- N<sub>2</sub>H<sub>4</sub>·H<sub>2</sub>SO<sub>4</sub>
- M = 130.12 g/mol
- CAS [10034-93-2]
- EC number: 233-110-4

**Physical data:**

- Form: Solid
- Spec. density: ~ 1.37 g/cm<sup>3</sup>
- Bulk density: ~ 450 kg/m<sup>3</sup>
- Solub. in water (20 °C): 30 g/l
- Melting point: 254 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C) 1.5

**Toxicological data:**

- LD 50 (oral, rat): 601 mg/kg
- WGK: 3

**Safety:**

- EC Index no.: 007-014-00-6
- R: 45-E23/24/25-43-50/53
- S: 53-36/37-45-60-61
- Poison class CH (Swiss): 1\*

**Transport/storage:**

- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288
- IATA/ICAO: 6.1 III UN 3288
- PAX: 619
- CAO: 619
- LGK: 6.1 B
- Disposal: 9

**H8014-1 Hydrazine sulfate, reagent grade**

HS-No: 2825 10 00 00

Assay .....	min. 99.0 %	Heavy metals (as Pb) .....	max. 0.0005 %
Insoluble in water .....	max. 0.005 %	Iron (Fe) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.0005 %	Sulfated Ash .....	max. 0.02 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.04 %		

Code	Capacity
H8014-1-0500	500 g

**HYDROCHLORIC ACID 37%**

Synonyms: Hydrogen chloride solution, Hydrochloric acid fuming

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**

- Density: ~ 1.19 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -28 °C
- Boiling point: ~ 50 °C

- Vapour pressure: (20 °C) 190 hPa
- pH (20 °C) < 1

**Toxicological data:**

- MAK: 5 ml/m<sup>3</sup>; 7.6 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 017-002-01-X
- R: 34-37

- S: 26-36/37/39-45
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 C1 II UN 1789
- IMDG: 8 II UN 1789
- IATA/ICAO: 8 II UN 1789
- PAX: 809
- CAO: 813
- LGK: 8 B
- Disposal: 12



**H8040-1 Hydrochloric acid 37%, reagent grade**

HS-No: 2806 10 00 00

Assay .....	37 ± 1.0 %	Gallium (Ga) .....	max. 0.02 ppm
Colour .....	max. 10 Hazen	Indium (In) .....	max. 0.02 ppm
Bromide (Br) .....	max. 50 ppm	Potassium (K) .....	max. 0.1 ppm
Free Chlorine (Cl) .....	max. 0.5 ppm	Lithium (Li) .....	max. 0.02 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 0.5 ppm	Magnesium (Mg) .....	max. 0.1 ppm
Sulfate (SO <sub>4</sub> ) .....	max. 0.5 ppm	Manganese (Mn) .....	max. 0.02 ppm
Sulphite (SO <sub>3</sub> ) .....	max. 1 ppm	Molybdenum (Mo) .....	max. 0.05 ppm
Arsenic and Antimony (as As) .....	max. 0.01 ppm	Ammonium (NH <sub>4</sub> ) .....	max. 2 ppm
Silver (Ag) .....	max. 0.02 ppm	Sodium (Na) .....	max. 0.5 ppm
Aluminium (Au) .....	max. 0.05 ppm	Nickel (Ni) .....	max. 0.02 ppm
Gold (Au) .....	max. 0.1 ppm	Lead (Pb) .....	max. 0.02 ppm
Boron (B) .....	max. 0.05 ppm	Platinum (Pt) .....	max. 0.2 ppm
Barium (Ba) .....	max. 0.05 ppm	Tin (Sn) .....	max. 0.1 ppm
Beryllium (Be) .....	max. 0.02 ppm	Strontium (Sr) .....	max. 0.1 ppm
Bismuth (Bi) .....	max. 0.1 ppm	Titanium (Ti) .....	max. 0.1 ppm
Calcium (Ca) .....	max. 0.5 ppm	Thallium (Tl) .....	max. 0.05 ppm
Cadmium (Cd) .....	max. 0.05 ppm	Vanadium (V) .....	max. 0.05 ppm
Cobalt (Co) .....	max. 0.02 ppm	Zinc (Zn) .....	max. 0.1 ppm
Chromium (Cr) .....	max. 0.02 ppm	Zirconium (Zr) .....	max. 0.1 ppm
Copper (Cu) .....	max. 0.02 ppm	Residue after ignition (as sulfate) ...	max. 5 ppm
Iron (Fe) .....	max. 0.2 ppm		

Code	Capacity
H8040-1-1000	1.0 L
H8040-1-2500	2.5 L
H8040-1-2501	2.5 L
H8040-1-4000	4.0 L

**H8040-3 Hydrochloric acid 37%, extra pure**

HS-No: 2806 10 00 00

Assay (acidimetric) .....	min. 36.5 %	Copper (Cu) .....	max. 0.0002 %
Free chloride (Cl) .....	max. 0.0001 %	Heavy metals (as Pb) .....	max. 0.0001 %
Bromides (Br) .....	max. 0.01 %	Iron (Fe) .....	max. 0.00005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.0001 %	Lead (Pb) .....	max. 0.0001 %
Sulfites (SO <sub>3</sub> ) .....	max. 0.0005 %	Nickel (Ni) .....	max. 0.0002 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.0005 %	Calcination residue (as SO <sub>4</sub> ) .....	max. 0.003 %
Arsenic (As) .....	max. 0.00005 %	Non volatile matter .....	max. 0.005 %

Code	Capacity
H8040-3-1000	1.0 L

**H8040-6 Hydrochloric acid 37%, EC-100**

HS-No: 2806 10 00 00

Assay .....	37 ± 1.0 %	Gallium (Ga) .....	max. 0.02 ppm
Colour .....	max. 10 Hazen	Indium (In) .....	max. 0.02 ppm
Free Chlorine (Cl) .....	max. 5.0 ppm	Lithium (Li) .....	max. 0.02 ppm
Sulfate (SO <sub>4</sub> ) .....	max. 0.5 ppm	Magnesium (Mg) .....	max. 0.1 ppm
Arsenic and Antimony (as As) .....	max. 0.1 ppm	Molybdenum (Mo) .....	max. 0.05 ppm
Aluminium (Au) .....	max. 0.1 ppm	Nickel (Ni) .....	max. 0.1 ppm
Boron (B) .....	max. 0.05 ppm	Lead (Pb) .....	max. 0.5 ppm
Barium (Ba) .....	max. 0.05 ppm	Platinum (Pt) .....	max. 0.2 ppm
Beryllium (Be) .....	max. 0.02 ppm	Strontium (Sr) .....	max. 0.1 ppm
Bismuth (Bi) .....	max. 0.5 ppm	Titanium (Ti) .....	max. 0.1 ppm
Calcium (Ca) .....	max. 0.5 ppm	Thallium (Tl) .....	max. 0.1 ppm
Cobalt (Co) .....	max. 0.02 ppm	Vanadium (V) .....	max. 0.1 ppm
Chromium (Cr) .....	max. 0.1 ppm	Zinc (Zn) .....	max. 0.1 ppm
Copper (Cu) .....	max. 0.1 ppm	Zirconium (Zr) .....	max. 0.1 ppm
Iron (Fe) .....	max. 0.2 ppm	Residue after ignition (as sulfate) ...	max. 5 ppm

Code	Capacity
H8040-6-2500	2.5 L

**H8040-6 Hydrochloric acid 37%, EC-100 (EL Grade)**

HS-No: 2806 10 00 00

Assay .....	36 ± 0.5 %	Gallium (Ga) .....	max. 20 ppb
Colour .....	max. 10 Hazen	Indium (In) .....	max. 20 ppb
Free Chlorine (Cl) .....	max. 0.5 ppm	Lithium (Li) .....	max. 20 ppb
Sulfate (SO <sub>4</sub> ) .....	max. 0.5 ppm	Magnesium (Mg) .....	max. 100 ppb
Arsenic and Antimony (as As) .....	max. 0.1 ppm	Molybdenum (Mo) .....	max. 50 ppb
Aluminium (Au) .....	max. 50 ppb	Nickel (Ni) .....	max. 20 ppb
Boron (B) .....	max. 50 ppb	Lead (Pb) .....	max. 20 ppb
Barium (Ba) .....	max. 50 ppb	Platinum (Pt) .....	max. 200 ppb
Beryllium (Be) .....	max. 20 ppb	Strontium (Sr) .....	max. 100 ppb
Bismuth (Bi) .....	max. 100 ppb	Titanium (Ti) .....	max. 100 ppb
Calcium (Ca) .....	max. 500 ppb	Thallium (Tl) .....	max. 50 ppb
Cobalt (Co) .....	max. 20 ppb	Vanadium (V) .....	max. 50 ppb
Chromium (Cr) .....	max. 20 ppb	Zinc (Zn) .....	max. 100 ppb
Copper (Cu) .....	max. 20 ppb	Zirconium (Zr) .....	max. 100 ppb
Iron (Fe) .....	max. 200 ppb	Residue after ignition (as sulfate) ...	max. 5 ppm

Code	Capacity
H8040-6-924E	240 kg

**H8040-7 Hydrochloric acid 37%, EC-10**

HS-No: 2806 10 00 00

Assay .....	36 ± 1.0 %	Cobalt (Co) .....	max. 0.1 ppb
Colour .....	max. 10 APHA	Chromium (Cr) .....	max. 0.1 ppb
Residue after ignition .....	max. 1 ppm	Copper (Cu) .....	max. 0.1 ppb
Ammonium Salt .....	max. 0.5 ppm	Iron (Fe) .....	max. 0.1 ppb
Bromide (Br) .....	max. 10 ppm	Potassium (K) .....	max. 0.1 ppb
Free Chlorine (Cl) .....	max. 0.5 ppm	Lithium (Li) .....	max. 0.1 ppb
Sulfate (SO <sub>4</sub> ) .....	max. 0.2 ppm	Magnesium (Mg) .....	max. 0.1 ppb
Sulphite (SO <sub>3</sub> ) .....	max. 0.5 ppm	Manganese (Mn) .....	max. 0.1 ppb
Arsenic (as As) .....	max. 1 ppb	Sodium (Na) .....	max. 0.1 ppb
Silver (Ag) .....	max. 0.1 ppb	Nickel (Ni) .....	max. 0.1 ppb
Aluminium (Al) .....	max. 0.1 ppb	Lead (Pb) .....	max. 0.1 ppb
Barium (Ba) .....	max. 0.1 ppb	Strontium (Sr) .....	max. 0.1 ppb
Calcium (Ca) .....	max. 0.1 ppb	Zinc (Zn) .....	max. 0.1 ppb
Cadmium (Cd) .....	max. 0.1 ppb	Particles 0.2µm upper .....	max. 200 /ml

Code	Capacity
H8040-7-2500	2.5 L
H8040-7-9020	20 kg

**H8040-7 Hydrochloric acid 37%, EC-10**

HS-No: 2806 10 00 00

Assay .....	min. 36 %	Magnesium (Mg) .....	max. 10 ppb
Colour .....	max. 10 APHA	Manganese (Mn) .....	max. 10 ppb
Free chlorine (Cl) .....	max. 500 ppb	Mercury (Hg) .....	max. 10 ppb
Residue .....	max. 1 ppm	Molybdenum (Mo) .....	max. 10 ppb
Sulfate (SO <sub>4</sub> ) .....	max. 500 ppb	Nickel (Ni) .....	max. 10 ppb
Aluminium (Al) .....	max. 10 ppb	Niobium (Nb) .....	max. 10 ppb
Antimony (Sb) .....	max. 10 ppb	Palladium (Pd) .....	max. 10 ppb
Arsenic (As) .....	max. 10 ppb	Platinum (Pt) .....	max. 10 ppb
Barium (Ba) .....	max. 10 ppb	Potassium (K) .....	max. 10 ppb
Beryllium (Be) .....	max. 10 ppb	Silver (Ag) .....	max. 10 ppb
Bismuth (Bi) .....	max. 10 ppb	Sodium (Na) .....	max. 10 ppb
Boron (B) .....	max. 10 ppb	Strontium (Sr) .....	max. 10 ppb
Cadmium (Cd) .....	max. 10 ppb	Tantalum (Ta) .....	max. 10 ppb
Calcium (Ca) .....	max. 10 ppb	Thallium (Tl) .....	max. 10 ppb
Chromium (Cr) .....	max. 10 ppb	Thorium (Th) .....	max. 10 ppb
Cobalt (Co) .....	max. 10 ppb	Tin (Sn) .....	max. 10 ppb
Copper (Cu) .....	max. 10 ppb	Titanium (Ti) .....	max. 10 ppb
Gallium (Ga) .....	max. 10 ppb	Tungsten (W) .....	max. 10 ppb
Germanium (Ge) .....	max. 10 ppb	Uranium (U) .....	max. 10 ppb
Gold (Au) .....	max. 10 ppb	Vanadium (V) .....	max. 10 ppb
Indium (In) .....	max. 10 ppb	Zinc (Zn) .....	max. 10 ppb
Iron (Fe) .....	max. 10 ppb	Zirconium (Zr) .....	max. 10 ppb
Lithium (Li) .....	max. 10 ppb		

Code	Capacity
H8040-7-9025	25 L

**H8040-8 Hydrochloric acid 37%, EC-1**

HS-No: 2806 10 00 00

Assay .....	min. 36 %	Magnesium (Mg) .....	max. 1 ppb
Colour .....	max. 10 APHA	Manganese (Mn) .....	max. 1 ppb
Free chlorine (Cl) .....	max. 500 ppb	Mercury (Hg) .....	max. 1 ppb
Residue .....	max. 1 ppm	Molybdenum (Mo) .....	max. 1 ppb
Sulfate (SO <sub>4</sub> ) .....	max. 500 ppb	Ammonium (NH <sub>4</sub> ) .....	max. 1000 ppb
Phosphates (PO <sub>4</sub> ) .....	max. 50 ppb	Nickel (Ni) .....	max. 1 ppb
Aluminium (Al) .....	max. 1 ppb	Niobium (Nb) .....	max. 1 ppb
Antimony (Sb) .....	max. 1 ppb	Palladium (Pd) .....	max. 1 ppb
Arsenic (As) .....	max. 1 ppb	Platinum (Pt) .....	max. 1 ppb
Barium (Ba) .....	max. 1 ppb	Potassium (K) .....	max. 1 ppb
Beryllium (Be) .....	max. 1 ppb	Silver (Ag) .....	max. 1 ppb
Bismuth (Bi) .....	max. 1 ppb	Sodium (Na) .....	max. 1 ppb
Boron (B) .....	max. 1 ppb	Strontium (Sr) .....	max. 1 ppb
Bromides (Br) .....	max. 1000 ppb	Tantalum (Ta) .....	max. 1 ppb
Cadmium (Cd) .....	max. 1 ppb	Thallium (Tl) .....	max. 1 ppb
Calcium (Ca) .....	max. 1 ppb	Thorium (Th) .....	max. 1 ppb
Chromium (Cr) .....	max. 1 ppb	Tin (Sn) .....	max. 1 ppb
Cobalt (Co) .....	max. 1 ppb	Titanium (Ti) .....	max. 1 ppb
Copper (Cu) .....	max. 1 ppb	Tungsten (W) .....	max. 1 ppb
Gallium (Ga) .....	max. 1 ppb	Uranium (U) .....	max. 1 ppb
Germanium (Ge) .....	max. 1 ppb	Vanadium (V) .....	max. 1 ppb
Gold (Au) .....	max. 1 ppb	Zinc (Zn) .....	max. 1 ppb
Indium (In) .....	max. 1 ppb	Zirconium (Zr) .....	max. 1 ppb
Iron (Fe) .....	max. 1 ppb	Substance reducing iodine (as SO <sub>3</sub> ) .....	max. 500 ppb
Lead (Pb) .....	max. 1 ppb	Particles (>0.2 µm) .....	max. 300 pcs/ml
Lithium (Li) .....	max. 1 ppb		

Code	Capacity
H8040-8-9020	20 kg
H8040-8-9025	25 L

**H8040-10 Hydrochloric acid 37%, selective grade**

HS-No: 2806 10 00 00

Assay .....min. 36.5 %	Iron (Fe) .....max. 0.2 ppm
Colour .....max. 10 Hazen	Gallium (Ga) .....max. 0.01 ppm
Ammonium .....max. 2 ppm	Indium (In) .....max. 0.01 ppm
Free Chlorine (Cl) .....max. 1 ppm	Lithium (Li) .....max. 0.01 ppm
Phosphate (PO <sub>4</sub> ) .....max. 1 ppm	Magnesium (Mg) .....max. 0.1 ppm
Sulfate (SO <sub>4</sub> ) .....max. 1 ppm	Molybdenum (Mo) .....max. 0.02 ppm
Arsenic and Antimony (as As) .....max. 0.01 ppm	Nickel (Ni) .....max. 0.02 ppm
Aluminium (Al) .....max. 0.01 ppm	Lead (Pb) .....max. 0.01 ppm
Boron (B) .....max. 0.1 ppm	Platinum (Pt) .....max. 0.2 ppm
Barium (Ba) .....max. 0.01 ppm	Strontium (Sr) .....max. 0.01 ppm
Beryllium (Be) .....max. 0.02 ppm	Titanium (Ti) .....max. 0.1 ppm
Bismuth (Bi) .....max. 0.1 ppm	Thallium (Tl) .....max. 0.05 ppm
Calcium (Ca) .....max. 0.5 ppm	Vanadium (V) .....max. 0.1 ppm
Cobalt (Co) .....max. 0.01 ppm	Zinc (Zn) .....max. 0.1 ppm
Chromium (Cr) .....max. 0.01 ppm	Zirconium (Zr) .....max. 0.05 ppm
Copper (Cu) .....max. 0.01 ppm	Residue after ignition (as Sulfate) .....max. 5 ppm

Code	Capacity
H8040-10-924E	240 kg

**HYDROCHLORIC ACID, VOLUMETRIC SOLUTIONS****H8050-0 Hydrochloric acid solution 0.01 mol/l (0.01 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: 0.99 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 0

**Safety:**  
- EC Index no.: 017-002-01-X  
- Poison class CH (Swiss): 5

**Transport/storage:**  
- LGK: 8 B

1 ml = 0.0003646 g HCl

Code	Capacity
H8050-0-1000	1.0 L

**H8051-0 Hydrochloric acid solution 0.05 mol/l (0.05 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: 0.99 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 0

**Safety:**  
- EC Index no.: 017-002-01-X  
- Poison class CH (Swiss): 5

**Transport/storage:**  
- LGK: 8 B

1 ml = 0.0018235 g HCl

Code	Capacity
H8051-0-1000	1.0 L

**H8052-0 Hydrochloric acid solution 0.1 mol/l (0.1 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: 1.00 g/cm<sup>3</sup>

- pH (20 °C) 1.2

**Toxicological data:**  
- WGK: 0

**Safety:**  
- EC Index no.: 017-002-01-X  
- Poison class CH (Swiss): 5

**Transport/storage:**  
- LGK: 8 B

1 ml = 0.003646 g HCl

Code	Capacity
H8052-0-1000	1.0 L

**H8055-0 Hydrochloric acid solution 0.125 mol/l (0.125 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: 0.99 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 0

**Safety:**  
- EC Index no.: 017-002-01-X  
- Poison class CH (Swiss): 5

**Transport/storage:**  
- LGK: 8 B

1 ml = 0.004557 g HCl

Code	Capacity
H8055-0-1000	1.0 L

**H8058-0 Hydrochloric acid solution 0.2 mol/l (0.2 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: ~ 1.01 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 0

**Safety:**  
- EC Index no.: 017-002-01-X  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- LGK: 8 B

1 ml = 0.007292 g HCl

Code	Capacity
H8058-0-1000	1.0 L

**H8059-0 Hydrochloric acid solution 0.25 mol/l (0.25 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: 1.00 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 0

**Safety:**  
- EC Index no.: 017-002-01-X  
- Poison class CH (Swiss): 5

**Transport/storage:**  
- LGK: 8 B

1 ml = 0.009115 g HCl

Code	Capacity
H8059-0-1000	1.0 L

**H8062-0 Hydrochloric acid solution 0.5 mol/l (0.5 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: 1.01 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 0

**Safety:**

- EC Index no.: 017-002-01-X
- Poison class CH (Swiss): 4

**Transport/storage:**

- LGK: 8 B

1 ml = 0.0018235 g HCl

Code	Capacity
H8062-0-1000	1.0 L

**H8065-0 Hydrochloric acid solution 1 mol/l (1 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: 1.02 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 017-002-01-X
- Poison class CH (Swiss): 3

**Transport/storage:**

- LGK: 8 B

1 ml = 0.003646 g HCl

Code	Capacity
H8065-0-1000	1.0 L

**H8068-0 Hydrochloric acid solution 1.4 mol/l (1.4 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: 1.02 g/cm<sup>3</sup>  
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 017-002-01-X
- Poison class CH (Swiss): 3

**Transport/storage:**

- PAX: 809
- CAO: 813
- LGK: 8 B

1 ml = 0.05104 g HCl

Code	Capacity
H8068-0-1000	1.0 L

**H8071-0 Hydrochloric acid solution 2 mol/l (2 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: ~1.03 g/cm<sup>3</sup>  
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 017-002-01-X
- Poison class CH (Swiss): 3

**Transport/storage:**

- PAX: 809
- CAO: 813
- LGK: 8 B

1 ml = 0.07292 g HCl

Code	Capacity
H8071-0-1000	1.0 L

**H8072-0 Hydrochloric acid solution 3 mol/l (3 N)**

HS-No: 2806 10 00 00

Synonyms; Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: ~1.06 g/cm<sup>3</sup>  
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 017-002-01-X
- R: 36/37/38
- S: 26-37
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 8 C1 II UN 1789
- CAO: 8 II UN 1789
- LGK: 8 II UN 1789
- PAX: 809
- CAO: 813
- LGK: 8 B

1 ml = 0.10938 g HCl

Code	Capacity
H8072-0-1000	1.0 L

**H8073-0 Hydrochloric acid solution 5 mol/l (5 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: 1.08 g/cm<sup>3</sup>  
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 017-002-01-X
- R: 36/37/38
- S: 26-37
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 8 C1 II UN 1789
- CAO: 8 II UN 1789
- LGK: 8 II UN 1789
- PAX: 809
- CAO: 813
- LGK: 8 B

1 ml = 0.18235 g HCl

Code	Capacity
H8073-0-1000	1.0 L

**H8074-0 Hydrochloric acid solution 6 mol/l (6 N)**

HS-No: 2806 10 00 00

Synonyms: Hydrogen chloride solution

- HCl
- M = 36.46 g/mol
- CAS [7647-01-0]
- EC number: 231-595-7

**Physical data:**  
- Density: 1.09 g/cm<sup>3</sup>  
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 017-002-01-X
- R: 36/37/38
- S: 26-37
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 8 C1 II UN 1789
- CAO: 8 II UN 1789
- LGK: 8 II UN 1789
- PAX: 809
- CAO: 813
- LGK: 8 B

1 ml = 0.21876 g HCl

Code	Capacity
H8074-0-1000	1.0 L

## HYDROFLUORIC ACID 40%



### Synonyms:

- HF
  - M = 20.01 g/mol
  - CAS [7664-39-3]
  - EC number: 231-634-8
- pH (20 °C) < 1

### Physical data:

- Form: Liquid
- Density: 1.13 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: ~ -44 °C
- Boiling point: ~ -112 °C

### Toxicological data:

- MAK: 2 ml/m<sup>3</sup>, 1.7 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 009-002-00-6
- R: 26/27/28-35
- S: 7/9-26-28.1-36/37/39-45
- Poison class CH (Swiss): 1

### Transport/storage:

- ADR: 8 CT1 II UN 1790
- IMDG: 8 II UN 1790
- IATA/ICAO: 8 II UN 1790
- PAX: 809
- CAO: 813
- LGK: 6.1 B
- Disposal: 23

### Special regulations:

- Dual use product

### H8076-1 Hydrofluoric acid 40%, reagent grade

HS-No: 2811 11 00 00

Assay (acidimetric) .....	min. 40 %	Heavy metals (as Pb) .....	max. 0.0001 %
Colour (Hazen) .....	max. 10 %	Iron (Fe) .....	max. 0.00001 %
Hexafluorosilicic acid (H <sub>2</sub> SiF <sub>6</sub> ) .....	max. 0.005 %	Lead (Pb) .....	max. 0.000002 %
Chlorides (Cl) .....	max. 0.0001 %	Lithium (Li) .....	max. 0.000002 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.00005 %	Magnesium (Mg) .....	max. 0.000001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.0002 %	Manganese (Mn) .....	max. 0.000003 %
Sulfites (SO <sub>3</sub> ) .....	max. 0.0002 %	Molybdenum (Mo) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.000005 %	Nickel (Ni) .....	max. 0.000002 %
Arsenic (As) .....	max. 0.000005 %	Potassium (K) .....	max. 0.000001 %
Barium (Ba) .....	max. 0.000005 %	Silver (Ag) .....	max. 0.000002 %
Beryllium (Be) .....	max. 0.000002 %	Sodium (Na) .....	max. 0.000002 %
Bismuth (Bi) .....	max. 0.000002 %	Strontium (Sr) .....	max. 0.000002 %
Cadmium (Cd) .....	max. 0.000001 %	Titanium (Ti) .....	max. 0.000002 %
Calcium (Ca) .....	max. 0.00002 %	Thallium (Tl) .....	max. 0.000002 %
Chromium (Cr) .....	max. 0.000002 %	Vanadium (V) .....	max. 0.000002 %
Cobalt (Co) .....	max. 0.000002 %	Zinc (Zn) .....	max. 0.000005 %
Copper (Cu) .....	max. 0.000002 %	Zirconium (Zr) .....	max. 0.000002 %
Germanium (Ge) .....	max. 0.000002 %	Sulfated ash .....	max. 0.0005 %

Code	Capacity
H8076-1-2500	2.5 L

H

## HYDROFLUORIC ACID 49%



### Synonyms:

- HF
- M = 20.00 g/mol
- CAS [7664-39-3]
- EC number: 231-634-8

### Physical data:

- Form: Liquid
- Density: 1.16 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: ~ -35 °C
- Boiling point: ~ -106 °C
- pH (20 °C) < 1

### Toxicological data:

- MAK: 2 ml/m<sup>3</sup>, 1.7 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 009-002-00-6
- R: 26/27/28-35
- S: 7/9-26-28.1-36/37/39-45
- Poison class CH (Swiss): 1

### Transport/storage:

- ADR: 8 CT1 II UN 1790
- IMDG: 8 II UN 1790
- IATA/ICAO: 8 II UN 1790
- PAX: 809
- CAO: 813
- LGK: 6.1 B
- Disposal: 23

### Special regulations:

- Dual use product

### H8081-1 Hydrofluoric acid 49%, reagent grade

HS-No: 2811 11 00 00

Assay (acidimetric) .....	min. 48 %	Chromium (Cr) .....	max. 0.000002 %
Colour (Hazen) .....	max. 10 %	Iron (Fe) .....	max. 0.00001 %
Calcination residue (as SO <sub>4</sub> ) .....	max. 0.0005 %	Germanium (Ge) .....	max. 0.000002 %
Chlorides (Cl) .....	max. 0.0001 %	Potassium (K) .....	max. 0.000001 %
Hexafluorosilicic acid (H <sub>2</sub> SiF <sub>6</sub> ) .....	max. 0.005 %	Lithium (Li) .....	max. 0.000002 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.00005 %	Magnesium (Mg) .....	max. 0.000001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.0002 %	Manganese (Mn) .....	max. 0.000003 %
Sulfites (SO <sub>3</sub> ) .....	max. 0.0002 %	Molybdenum (Mo) .....	max. 0.000002 %
Silver (Ag) .....	max. 0.000002 %	Sodium (Na) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.000005 %	Nickel (Ni) .....	max. 0.000002 %
Arsenic (As) .....	max. 0.000005 %	Lead (Pb) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.000001 %	Strontium (Sr) .....	max. 0.000002 %
Beryllium (Be) .....	max. 0.000002 %	Titanium (Ti) .....	max. 0.000002 %
Bismuth (Bi) .....	max. 0.000002 %	Thallium (Tl) .....	max. 0.000002 %
Calcium (Ca) .....	max. 0.000001 %	Vanadium (V) .....	max. 0.000002 %
Cadmium (Cd) .....	max. 0.000001 %	Zinc (Zn) .....	max. 0.000005 %
Cobalt (Co) .....	max. 0.000002 %	Zirconium (Zr) .....	max. 0.000002 %

Code	Capacity
H8081-1-2500	2.5 L

## HYDROFLUORIC ACID 49%



### Synonyms:

- HF
- M = 20.01 g/mol
- CAS [7664-39-3]
- EC number: 231-634-8

### Physical data:

- Density: 1.13 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: ~ -44 °C
- Boiling point: ~ -112 °C
- pH (20 °C) < 1

### Toxicological data:

- MAK: 3 ml/m<sup>3</sup>, 2.5 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 009-002-00-6
- R: 26/27/28-35
- S: 7/9-26-28.1-36/37/39-45
- Poison class CH (Swiss): 1

### Transport/storage:

- ADR: 8 CT1 II UN 1790
- IMDG: 8 II UN 1790
- IATA/ICAO: 8 II UN 1790
- PAX: 809
- CAO: 813
- LGK: 6.1 B
- Disposal: 23



### H8081-7 Hydrofluoric acid 49%, EC-10

HS-No: 2811 11 00 00

	Guarantee	Result		Guarantee	Result
Assay (HF) .....	48.8 - 49.2	49.0 %	Gold (Au) .....	max. 5	0.1 ppb
Colour .....	max. 6	< 6 APHA	Iron (Fe) .....	max. 10	0.05 ppb
Residue after Ignition .....	max. 800	50 ppb	Lead (Pb) .....	max. 10	0.05 ppb
Chlorides (Cl) .....	max. 1000	50 ppb	Lithium (Li) .....	max. 5	0.1 ppb
Phosphates (PO <sub>4</sub> ) .....	max. 400	50 ppb	Magnesium (Mg) .....	max. 10	0.05 ppb
Sulfate (SO <sub>4</sub> ) and Sulfite (SO <sub>3</sub> ).....	max. 500	50 ppb	Manganese (Mn) .....	max. 10	0.05 ppb
Nitrate (NO) .....	max. 1000	50 ppb	Molybdenum (Mo) .....	max. 10	0.05 ppb
Arsenic and Antimony (as As) .....	max. 10	0.05 ppb	Nickel (Ni) .....	max. 10	0.05 ppb
Aluminium (Al) .....	max. 10	0.05 ppb	Potassium (K) .....	max. 10	0.05 ppb
Barium (Ba) .....	max. 5	0.1 ppb	Niobium (Nb) .....	max. 10	0.05 ppb
Beryllium (Be) .....	max. 5	0.1 ppb	Silver (Ag) .....	max. 5	0.1 ppb
Bismuth (Bi) .....	max. 5	0.1 ppb	Sodium (Na) .....	max. 10	0.05 ppb
Boron (B) .....	max. 10	0.05 ppb	Strontium (Sr) .....	max. 10	0.05 ppb
Cadmium (Cd) .....	max. 10	0.05 ppb	Tantalum (Ta) .....	max. 10	0.05 ppb
Calcium (Ca) .....	max. 10	0.05 ppb	Thallium (Tl) .....	max. 10	0.05 ppb
Chromium (Cr) .....	max. 10	0.05 ppb	Tin (Sn) .....	max. 10	0.1 ppb
Cobalt (Co) .....	max. 10	0.05 ppb	Titanium (Ti) .....	max. 10	0.1 ppb
Copper (Cu) .....	max. 10	0.05 ppb	Vanadium (V) .....	max. 10	0.05 ppb
Gallium (Ga) .....	max. 10	0.05 ppb	Zinc (Zn) .....	max. 10	0.05 ppb
Germanium (Ge) .....	max. 10	0.05 ppb	Zirconium (Zr) .....	max. 10	0.05 ppb

Code	Capacity
H8081-7-2500	2.5 L
H8081-7-920E	200 L

### HYDROGEN PEROXIDE 6%



Synonyms: Hydrogen dioxide, Hydroperoxide

- H<sub>2</sub>O<sub>2</sub>  
 - M = 34.01 g/mol  
 - CAS [7722-84-1]  
 - EC number: 231-765-0

#### Physical data

- Form: Liquid  
 - Density: 1.016 g/cm<sup>3</sup>

#### Safety:

- EC Index no.: 008-003-00-9  
 - R: 36  
 - S: 26-37

#### Toxicological data:

- LD 50 (oral, rat): 2000 mg/kg  
 (90% solution)

### H8084-3 Hydrogen Peroxide 6%, extra pure

HS-No: 2847 00 00 00

Assay (permanganometric) .....	approx. 6 %	Arsenic (As) .....	max. 0.00005 %
Acidity (as H <sub>2</sub> SO <sub>4</sub> ) .....	max. 0.05 %	Copper (Cu) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.001 %	Iron (Fe) .....	max. 0.0001 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.001 %	Lead (Pb) .....	max. 0.001 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.001 %	Non-volatile matter .....	max. 0.05 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %		

Code	Capacity
H8084-3-0500	500 ml

### HYDROGEN PEROXIDE 30%



Synonyms: Perhydrol

- H<sub>2</sub>O<sub>2</sub>  
 - M = 34.01 g/mol  
 - CAS [7722-84-1]  
 - EC number: 231-765-0

#### Physical data:

- Density: 1.11 g/cm<sup>3</sup>  
 - Solub. in water (20 °C): miscible  
 - Melting point: -26 °C  
 - Boiling point: 107 °C  
 - Vapour pressure: (20 °C) ~ 18 hPa  
 - pH (20 °C): 2 - 4

#### Toxicological data:

- LD 50 (oral, rat): 2000 mg/kg  
 (90% solution)  
 - MAK: 1 ml/m<sup>3</sup>, 1.4 mg/m<sup>3</sup>  
 - WGK: 0

#### Safety:

- EC Index no.: 008-003-00-9  
 - R: 34  
 - S: 3-26-36/37/39-45  
 - Poison class CH (Swiss): 3

#### Transport/storage:

- ADR: 5.1 OC1 II UN 2014  
 - IMDG: 5.1 II UN 2014  
 - IATA/ICAO: 5.1 II UN 2014  
 - PAX: 501  
 - CAO: 506  
 - LGK: 5.1 B  
 - Disposal: 22

### H8087-1 Hydrogen peroxide 30-32%, reagent grade

HS-No: 2847 00 00 00

Assay (permanganometric) .....	min. 30 %	Iron (Fe) .....	max. 0.000005 %
Colour .....	max. 10 Hazen	Lead (Pb) .....	max. 0.000001 %
Free acid (as H <sub>2</sub> SO <sub>4</sub> ) .....	max. 0.005 %	Lithium (Li) .....	max. 0.000001 %
Chlorides (Cl) .....	max. 0.00005 %	Magnesium (Mg) .....	max. 0.000005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0001 %	Manganese (Mn) .....	max. 0.000001 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.0001 %	Molybdenum (Mo) .....	max. 0.000002 %
Total N .....	max. 0.0002 %	Nickel (Ni) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.00005 %	Potassium (K) .....	max. 0.00001 %
Arsenic (As) .....	max. 0.000001 %	Sodium (Na) .....	max. 0.00001 %
Barium (Ba) .....	max. 0.000005 %	Strontium (Sr) .....	max. 0.000001 %
Beryllium (Be) .....	max. 0.000001 %	Thallium (Tl) .....	max. 0.000005 %
Bismuth (Bi) .....	max. 0.00001 %	Titanium (Ti) .....	max. 0.00001 %
Calcium (Ca) .....	max. 0.00002 %	Vanadium (V) .....	max. 0.000001 %
Cadmium (Cd) .....	max. 0.000001 %	Zinc (Zn) .....	max. 0.000005 %
Chromium (Cr) .....	max. 0.000002 %	Zirconium (Zr) .....	max. 0.00001 %
Cobalt (Co) .....	max. 0.000001 %	Residue on ignition .....	max. 0.002 %
Copper (Cu) .....	max. 0.000001 %	Non-volatile matter .....	max. 0.005 %
Germanium (Ge) .....	max. 0.000005 %		

Code	Capacity
H8087-1-1000	1.0 L
H8087-1-2500	2.5 L



### H8087-3 Hydrogen peroxide 30%, extra pure

HS-No: 2847 00 00 00

Assay (permanganometric) .....	approx. 30 %
Acidity (as H <sub>2</sub> SO <sub>4</sub> ) .....	max. 0.025 %
Chlorides (Cl) .....	max. 0.001 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.001 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.001 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %

Arsenic (As) .....	max. 0.00005 %
Copper (Cu) .....	max. 0.001 %
Heavy metals (as Pb) .....	max. 0.0005 %
Iron (Fe) .....	max. 0.0001 %
Nickel (Ni) .....	max. 0.001 %
Non-volatile matter .....	max. 0.02 %

Code	Capacity
H8087-3-2500	2.5 L



### HYDROGEN PEROXIDE 35%

Synonyms: *Perhydrol*

- H<sub>2</sub>O<sub>2</sub>
- M = 34.01 g/mol
- CAS [7722-84-1]
- EC number: 231-765-0

**Physical data:**

- Density: 1.13 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: ~ -24 °C
- Boiling point: ~ 110 °C

- Vapour pressure: (20 °C) ~ 20 hPa
- pH (20 °C): 2 - 4

**Toxicological data:**

- MAK: 1 ml/m<sup>3</sup>, 1.4 mg/m<sup>3</sup>
- WGK: 0

**Safety:**

- EC Index no.: 008-003-00-9
- R: 34

- S: 3-26-36/37/39-45
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 5.1 OC1 II UN 2014
- IMDG: 5.1 II UN 2014
- IATA/ICAO: 5.1 II UN 2014
- PAX: 501
- CAO: 506
- LGK: 5.1 B
- Disposal: 22

H

### H8089-3 Hydrogen peroxide 35%, extra pure

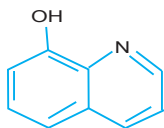
HS-No: 2847 00 00 00

Assay (permanganometric) .....	34.5 - 36.5 %
Free acid (as H <sub>2</sub> SO <sub>4</sub> ) .....	max. 0.02 %
Chlorides (Cl) .....	max. 0.001 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.001 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.001 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.003 %

Arsenic (As) .....	max. 0.00005 %
Copper (Cu) .....	max. 0.001 %
Heavy metals (as Pb) .....	max. 0.0002 %
Iron (Fe) .....	max. 0.0005 %
Nickel (Ni) .....	max. 0.001 %
Non-volatile matter .....	max. 0.05 %

Code	Capacity
H8089-3-1000	1.0 L

### 8-HYDROXYQUINOLINE

Synonyms: *Oxine, 8-Quinolinol, Hydroxybenzopyridine*

- C<sub>9</sub>H<sub>7</sub>NO
- M = 145.16 g/mol
- CAS [148-2-3]
- EC number: 205-711-1

**Physical data:**

- Form: Solid
- Solub. in water (20 °C): insoluble
- Melting point: 73.8 °C
- Boiling point: 267 °C

**Toxicological data:**

- LD 50 (oral, rat): 1200 mg/kg
- WGK: 3

**Safety:**

- R: 20/22
- S: 46
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 6.1 T2 III UN 2811
- IMDG: 6.1 III UN 2811
- IATA/ICAO: 6.1 III UN 2811
- PAX: 619
- CAO: 619
- LGK: 10-13
- Disposal: 3

### H8090-1 8-Hydroxyquinoline, reagent grade

HS-No: 2933 49 90 90

Assay .....	min. 99.5 %
Melting point .....	73 ~ 74.5 °C
Sensitivity test to magnesium .....	passes test
Solubility test in ethanol .....	passes test

Residue after ignition (as sulfate) ...	max. 0.02 %
Chloride (Cl) .....	max. 0.002 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.01 %

Code	Capacity
H8090-1-0100	100 g

### HYDROGEN PEROXIDE 50%

Synonyms: *Hydrogen dioxide, Hydroperoxide*

- H<sub>2</sub>O<sub>2</sub>
- M = 34.01 g/mol
- CAS [7722-84-1]
- EC number: 231-765-0

**Physical data:**

- Form: Liquid
- Density: 1.20 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -52 °C

- Boiling point: 114 °C
- Vapour pressure: (30 °C) 240 hPa
- pH (20 °C): 1.0 - 4.0

**Toxicological data:**

- LD 50 (oral, rat): 1518 mg/kg
- WGK: 0

**Safety:**

- EC Index no.: 008-003-00-9
- R: 8-20/22-34

- S: 17-26-28.1-36/37/39-45
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 5.1 OC1 II UN 2014
- IMDG: 5.1 II UN 2014
- IATA/ICAO: Forbidden UN 2014
- PAX: F
- CAO: F
- LGK: 5.1 B
- Disposal: 22

### H8090-3 Hydrogen peroxide 50%, extra pure

HS-No: 2847 00 00 00

Assay (permanganometric) .....	approx. 50 %
Acidity (as H <sub>2</sub> SO <sub>4</sub> ) .....	max. 0.05 %
Chlorides (Cl) .....	max. 0.001 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.001 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.001 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.003 %

Arsenic (As) .....	max. 0.00005 %
Copper (Cu) .....	max. 0.001 %
Iron (Fe) .....	max. 0.0005 %
Lead (Pb) .....	max. 0.001 %
Nickel (Ni) .....	max. 0.001 %
Non-volatile matter .....	max. 0.05 %

Code	Capacity
H8090-3-4000	4.0 L

## HYDROQUINONE



Synonyms: 1,4-Dihydroxybenzene, p-Dihydroxybenzene, Quinol



- C<sub>6</sub>H<sub>6</sub>O<sub>2</sub>
- M = 110.11 g/mol
- CAS [123-31-9]
- EC number: 204-617-8

### Physical data:

- Form: Solid
- Spec. density: 1.35 g/cm<sup>3</sup>
- Bulk density: ~ 600 kg/m<sup>3</sup>
- Solub. in water (25 °C): 70 g/l
- Melting point: -172 °C
- Boiling point: 287 °C

- Flash point: 165 °C
- Ignition temp.: 516 °C
- Vapour pressure: (132 °C) 1.3 hPa
- pH (70 g/l H<sub>2</sub>O, 20 °C) 3.75

### Toxicological data:

- LD 50 (oral, rat): 320 mg/kg
- WGK: 2

### Safety:

- EC Index no.: 604-005-00-4
- R: 22-40-41-43-50-68
- S: 26-36/37/39-46-61
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 6.1 T2 III UN 2662
- IMDG: 6.1 III UN 2662
- IATA/ICAO: 6.1 III UN 2662
- PAX: 619
- CAO: 619
- LGK: 10-13
- Disposal: 3

### H8097-3 Hydroquinone, extra pure

Assay ..... min. 99 %  
Identity (IR-spectrum) ..... passes test

Sulfated ash ..... max. 0.05 %  
Water ..... max. 0.3 %

HS-No: 2907 22 00 10

Code	Capacity
H8097-3-0500	500g

## HYDROXYLAMINE HYDROCHLORIDE



Synonyms: Hydroxylammonium chloride

- NH<sub>2</sub>OH·HCl
- M = 69.49 g/mol
- CAS [5470-11-1]
- EC number: 226-798-2

### Physical data:

- Spec. density: 1.67 g/cm<sup>3</sup>
- Bulk density: ~ 900 kg/m<sup>3</sup>
- Solub. in water (25 °C): 464 g/l
- Melting point: 159 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 2.5 - 3.5

### Toxicological data:

- LD 50 (oral, rat): 141 mg/kg
- WGK: 3\*

### Safety:

- EC Index no.: 612-123-00-2 [1]
- R: 22-36/38-43-48/22-50
- S: 22-24-37-46-61
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 8 C2 III UN 3260
- IMDG: 8 III UN 3260
- IATA/ICAO: 8 III UN 3260
- PAX: 822
- CAO: 823
- LGK: 4.1 A
- Disposal: 28

### H8099-1 Hydroxylamine hydrochloride, reagent grade

Assay (argentometric) ..... min. 99 %  
pH (5%, H<sub>2</sub>O) ..... 2.5 - 3.5  
Sulfates (SO<sub>4</sub>) ..... max. 0.002 %  
Ammonium (NH<sub>4</sub>) ..... max. 0.05 %  
Arsenic (As) ..... max. 0.0005 %

Copper (Cu) ..... max. 0.0005 %  
Heavy metals (as Pb) ..... max. 0.0005 %  
Iron (Fe) ..... max. 0.0005 %  
Calcination residue (as SO<sub>4</sub>) ..... max. 0.01 %

HS-No: 2825 10 00 00

Code	Capacity
H8099-1-0500	500 ml



# Chemical list : I

## IRON STANDARD SOLUTION 1000MG/L FOR AA



I1001-0 Iron standard solution 1000mg/l for AA (iron (III) nitrate nonahydrate in nitric acid 0.5 mol/l)

HS-No: 3822 00 00 00

Synonyms:

### Physical data:

- Density: ~ 1.02 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- pH (20 °C) < 1

### Safety:

- R: 36/38
- S: 26-37
- Poison class CH (Swiss): 3
- IATA/ICAO: 8 III UN 3264
- PAX: 818
- CAO: 820
- LGK: 8 B

Code	Capacity
I1001-0-0500	500 ml

### Transport/storage:

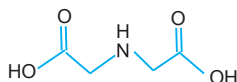
- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- 1 ml = 1000±5 mg/l

## IMINODIACETIC ACID



Synonyms:

- C<sub>4</sub>H<sub>7</sub>NO<sub>4</sub>
- M = 133.10 g/mol
- CAS [142-73-4]
- EC number: 205-555-4



### Physical data:

- Solub. in water 42 g/l (20 °C)
- M = 133.10 g/mol
- pH value: 2.2 - 2.3 (20 °C) (saturated solution)
- Melting point: 247 °C (decomposes)

### Toxicological data:

- WGK: 1

### Safety:

- Irritant
- R: 36
- S: 22-24-26
- Poison class CH (Swiss): 3

### Transport/storage:

- Packing-cat: E
- Road/Rail: 8/39 b
- IMDG-Code: 8/II UN 3261
- IATA/DGR: 8/II UN 3261
- PAX: 814
- CAO: 816
- LGK: 8
- Disposal: 4

### I5001-1 Iminodiacetic acid, reagent grade

HS-No: 2922 49 70 00

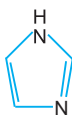
Assay ..... min. 98.5 %  
Melting point ..... ~ 240 °C

Loss on drying at 110 °C ..... max. 0.2 %  
Sulphated ash ..... max. 0.05 %

Code	Capacity
I5001-1-0100	100 g

## IMIDAZOLE

Synonyms: 1,3-Diazole, Glyoxaline, Iminazole



### Physical data:

- Form: Solid
- Spec. density: 1.030 g/cm<sup>3</sup>
- Bulk density: ~ 500 - 600 g/m<sup>3</sup>
- Solub. in water (20 °C): 633 g/l
- Melting point: 90 - 91 °C
- Boiling point: 256 °C
- Flash point: > 135 °C
- Ignition temp.: 480 °C
- Vapour pressure: (20 °C) 0.003 hPa

- pH (67 g/l H<sub>2</sub>O, 20 °C) 10.5

### Toxicological data:

- LD 50 (oral, rat): 220 mg/kg
- MAK: 1.5 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- R: 22-34
- S: 22-26-36/37/39-45

- Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 8 CB III UN 3263
- IMDG: 8 III UN 3263
- IATA/ICAO: 8 III UN 3263
- PAX: 822
- CAO: 823
- LGK: 8 A
- Disposal: 3

- C<sub>3</sub>H<sub>4</sub>N<sub>2</sub>
- M = 68.08 g/mol
- CAS [288-32-4]
- EC number: 206-019-2

### I5005-1 Imidazole, reagent grade

HS-No: 2933 21 00 90

Assay (titr. With HClO<sub>4</sub>) ..... min. 99.0 %  
Identity (IR-spectrum) ..... passes test  
pH (5%, H<sub>2</sub>O) ..... 9.5 - 11.0  
Chlorides (Cl) ..... max. 0.005 %  
Sulfates (SO<sub>4</sub>) ..... max. 0.005 %  
Cadmium (Cd) ..... max. 0.0005 %  
Cobalt (Co) ..... max. 0.0005 %  
Copper (Cu) ..... max. 0.0005 %

Iron (Fe) ..... max. 0.0005 %  
Lead (Pb) ..... max. 0.0005 %  
Nickel (Ni) ..... max. 0.0005 %  
Zinc (Zn) ..... max. 0.0005 %  
UV-VIS spectroscopy ..... passes test  
Sulfated ash ..... max. 0.1 %  
Loss on drying (20 °C, in vacuum) ..... max. 0.5 %

Code	Capacity
I5005-1-1000	1 kg

## IMMERSION OIL



Synonyms:

### Physical data:

- Form: Liquid
- Density: 0.92 g/cm<sup>3</sup>
- Solub. in water (20 °C): almost non-miscible
- Melting point: < 0 °C

- Boiling point: 340 °C
- Flash point: 163 °C
- Vapour pressure: (23 °C) < 0.13 hPa
- Refraction index: (n 20 °C/D) 1.516

### Toxicological data:

- WGK: 2

### Safety:

- R: 22
- S: 25-46
- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13

### I5010-9 Immersion oil, reagent grade

HS-No: 3822 00 00 00

Density (20°/4°) ..... 0.92 - 0.95 °  
n 20°/D ..... 1.515 - 1.522 °

Insoluble in ethanol ..... passes test  
Suitability for microscopy ..... passes test

Code	Capacity
I5010-9-0060	600 ml

## IODINE



Synonyms:

- I<sub>2</sub>
- M = 253.81 g/mol
- CAS [7553-56-2]
- EC number: 231-442-4

### Physical data:

- Spec. density: 4.93 g/cm<sup>3</sup>
- Bulk density: ~2100 g/cm<sup>3</sup>
- Solub. in water (20 °C): 0.29 g/l
- Melting point: 114 °C
- Boiling point: 185 °C

- Vapour pressure: (25 °C) 0.41 hPa
- pH (saturated solution H<sub>2</sub>O, 20 °C) 5.4

### Toxicological data:

- LD 50 (oral, rat): 14000 mg/kg
- MAK: 0.1 ml/m<sup>3</sup>, 1.1 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 053-001-00-3
- R: 20/21-50

- S: 23.2-51-25-36/37-61
- Poison class CH (Swiss): 2

### Transport/storage:

- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288
- IATA/ICAO: 6.1 III UN 3288
- PAX: 822
- CAO: 823
- LGK: 8 B
- Disposal: 22

**I5027-1 Iodine resublimed, reagent grade**

HS-No: 2801 20 00 00

Assay (Iodometric) .....	min. 99.8 %
Chlorides, bromides (as Cl) .....	max. 0.005 %
Non-volatile matter .....	max. 0.01 %

Code	Capacity
I5027-1-0500	500 g

**IODINE, VOLUMETRIC SOLUTIONS****I5034-0 Iodine solution 0.01 mol/l (0.02N)**

HS-No: 2801 20 00 00

Synonyms:

- I<sub>2</sub>
- M = 253.81 g/mol
- CAS [7553-56-2]
- EC number: 231-442-4

**Physical data:**- Density: 1.005 g/cm<sup>3</sup>**Toxicological data:**- MAK: 0.1 ml/m<sup>3</sup>, 1 mg/m<sup>3</sup>**Safety:**

- EC Index no.: 053-001-00-3

- R: 52

- S: 61

Code	Capacity
I5034-0-1001	1.0 L

1 ml = 0.002538 g I<sub>2</sub>**I5036-0 Iodine solution 0.05 mol/l (0.1N)**

HS-No: 2801 20 00 00

Synonyms:

- I<sub>2</sub>
- M = 253.81 g/mol
- CAS [7553-56-2]
- EC number: 231-442-4

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 053-001-00-3

- Poison class CH (Swiss): 3

**Transport/Storage:**

- LGK: 10-13

Code	Capacity
I5036-0-1001	1.0 L

**Physical data:**- Density: 1.02 g/cm<sup>3</sup>

- pH (20 °C) ~ 3.5

1 ml = 0.0127 g I<sub>2</sub>**I5038-0 Iodine solution 0.5 mol/l (1N)**

HS-No: 2801 20 00 00

Synonyms:

- I<sub>2</sub>
- M = 253.81 g/mol
- CAS [7553-56-2]
- EC number: 231-442-4

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 053-001-00-3

- Poison class CH (Swiss): 3

**Transport/Storage:**

- LGK: 10-13

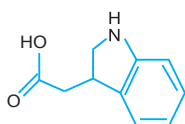
Code	Capacity
I5038-0-1001	1.0 L

**Physical data:**- Density: 1.02 g/cm<sup>3</sup>

- pH (20 °C) ~ 3.5

1 ml = 0.127 g I<sub>2</sub>**3-INDOLE ACETIC ACID**

Synonyms: JAA, Heteroauxine



- C<sub>10</sub>H<sub>9</sub>NO<sub>2</sub>
- M = 175.19 g/mol
- EC number: 201-748-2

**Physical data:**

- Solub. in water (20 °C):

slightly soluble

- Melting point: 167 - 170 °C

- Bulk density: ~ 620 g/m<sup>3</sup>**Toxicological data:**

- RTEC NL: 3150000

- WGK: 1

**Transport/storage:**

- LGK: 10-13

- Disposal: 4

**I6000-1 3-Indole acetic acid, reagent grade**

HS-No: 2933 90 95 00

Assay .....	min. 98.0 %
Melting point .....	166 ~ 168 °C
Solubility test in ethanol .....	passes test

Loss on drying .....	max. 0.1 %
Residue after ignition (as sulfate) ....	max. 0.05 %

Code	Capacity
I6000-1-0001	1 g

**IRON (II) CHLORIDE TETRAHYDRATE**

Synonyms:

- FeCl<sub>2</sub>·4H<sub>2</sub>O
- M = 198.83 g/mol
- CAS [13478-10-9]
- EC number: 231-843-4

- Melting point: 105 - 110 °C (release of crystalline water)
- Bulk density: 900 kg/m<sup>3</sup>
- Water absorption hygroscopic

**Safety:**

- Harmful, irritant

- R: 22-38-41

- S: 26-39

- Poison class CH: 3

**Physical data:**- Density: 1.93 g/cm<sup>3</sup>

- Solub. in water: ~ 1600g/l (10 °C)

- pH value: 2.5 (100 g/l H<sub>2</sub>O, 20 °C)**Toxicological data:**

- LD 50 (oral, rat): 984 mg/kg

- WGK: 1

**Transport/storage:**

- LGK: 10-13

- Disposal: 15

**I6001-1 Iron (II) chloride tetrahydrate, reagent grade**

HS-No: 2827 33 00 00

Assay (manganometric) .....	min. 99 %	manganese (Mn) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Lead (Pb) .....	max. 0.001 %
Total Nitrogen (N) .....	max. 0.001 %	Zinc (Zn) .....	max. 0.003 %
Arsenic (As) .....	max. 0.0005 %	Substances not precipitated by ammonia	
Copper (Cu) .....	max. 0.002 %	(as sulfate) .....	max. 0.05 %
Iron (III) - salt (Fe III) .....	max. 0.2 %		

Code	Capacity
I6001-1-0500	500 g



## IRON (II) SULFATE HEPTAHYDRATE



Synonyms: Iron vitriol

- FeSO<sub>4</sub>·7H<sub>2</sub>O  
- M = 278.02 g/mol  
- CAS [7782-63-0]  
- EC number: 231-753-5

- Melting point: > 60 °C (release of crystalline water)  
- pH (50 g/l H<sub>2</sub>O, 20 °C) 3 - 4

**Safety:**

- R: 22  
- S: 24/25-46  
- Poison class CH (Swiss): 3

**Physical data:**

- Spec. density: 1.89 g/cm<sup>3</sup>  
- Bulk density: ~600 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 665 g/l

**Toxicological data:**

- LD 50 (oral, rat): 319 mg/kg (anhydrous substance)  
- WGK: 1

**Transport/storage:**

- LGK: 10-13  
- Disposal: 15

### I6007-1 Iron (II) sulfate heptahydrate, reagent grade

HS-No: 2833 29 50 00

Assay (cerimetric) .....	min. 99.5 %	Iron (III) (Fe (III) ) .....	max. 0.02 %
pH (5%, H <sub>2</sub> O) .....	3 - 4	Lead (Pb) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.0005 %	Magnesium (Mg) .....	max. 0.05 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.001 %	Zinc (Zn) .....	max. 0.002 %
Total Nitrogen (N) .....	max. 0.001 %	Non-precipitable with ammonia (as SO <sub>4</sub> ) .....	max. 0.05 %
Arsenic (As) .....	max. 0.0002 %		
Copper (Cu) .....	max. 0.001 %		

Code	Capacity
I6007-1-0500	500 g
I6007-1-1000	1 kg

## IRON (II) SULPHIDE

Synonyms:

- FeS  
- M = 87.92 g/mol  
- CAS [1317-37-9]  
- EC number: 215-268-6

- Bulk density: ~ 1500 - 2000 kg/m<sup>3</sup>  
- Solub. in water (20 °C): almost insoluble  
- Melting point: ~ 1195 °C

**Safety:**

- Poison class CH (Swiss): 3

**Physical data:**

- Form: Solid  
- Spec. density: 4.8 g/cm<sup>3</sup>

**Toxicological:**

- WGK:

**Transport/storage:**

- LGK: 10-13  
- Disposal: 15

### I6022-3 Iron (II) Sulphide, extra pure

HS-No: 2830 90 11 00

Sulphide content ..... approx. 29 %

Code	Capacity
I6022-3-0500	500 g

## IRON (III) CHLORIDE HEXAHYDRATE



Synonyms: Ferric chloride hexahydrate

- FeCl<sub>3</sub>·6H<sub>2</sub>O  
- M = 270.32 g/mol  
- CAS [10025-77-1]  
- EC number: 231-729-4

- Melting point: 37 °C  
- pH (10 g/l H<sub>2</sub>O, 25 °C) ~ 1.8

**Safety:**

- R: 22-38-41  
- S: 26-39-46  
- Poison class CH (Swiss): 3

**Physical data:**

- Bulk density: ~ 600 - 1200 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 920 g/l

**Toxicological data:**

- LD 50 (oral, rat): 450 mg/kg (anhydrous substance)  
- WGK: 1

**Transport/storage:**

- LGK: 10-13  
- Disposal: 15

### I6014-1 Iron (III) chloride hexahydrate, reagent grade

HS-No: 2827 33 00 00

Assay .....	min. 99 %	Ferrous Iron (Fe <sub>2</sub> ) .....	max. 0.002 %
Insolubility matter in water .....	max. 0.01 %	Copper (Cu) .....	max. 0.005 %
Free acid (as HCl) .....	max. 0.1 mol/L	Zinc (Zn) .....	max. 0.003 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Arsenic (As) .....	max. 0.002 %
Nitrate (NO <sub>3</sub> ) .....	max. 0.01 %	Substances not precipitated by ammonium hydroxide (as Sulfate) ..	max. 0.1 %
Phosphate (PO <sub>4</sub> ) .....	max. 0.01 %		
Manganese (Mn) .....	max. 0.02 %		

Code	Capacity
I6014-1-1000	1 kg

### I6014-3 Iron (III) chloride hexahydrate, extra pure

HS-No: 2827 33 00 00

Assay .....	min. 99 %	Iron (II) (Fe (II) ) .....	max. 0.05 %
Free acid (as HCl) .....	max. 0.2 %	Lead (Pb) .....	max. 0.01 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.005 %	Magnesium (Mg) .....	max. 0.05 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.05 %	Manganese (Mn) .....	max. 0.1 %
Arsenic (As) .....	max. 0.005 %	Potassium (K) .....	max. 0.05 %
Calcium (Ca) .....	max. 0.05 %	Sodium (Na) .....	max. 0.1 %
Copper (Cu) .....	max. 0.005 %	Zinc (Zn) .....	max. 0.01 %

Code	Capacity
I6014-3-1000	1 kg

## IRON (III) NITRATE NONAHYDRATE



Synonyms: Ferric nitrate monohydrate

- Fe(NO<sub>3</sub>)<sub>3</sub>·9H<sub>2</sub>O  
- M = 404.00 g/mol  
- CAS [7782-61-8]  
- EC number: 233-899-5

- Melting point: 47 °C (decomposes)  
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~ 1.3

- Poison class CH (Swiss): 3

**Physical data:**

- Spec. density: 1.68 g/cm<sup>3</sup>  
- Bulk density: ~ 900 g/cm<sup>3</sup>  
- Solub. in water (20 °C): soluble

**Toxicological data:**

- LD 50 (oral, rat): 3250 mg/kg  
- WGK: 1

**Safety:**

- R: 8-36/38  
- S: 26

**Transport/storage:**

- ADR: 5.1 O2 III UN 1466  
- IMDG: 5.1 III UN 1466  
- IATA/ICAO: 5.1 III UN 1466  
- PAX: 516  
- CAO: 518  
- LGK: 5.1 B  
- Disposal: 15

**16017-1 Iron (III) nitrate nonahydrate, reagent grade**

HS-No: 2834 29 80 00

Assay (iodometric) .....	min. 98.5 %	Copper (Cu) .....	max. 0.001 %
Insolubility matter in water .....	max. 0.005 %	Zinc (Zn) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.0005 %	Substance not precipitated by ammonium hydroxide (as sulfate) ...	max. 0.05 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %		

Code	Capacity
16017-1-0500	500 g

**16017-3 Iron (III) nitrate nonahydrate, extra pure**

HS-No: 2834 29 80 00

Assay (iodometric) .....	min. 98 %	Copper (Cu) .....	max. 0.005 %
Insolubility in water .....	max. 0.05 %	Iron (II) (Fe (II)) .....	max. 0.01 %
Chloride (Cl) .....	max. 0.005 %	Lead (Pb) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Magnesium (Mg) .....	max. 0.02 %
Calcium (Ca) .....	max. 0.02 %	Zinc (Zn) .....	max. 0.01 %

Code	Capacity
16017-3-0500	500 g

**IRON (III) SULFATE HYDRATE**

Synonyms:

- Fe<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>·xH<sub>2</sub>O
- M = 399.87 g/mol
- CAS [15244-10-7]
- EC number: 233-072-9

- Bulk density: ~ 200 g/cm<sup>3</sup>
- Solub. in water (20 °C): freely soluble
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 1.5

**Safety:**

- S: 24/25
- Poison class CH (Swiss): 4

**Physical data:**

- Spec. density: (18 °C, anhydrous substance) 3.097 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Transport/storage:**

- LGK: 10-13

**1624-1 Iron (III) sulfate hydrate, reagent grade**

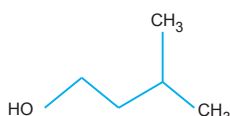
HS-No: 2833 29 50 00

Assay (iodometric (as Fe <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> ) ..	min. 75 %	Copper (Cu) .....	max. 0.005 %
Insoluble in water .....	max. 0.025 %	Iron (II) ( Fe (II) ) .....	max. 0.05 %
Chloride (Cl) .....	max. 0.01 %	Potassium (K) .....	max. 0.01 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.02 %	Sodium (Na) .....	max. 0.05 %

Code	Capacity
16024-1-0500	500 g

**ISOAMYL ALCOHOL**

Synonyms: 3-Methyl-1-butanol, Isopentyl alcohol



- C<sub>5</sub>H<sub>12</sub>O
- M = 88.15 g/mol
- CAS [123-51-3]
- EC number: 204-633-5

**Physical data:**

- Density: 0.81 g/cm<sup>3</sup>
- Solub. in water (20 °C): 25 g/l
- Melting point: -117 °C
- Boiling point: 131 °C
- Flash point: 43 °C

- Ignition temp.: 340 °C
- Vapour pressure: (20 °C) 3.1 hPa
- Dipolar moment: (20 °C) 1.7 Debye
- Dielectric const.: (20 °C) 14.7
- Evap. heat: (132 °C) 441 kJ/kg
- Saturation conc.: (20 °C) 11 g/m<sup>3</sup>
- Expl. limit (upper): 8 Vol%
- Expl. limit (lower): 1.2 Vol%
- pH (25 g/l H<sub>2</sub>O, 20 °C) ~ 7

**Toxicological data:**

- LD 50 (oral, rat): >5000 mg/kg
- MAK: 100 ml/m<sup>3</sup>, 370 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 603-006-00-7
- R: 10-20
- S: 24/25
- VbF class: All
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 3 F1 III UN 1105
- IMDG: 3 III UN 1105
- IATA/ICAO: 3 III UN 1105
- PAX: 309
- CAO: 310
- LGK: 3 A
- Disposal: 1

**I7009-1 Iso-Amyl alcohol, reagent grade**

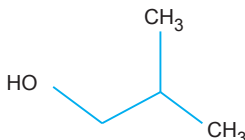
HS-No: 2905 15 00 00

Assay .....	min. 98.5 %	Acids and esters (as Amyl Acetate) .	max. 0.2 %
Titration acid .....	max. 0.002 meq/g	Carbonyl (as HCHO) .....	max. 0.1 %
Residue after evaporation .....	max. 0.003 %	Water .....	max. 0.5 %

Code	Capacity
17009-1-2501	2.5 L

**ISOBUTANOL**

Synonyms: 2-Methyl-1-propanol, Isobutyl alcohol, Isopropylcabinol



- C<sub>4</sub>H<sub>10</sub>O
- M = 74.12 g/mol
- EC number: 201-148-0

**Physical data:**

- Density: 0.8 g/cm<sup>3</sup>
- Solub. in water (20 °C): 80 g/l
- Melting point: -108 °C
- Boiling point: 108 °C
- Flash point: 28 °C
- Ignition temp.: 430 °C
- Vapour pressure: (20 °C) 12 hPa
- Refraction index: (n 20 °C/D) 1.3955
- Viscosity: (20 °C) 6.68 mPas

- Dipolar moment: (20 °C) 1.79 Debye
- Dielectric const.: (20 °C) 17.7
- Evap. heat: (108 °C) 577 kJ/kg
- Saturation conc.: (20 °C) 36 g/m<sup>3</sup>
- Expl. limit (upper): 12 Vol%
- Expl. limit (lower): 1.6 Vol%
- pH (80 g/l H<sub>2</sub>O, 20 °C) 7

**Toxicological data:**

- LD 50 (oral, rat): 2460 mg/kg
- MAK: 100 ml/m<sup>3</sup>, 310 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 603-108-00-1
- R: 10-37/38-41-67
- S: 7/9-13-26-37/39-46
- VbF class: All
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 3 F1 III UN 1212
- IMDG: 3 III UN 1212
- IATA/ICAO: 3 III UN 1212
- PAX: 309
- CAO: 310
- LGK: 3 A
- Disposal: 1

### I7019-1 Isobutanol, reagent grade

HS-No: 2905 14 90 00

Assay (GC) .....	min. 99.5 %	Lead (Pb) .....	max. 0.00002 %
Solubility in water .....	passes test	Magnesium (Mg) .....	max. 0.00001 %
Colour .....	max. 10 Hazen	Manganese (Mn) .....	max. 0.000002 %
Acidity .....	max. 0.0005 meq/g	Nickel (Ni) .....	max. 0.000005 %
Aluminium (Al) .....	max. 0.00005 %	Tin (Sn) .....	max. 0.00002 %
Arsenic (As) .....	max. 0.00002 %	Zinc (Zn) .....	max. 0.00002 %
Barium (Ba) .....	max. 0.000005 %	2-Butanol (GC) .....	max. 0.05 %
Boron (B) .....	max. 0.00005 %	n-butyraldehyde (GC) .....	max. 0.1 %
Calcium (Ca) .....	max. 0.00005 %	Isobutyraldehyde (GC) .....	max. 0.05 %
Cadmium (Cd) .....	max. 0.00001 %	Peroxydes (as H <sub>2</sub> O <sub>2</sub> ) .....	max. 0.001 %
Cobalt (Co) .....	max. 0.000005 %	Substances Darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Chromium (Cr) .....	max. 0.000005 %	Non-volatile matter .....	max. 0.001 %
Copper (Cu) .....	max. 0.000005 %	Water .....	max. 0.1 %
Iron (Fe) .....	max. 0.00002 %	UV spectrophotometry .....	passes test

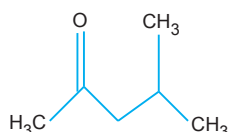
Code	Capacity
I7019-1-1000	1.0 L
I7019-1-2500	2.5 L



### ISOBUTYL METHYL KETONE

Synonyms: Isobutyl methyl ketone, 4-Methyl-2-pentanone, isopropylacetone, Hexone, MIBK

- C<sub>6</sub>H<sub>12</sub>O
- M = 100.16 g/mol
- CAS [108-10-1]
- EC number: 203-550-1
- Dipolar moment: (20 °C) 13.11 Debye
- Dielectric const.: (20 °C) 13.1
- Evap. heat: (117 °C) 364 kJ/kg
- Saturation conc.: (20 °C) 82 g/m<sup>3</sup>
- Expl. limit (upper): 8.0 Vol%
- Expl. limit (lower): 1.2 Vol%
- pH (20 °C) ~ 7



#### Physical data:

- FormL Liquid
- Density: 0.80 g/cm<sup>3</sup>
- Solub. in water (20 °C): ~ 18 - 20 g/l
- Melting point: -84 °C
- Boiling point: 116 - 118 °C
- Flash point: 14 °C
- Ignition temp.: 475 °C
- Vapour pressure: (20 °C) 20.2 hPa

#### Toxicological data:

- LD 50 (oral, rat): 2080 mg/kg
- MAK: 20 ml/m<sup>3</sup>, 83 mg/m<sup>3</sup>
- WGK: 1

#### Safety:

- EC Index no.: 606-004-00-4
- R: 11-20-36/37-66
- S: 9-16-29
- VbF class: AI
- Poison class CH (Swiss): 4

#### Transport/storage:

- ADR: 3 F1 II UN 1245
- IMDG: 3 II UN 1245
- IATA/ICAO: 3 II UN 1245
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

### I7025-1 Isobutyl Methyl Ketone, reagent grade

Assay (GC) .....	min. 99.5 %	Copper (Cu) .....	max. 0.000002 %
Colour .....	max. 10 Hazen	Iron (Fe) .....	max. 0.00001 %
Acidity .....	max. 0.0002 meq/g	Lead (Pb) .....	max. 0.00001 %
Alkalinity .....	max. 0.001 meq/g	Magnesium (Mg) .....	max. 0.00001 %
Aluminium (Al) .....	max. 0.00005 %	Manganese (Mn) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.000001 %	Nickel (Ni) .....	max. 0.000002 %
Boron (B) .....	max. 0.000002 %	Tin (Sn) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Zinc (Zn) .....	max. 0.00001 %
Calcium (Ca) .....	max. 0.00005 %	KMnO <sub>4</sub> red. Matter (as O) .....	max. 0.0003 %
Chromium (Cr) .....	max. 0.000002 %	Non-volatile matter .....	max. 0.0005 %
Cobalt (Co) .....	max. 0.000002 %	Water .....	max. 0.05 %

Code	Capacity
I7025-1-2501	2.5 L

# **Chemical list : K**

# KAOLIN

Synonyms: Kaolin, Aluminium silicate hydrated

- CAS [1332-58-7]
- EC number: 310-127-9

**Physical data:**

- Spec. density: 2.6 g/cm<sup>3</sup> (20 °C)
- Solub. in water (20 °C): Insoluble

- pH value 6 - 7 (slurry)
- Bulk density: ~ 350 kg/m<sup>3</sup>

**Toxicological data:**

- MAK: 1.5 ml/m<sup>3</sup>
- WGK: nwg

**Safety:**

- S: 22
- RTECS GF: 1670500
- Poison class CH: F

**Transport/storage:**

- LGK: 10-13

## K1000-3 Kaolin, extra pure

HS-No: 2507 00 20 00

Chloride (Cl) .....	max. 0.035 %	Sand .....	passes test
Carbonate (CO <sub>3</sub> ) .....	passes test	Iron (Fe) .....	max. 0.06 %
Soluble matter in acids .....	max. 1.0 %	Heavy metals (as Pb) .....	max. 0.01 %
Loss on ignition .....	max. 15.0 %	Arsenic (As) .....	max. 0.0002 %

<u>Code</u>	<u>Capacity</u>
K1000-3-0500	500 g

# Chemical list : L



## D(+)-LACTOSE MONOHYDRATE

Synonyms: Lactobiose, Milk sugar

- C<sub>12</sub>H<sub>22</sub>O<sub>11</sub>·H<sub>2</sub>O  
- M = 360.32 g/mol  
- CAS [10039-26-6]  
- EC number: 200-559-2

### Physical data:

- Form: Solid  
- Bulk density: ~ 500 kg/m<sup>3</sup>  
- Solub. in water (20 °C): freely soluble  
- Melting point: 223 °C  
- pH (50 g/l H<sub>2</sub>O, 20 °C) 4 - 6

### Toxicological data:

- WGK: 0

### Safety:

- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13

### L1000-3 d(+)-lactose monohydrate, extra pure

HS-No: 1702 11 00 00

Specific rotation ([α]<sub>D</sub><sup>20</sup>; c=10, H<sub>2</sub>O) +54.4 - +55.9 °  
Acidity/alkalinity ..... passes test  
Appearance of solution (10%, water) . passes test  
Proteins and UV-absorbing impurities passes test  
Arsenic (As) ..... max. 0.00005 %  
Copper (Cu) ..... max. 0.0025 %

Heavy metals (as Pb) ..... max. 0.0005 %  
Lead (Pb) ..... max. 0.00005 %  
Zinc (Zn) ..... max. 0.0025 %  
Sulfated ash ..... max. 0.1 %  
Water ..... 4.5 - 5.5  
Residual solvents (Ph Eur/ICH) ..... Excluded by production process

Code	Capacity
L1002-3-0500	500 g

## LEAD STANDARD SOLUTION 1000MG/L FOR AA

Synonyms:

### Physical data:

- Form: Liquid  
- Density: ~ 1.02 g/cm<sup>3</sup>  
- CAS [10039-26-6]  
- Solub. in water (20 °C): miscible  
- pH (20 °C) < 1

### Toxicological data:

- WGK: 1

### Safety:

- R: 36/38  
- S: 26-37  
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 8 C1 III UN 3264  
- IMDG: 8 C1 III UN 3264  
- IATA/ICAO: 8 C1 III UN 3264  
- PAX: 818  
- CAO: 520  
- LGK: 8B

### L1001-0 Lead standard solution 1000mg/l for AA

HS-No: 3822 00 00 00

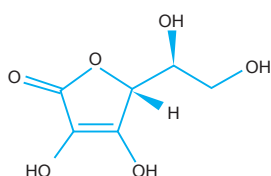
(lead (II) nitrate in nitric acid 0.5 mol/l)

Composition ..... 1000±5 mg/l

Code	Capacity
L1001-0-0500	500 ml

## L(+)-ASCORBIC ACID

Synonyms: Vitamin C, 3-Oxo-L-gulonic acid-g-lactone



- C<sub>6</sub>H<sub>8</sub>O<sub>6</sub>  
- M = 176.13 g/mol  
- CAS [50-81-7]  
- EC number: 200-066-2

### Physical data:

- Spec. density: 1.65 g/cm<sup>3</sup>  
- Bulk density: ~ 500 - 900 kg/m<sup>3</sup>  
- Solub. in water (24 °C): 330 g/l  
- Melting point: 190 - 192 °C  
(decomposes)  
- pH (50 g/l H<sub>2</sub>O, 20 °C) 2.2 - 2.5

### Toxicological data:

- LD 50 (oral, rat): 11900 mg/kg  
- WGK: 1

### Safety:

- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13

### L1003-1 L(+)-ascorbic acid, reagent grade

HS-No: 2936 27 00 00

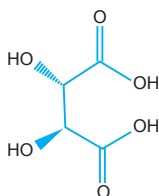
Assay (acidimetric) ..... min. 99.7 %  
Specific rotation  
([α]<sub>D</sub><sup>20</sup>; in H<sub>2</sub>O 10%) ..... +20.5 - +21.5  
pH (5%, H<sub>2</sub>O) ..... 2.2 - 2.5  
Chloride (Cl) ..... max. 0.005 %  
Sulphate (SO<sub>4</sub>) ..... max. 0.002 %

Copper (Cu) ..... max. 0.0005 %  
Heavy metals (as Pb) ..... max. 0.001 %  
Iron (Fe) ..... max. 0.0002 %  
Sulfated ash ..... max. 0.05 %  
Loss on drying (105 °C) ..... max. 0.1 %

Code	Capacity
L1003-1-0100	100 g
L1003-1-0250	250 g

## L(+)-TARTARIC ACID

Synonyms: 2,3-Dihydroxybutanedioic acid



- C<sub>4</sub>H<sub>6</sub>O<sub>6</sub>  
- M = 150.09 g/mol  
- CAS [87-69-4]  
- EC number: 201-766-0

### Physical data:

- Form: Solid  
- Spec. density: 1.76 g/cm<sup>3</sup>  
- Bulk density: ~ 800 - 1000 kg/m<sup>3</sup>

- Solub. in water (20 °C): soluble  
- Melting point: 170 °C  
- Ignition point: 425 °C  
- pH (100 g/l H<sub>2</sub>O, 25 °C) ~ 1.6

### Toxicological data:

- WGK: 1

### Safety:

- R: 36  
- S: 24/25  
- Poison class CH (Swiss): 4

### Transport/storage:

- LGK: 10-13  
- Disposal: 4

### L1012-1 L(+)-Tartaric acid, reagent grade

HS-No: 2918 12 00 00

Assay (acidimetric) ..... min. 99.5 %  
Identity (IR-spectrum) ..... passes test  
Appearance of solution ..... passes test  
Insoluble in water ..... max. 0.005 %  
Specific rotation ([α]<sub>D</sub><sup>20</sup>; c=20, H<sub>2</sub>O) +12.0 - +12.8 °  
Chloride (Cl) ..... max. 0.0005 %  
Phosphates (PO<sub>4</sub>) ..... max. 0.001 %  
Sulfates (SO<sub>4</sub>) ..... max. 0.005 %  
Arsenic (As) ..... max. 0.00002 %  
Calcium (Ca) ..... max. 0.002 %

Copper (Cu) ..... max. 0.0005 %  
Heavy metals (as Pb) ..... max. 0.0005 %  
Iron (Fe) ..... max. 0.0005 %  
Lead (Pb) ..... max. 0.0005 %  
Magnesium (Mg) ..... max. 0.002 %  
Nickel (Ni) ..... max. 0.0001 %  
Oxalic acid ..... max. 0.035 %  
Sulphur compounds (as SO<sub>4</sub>) ..... max. 0.002 %  
Sulfated ash ..... max. 0.01 %  
Loss on drying (105 °C) ..... max. 0.2 %

Code	Capacity
L1012-1-0500	500 g

**L1012-3 L(+)-Tartaric acid, extra pure**

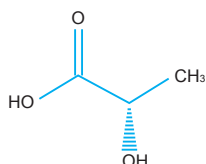
HS-No: 2918 12 00 00

Assay .....	99.7 - 100.5 %	Mercury (Hg) .....	max. 0.0001 %
Identity .....	passes test	Lead (Pb) .....	max. 0.0005 %
Organic volatile impurities (NF) .....	passes test	Heavy metals (as Pb) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.01 %	Oxalates (as C <sub>2</sub> H <sub>2</sub> O <sub>4</sub> ) .....	max. 0.01 %
Calcium (Ca) .....	max. 0.02 %	Sulphated ash (600 °C) .....	max. 0.1 %
Sulphate (SO <sub>4</sub> ) .....	max. 0.015 %	Loss on drying (105 °C) .....	max. 0.2 %

Code	Capacity
L1012-3-0500	500 g

**L(+)-LACTIC ACID**

Synonyms:



- C<sub>3</sub>H<sub>6</sub>O<sub>3</sub>
- M = 90.08 g/mol
- CAS [79-33-4]
- EC number: 200-018-0

**Physical data:**

- Form: Thick Liquid
- Density: ~ 1.18 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible

- Melting point: 18 °C
- Boiling point: (20 hPa) 122 °C
- pH (10 g/l H<sub>2</sub>O, 20 °C) ~ 2.8

**Toxicological data:**

- LD 50 (oral, rat): 3543 mg/kg (pure substance)
- WGK: 1

**Safety:**

- R: 38-41
- S: 26-39
- Poison class CH (Swiss): 4

**Transport/storage:**

- LGK: 10-13

**L1020-1 L(+)-Lactic acid, reagent grade**

HS-No: 2915 90 10 00

Assay .....	min. 88 %	Copper (Cu) .....	max. 0.0005 %
Insoluble in water .....	passes test	Heavy metals (as Pb) .....	max. 0.0005 %
Insoluble in C <sub>2</sub> H <sub>5</sub> OC <sub>2</sub> H <sub>5</sub> .....	passes test	Iron (Fe) .....	max. 0.0002 %
Aldehydes .....	passes test	Lead (Pb) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.001 %	Nickel (Ni) .....	max. 0.0005 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.002 %	Substances darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Arsenic (As) .....	max. 0.00001 %	Sulfated ash .....	max. 0.01 %

Code	Capacity
L1020-1-0500	500 g

**LANTHANUM (III) CHLORIDE HEPTAHYDRATE**Synonyms: LaCl<sub>3</sub>·7H<sub>2</sub>O

- Cl<sub>3</sub>La·7H<sub>2</sub>O
- M = 371.37 g/mol
- CAS [10025-84-0]
- EC number: 233-237-5

**Physical data:**

- Form: Solid
- Bulk density: ~ 900 g/cm<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: 91 °C (release of crystalline water)
- Boiling point: (20 hPa) 122 °C
- pH (100 g/l H<sub>2</sub>O, 25 °C) ~ 5

**Toxicological data:**

- LD 50 (oral, rat): 4184 mg/kg (anhydrous substance)
- WGK: 1

**Transport/storage:**

- LGK: 10-13
- Disposal: 28

**L1030-1 Lanthanum (III) chloride heptahydrate, reagent grade**

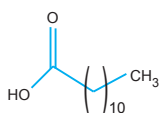
HS-No: 2846 90 00 00

Assay (Gravimetric) .....	min. 99 %	Iron (Fe) .....	max. 0.0001 %
Identity .....	passes test	Lead (Pb) .....	max. 0.0001 %
Insoluble in water .....	max. 0.01 %	Magnesium (Mg) .....	max. 0.0001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Potassium (K) .....	max. 0.001 %
Calcium (Ca) .....	max. 0.001 %	Sodium (Na) .....	max. 0.001 %
Copper (Cu) .....	max. 0.0001 %	Zinc (Zn) .....	max. 0.0001 %
Heavy metals (as Pb) .....	max. 0.0005 %		

Code	Capacity
L1030-1-0100	100 g

**LAURIC ACID**

Synonyms: Dodecanoic acid



- C<sub>12</sub>H<sub>24</sub>O<sub>2</sub>
- M = 200.32 g/mol
- CAS [143-07-7]
- EC number: 205-582-1

**Physical data:**

- Spec. density: ~ 0.87 g/cm<sup>3</sup>
- Bulk density: ~ 400 kg/m<sup>3</sup>

- Solub. in water (20 °C): insoluble
- Melting point: 42 - 45 °C
- Boiling point: (1.3 hPa) 131 °C
- Flash point: > 160 °C
- Vapour pressure: (20 °C) < 0.01 hPa

**Toxicological data:**

- LD 50 (oral, rat): 12000 mg/kg
- WGK: 1

**Safety:**

- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13
- Disposal: 4

**L1034-3 Lauric acid, extra pure**

HS-No: 2915 90 10 00

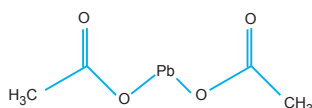
Assay .....	min. 99 %	Heavy metals (as Pb) .....	max. 0.001 %
Saponifiable compounds .....	max. 0.5 %	Iron (Fe) .....	max. 0.0001 %
Iodine Index .....	max. 0.5 %	Sulfated ash .....	max. 0.01 %

Code	Capacity
L1034-3-0500	500 g
L1034-3-1000	1 kg

## LEAD (II) ACETATE TRIHYDRATE



Synonyms:



- Pb(CH<sub>3</sub>COO)<sub>2</sub> · 3H<sub>2</sub>O  
- M = 379.34 g/mol  
- CAS [6080-56-4]  
- EC number: 206-104-4

- pH (50 g/l H<sub>2</sub>O, 20 °C) 5.5 - 6.5

- S: 53-45-60-61  
- Poison class CH (Swiss): 2

### Toxicological data:

- LD 50 (oral, rat): 4665 mg/kg  
- MAK: 0.1 mg/m<sup>3</sup>  
- WGK: 3\*

### Physical data:

- Spec. density: 2.55 g/cm<sup>3</sup>  
- Bulk density: ~ 1200 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 410 g/l  
- Melting point: 75 °C

### Safety:

- EC Index no.: 082-005-00-8  
- R: 61-33-E48/22-50/53-62

### Transport/storage:

- ADR: 6.1 T5 III UN 1616  
- IMDG: 6.1 III UN 1616  
- IATA/ICAO: 6.1 III UN 1616  
- PAX: 619  
- CAO: 619  
- LGK: 6.1 B  
- Disposal: 15

### L2003-3 Lead (II) acetate trihydrate, extra pure

Assay (complexometric) ..... min. 99.5 %  
Insoluble in water ..... passes test  
Chloride (Cl) ..... max. 0.002 %  
Copper (Cu) ..... max. 0.001 %  
Iron (Fe) ..... max. 0.001 %

Silver (Ag) ..... max. 0.001 %  
Zinc (Zn) ..... max. 0.005 %  
Non precipitable with H<sub>2</sub>S  
(as Sulfate) ..... max. 0.2 %

HS-No: 2915 29 00 00

Code	Capacity
L2003-3-0500	500 g

L

## LEAD (II) BROMIDE



Synonyms:

- PbBr<sub>2</sub>  
- M = 367.01 g/mol  
- CAS [10031-22-8]  
- EC number: 233-084-4

### Physical data:

- Solub. in water: 5 g/l (20 °C)  
- Melting point: 372 - 374 °C

### Toxicological data:

- MAK: 0.1 mg/m<sup>3</sup>  
- WGK: 3\*

### Safety:

- Toxic for reproduction, harmful,  
dangerous for the environment  
- EC-Index no.: 082-001-00-6  
- R: 61-E20/2-33-50/53-62  
- S: 53-45-60-61

### Transport/storage:

- Packing-cat: G  
- Road/Rail 6.1/62 c  
- IMDG-Code: 6.1/III UN 2291  
- IATA/DGR: 6.1 III UN 2291  
- CAO: 619  
- PAX: 619  
- SAX: 6.1692  
- LGK: 6.1 B  
- Disposal: 15

### L2005-3 Lead (II) Bromide, extra pure

Assay (ex Pb) ..... max. 99 %

HS-No: 2827 59 00 00

Code	Capacity
L2005-3-0500	500 g

## LEAD (II) NITRATE



Synonyms:

- Pb(NO<sub>3</sub>)<sub>2</sub>  
- M = 331.21 g/mol  
- CAS [10099-74-8]  
- EC number: 233-245-9

### Physical data:

- Spec. density: 4.53 g/cm<sup>3</sup>  
- Bulk density: ~ 1850 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 525 g/l  
- Melting point: ~ 470 °C  
- pH (50 g/l H<sub>2</sub>O, 20 °C) 3 - 4

### Toxicological data:

- MAK: 0.1 mg/m<sup>3</sup>  
- WGK: 2

### Safety:

- EC Index no.: 082-001-00-6  
- R: 61-E20/22-33-50/53-62  
- S: 53-45-60-61  
- Poison class CH (Swiss): 2

### Transport/storage:

- ADR: 5.1 OT2 II UN 1469  
- IMDG: 5.1 II UN 1-69  
- IATA/ICAO: 5.1 II -\*N 1469  
- PAX: 508  
- CAO: 511  
- LGK: 5.1 B  
- Disposal: 15

### L2019-1 Lead (II) nitrate, reagent grade

Assay (complexometric) ..... min. 99.5 %  
Insoluble substances ..... max. 0.005 %  
Chloride (Cl) ..... max. 0.0005 %  
Calcium (Ca) ..... max. 0.005 %  
Copper (Cu) ..... max. 0.0005 %  
Iron (Fe) ..... max. 0.0005 %

Magnesium (Mg) ..... max. 0.005 %  
Potassium (K) ..... max. 0.005 %  
Sodium (Na) ..... max. 0.005 %  
Non precipitable with H<sub>2</sub>S  
(as sulfate) ..... max. 0.01 %

HS-No: 2834 29 20 00

Code	Capacity
L2019-1-0500	500 g

## LEAD (II) OXIDE



Synonyms: Litharge

- PbO  
- M = 223.19 g/mol  
- CAS [1317-36-8]  
- EC number: 215-267-0

### Physical data:

- Spec. density: 9.6 g/cm<sup>3</sup>  
- Bulk density: ~ 3500 - 3700 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 0.017 g/l  
- Melting point: 890 °C

- Boiling point: 1470 °C  
- pH (100 g/l H<sub>2</sub>O, 20 °C) 8 - 9

### Toxicological data:

- LD 50 (oral, rat): > 10000 mg/kg  
- MAK: 0.1 mg/m<sup>3</sup>  
- WGK: 1

### Safety:

- EC Index no.: 082-001-00-6  
- R: 61-E20/22-33-50/53-62

- S: 53-45-60-61  
- Poison class CH (Swiss): 2

### Transport/storage:

- ADR: 6.1 T5 III UN 2291  
- IMDG: 6.1 III UN 2291  
- IATA/ICAO: 6.1 III UN 2291  
- PAX: 619  
- CAO: 619  
- LGK: 6.1B  
- Disposal: 15

### L2022-3 Lead (II) oxide, extra pure

Assay (complexometric) .....	min. 99 %	Copper (Cu) .....	max. 0.002 %
Insoluble in dil. acetic acid .....	max. 0.05 %	Iron (Fe) .....	max. 0.002 %
Soluble in water .....	max. 0.02 %	Silver (Ag) .....	max. 0.005 %
Chloride (Cl) .....	max. 0.005 %	Loss on calcinations (700 °C) .....	max. 0.2 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.01 %		

HS-No: 2824 10 00 00

Code	Capacity
L2022-3-0500	500 g

## LEAD (IV) OXIDE



Synonyms: Lead dioxide, Lead peroxide

- PbO<sub>2</sub>
- M = 232.20 g/mol
- CAS [1309-60-8]
- EC number: 215-174-5

#### Physical data:

- Spec. density: 9.4 g/cm<sup>3</sup>
- Bulk density: ~ 1500 kg/m<sup>3</sup>
- Solub. in water (20 °C): almost insoluble
- Melting point: 290 °C (decomposes)
- pH (100 g/l H<sub>2</sub>O, 20 °C) 6 - 7

#### Toxicological data:

- MAK: 0.1 mg/m<sup>3</sup>
- WGK: 1

#### Safety:

- EC Index no.: 082-001-00-6
- R: 61-E20/22-33-50/53-62
- S: 53-45-60-61
- Poison class CH (Swiss): 2

#### Transport/storage:

- ADR: 5.1 OT2 III UN 1872
- IMDG: 5.1 III UN 1872
- IATA/ICAO: 5.1 III UN 1872
- PAX: 516
- CAO: 518
- LGK: 5.1B
- Disposal: 15

### L2030-3 Lead (IV) oxide, extra pure

Assay (bromometric) .....	min. 97 %	Total N .....	max. 0.005 %
Insoluble in acid .....	max. 0.05 %	Copper (Cu) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.003 %	Iron (Fe) .....	max. 0.02 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.003 %	Manganese (Mn) .....	max. 0.0002 %
Carbon (C) .....	max. 0.005 %	Non precipitable with H <sub>2</sub> S (as SO <sub>4</sub> )	max. 0.5 %

HS-No: 2824 90 00 00

Code	Capacity
L2030-3-0500	500 g

## LEAD (II) SULFATE

Synonyms:

- PbSO<sub>4</sub>
- M = 303.25 g/mol
- CAS [7446-14-2]
- EC number: 231-198-9

#### Physical data:

- Spec. density: 6.2 g/cm<sup>3</sup>
- Solub. in water (20 °C): 0.045 g/l
- Melting point: 1170 °C

#### Safety:

- EC Index no.: 082-001-00-6
- R: 61-E20/22-33-50/53-62
- S: 53-45
- Poison class CH (Swiss): 2

#### Transport/storage:

- ADR: 8 C2 II UN 1794
- IMDG: 8 C2 II UN 1794
- IATA/ICAO: 8 II UN 1794
- PAX: 619
- CAO: 619

### L2032-3 Lead (II) sulfate, extra pure

Assay (complexometric) .....	min. 98 %
Insoluble in CH <sub>3</sub> COONH <sub>4</sub> .....	max. 0.1 %
Chloride (Cl) .....	max. 0.005 %
Iron (Fe) .....	max. 0.005 %

HS-No: 2836 91 00 90

Code	Capacity
L2032-3-0500	500 g

## LITHIUM CARBONATE

Synonyms: Li<sub>2</sub>CO<sub>3</sub>

- Li<sub>2</sub>CO<sub>3</sub>
- M = 73.89 g/mol
- CAS [554-13-2]
- EC number: 209-062-5

#### Physical data:

- Form: Solid
- Spec. density: ~ 2.1 g/cm<sup>3</sup>
- Bulk. density: ~ 250 kg/m<sup>3</sup>

- Solub. in water (20 °C): 13 g/l
- Melting point: 720 °C
- pH (5 g/l H<sub>2</sub>O, 20 °C) ~ 10 - 11

#### Toxicological data:

- LD 50 (oral, rat): 525 mg/kg (anhydrous substance)
- WGK: 1

#### Safety:

- R: 22-36
- S: 24-46
- Poison class CH (Swiss): 3

#### Transport/storage:

- LGK: 10-13
- Disposal: 14

### L3000-1 Lithium carbonate, reagent grade

Assay .....	min. 97.0 %	Barium (Ba) .....	max. 0.01 %
Chloride (Cl) .....	max. 0.005 %	Iron (Fe) .....	max. 0.007 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.1 %	Sodium (Na) .....	max. 0.3 %
Nitrate (NO <sub>3</sub> ) .....	max. 0.005 %	Potassium (K) .....	max. 0.2 %
Phosphate (PO <sub>4</sub> ) .....	max. 0.003 %	Heavy metals (as Pb) .....	max. 0.002 %

HS-No: 2836 91 00 90

Code	Capacity
L3000-1-0500	500 g

## LITHIUM CHLORIDE MONOHYDRATE



Synonyms:

- LiCl·H<sub>2</sub>O
- M = 60.41 g/mol
- CAS [16712-20-2]
- EC number: 231-212-3

#### Physical data:

- Spec. density: 2.07 g/cm<sup>3</sup>
- Bulk. density: ~ 530 kg/m<sup>3</sup>

- Solub. in water (20 °C): 832 g/l
- Melting point: 614 °C
- Vapour pressure: (547 °C) 1.33 hPa
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 6

#### Toxicological data:

- LD 50 (oral, rat): 526 mg/kg
- WGK: 1

#### Safety:

- R: 22-36/38
- S: 46
- Poison class CH (Swiss): 3

#### Transport/storage:

- LGK: 10-13
- Disposal: 14

**L3018-1 Lithium chloride monohydrate, reagent grade**

HS-No: 2827 39 80 90

Assay .....	min. 97.0 %	Sodium (Na) .....	max. 0.03 %
pH (50 g/l, 25 °C) .....	4.5 - 7.5	Magnesium (Mg) .....	max. 0.002 %
Appearance of solution .....	passes test	Potassium (K) .....	max. 0.03 %
Insolubility matter in water .....	max. 0.005 %	Calcium (Ca) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Iron (Fe) .....	max. 0.001 %
Nitrate (NO <sub>3</sub> ) .....	max. 0.002 %	Barium (Ba) .....	max. 0.005 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.002 %	Heavy metals (as Pb) .....	max. 0.001 %
Phosphate (PO <sub>4</sub> ) .....	max. 0.001 %		

Code	Capacity
L3018-1-0500	500 g

**L3018-3 Lithium chloride monohydrate, extra pure**

HS-No: 2827 39 80 90

Assay (argentometric) .....	min. 98 %	Copper (Cu) .....	max. 0.002 %
Insoluble in water .....	max. 0.05 %	Iron (Fe) .....	max. 0.001 %
Nitrogen compounds (as N) .....	max. 0.005 %	Lead (Pb) .....	max. 0.002 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.003 %	Nickel (Ni) .....	max. 0.002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Potassium (K) .....	max. 0.01 %
Heavy metals (as Pb) .....	max. 0.001 %	Sodium (Na) .....	max. 0.02 %
Calcium (Ca) .....	max. 0.01 %		

Code	Capacity
L3018-3-1000	1 kg

**LITHIUM HYDROXIDE MONOHYDRATE****Synonyms:**

- LiOH·H<sub>2</sub>O
- M = 41.96 g/mol
- CAS [1310-66-3]
- EC number: 215-183-4
- Melting point: 462 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 12

**Physical data:**

- Spec. density: 1.51 g/cm<sup>3</sup>
- Bulk density: ~ 650 kg/m<sup>3</sup>
- Solub. in water (20 °C): 124 g/l

**Toxicological data:**

- WGK: 1

**Safety:**

- R: 35
- S: 26-36/37/39-45
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 C6 II UN 2680
- IMDG: 8 II UN 2680
- IATA/ICAO: 8 II UN 2680
- PAX: 814
- CAO: 816
- LGK: 8 B
- Disposal: 13

**L3023-1 Lithium hydroxide monohydrate, reagent grade**

HS-No: 2825 20 00 00

Assay (acidimetric) .....	min. 98 %	Calcium (Ca) .....	max. 0.005 %
Assay of Li <sub>2</sub> CO <sub>3</sub> .....	max. 1 %	Heavy metals (as Pb) .....	max. 0.001 %
Insoluble in acid .....	max. 0.01 %	Iron (Fe) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.005 %	Potassium (K) .....	max. 0.01 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Sodium (Na) .....	max. 0.01 %

Code	Capacity
L3023-1-0500	500 g

**LITHIUM NITRATE****Synonyms:**

- LiNO<sub>3</sub>
- M = 68.95 g/mol
- CAS [7790-69-4]
- EC number: 232-218-9
- Melting point: 255 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 7 - 9

**Physical data:**

- Form: Solid
- Spec. density: ~ 2.36 g/cm<sup>3</sup>
- Bulk density: ~ 910 kg/m<sup>3</sup>
- Solub. in water (20 °C): 13 g/l

**Toxicological data:**

- WGK: 1

**Safety:**

- R: 8
- S: 24/25
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 5.1 O2 III UN 2722
- IMDG: 5.1 III UN 2722
- IATA/ICAO: 5.1 III UN 2722
- PAX: 516
- CAO: 518
- LGK: 5.1 B
- Disposal: 14

**L3050-1 Lithium nitrate, reagent grade**

HS-No: 2836 29 80 00

Appearance of solution .....	passes test	Sodium (Na) .....	max. 0.1 %
Insolubility matter in water .....	max. 0.1 %	Magnesium (Mg) .....	max. 0.01 %
Loss on drying .....	max. 3.0 %	Potassium (K) .....	max. 0.1 %
Acid and alkali test .....	passes test	Calcium (Ca) .....	max. 0.03 %
Chloride (Cl) .....	max. 0.002 %	Iron (Fe) .....	max. 0.002 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.052 %	Barium (Ba) .....	max. 0.01 %
Phosphate (PO <sub>4</sub> ) .....	max. 0.001 %	Heavy metals (as Pb) .....	max. 0.001 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.003 %		

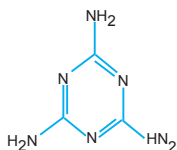
Code	Capacity
L3050-1-0500	500 g

# **Chemical list : M**



## MELAMINE

Synonyms: 2,4,4-Triamino-1,3,5-triazine



- C<sub>3</sub>H<sub>6</sub>N<sub>6</sub>
- M = 126.12 g/mol
- CAS [108-78-1]
- EC number: 203-615-4

**Physical data:**

- Form: Powder, finecrystalline
- Spec. density: 1.57 g/cm<sup>3</sup>
- Bulk density: 800 kg/m<sup>3</sup>

- Solub. in water (20 °C): 3.2 g/l
- Melting point: 354 °C (decomposes)
- Flash point: > 280 °C
- Ignition temp.: > 600 g/cm<sup>3</sup>
- pH (32 g/l H<sub>2</sub>O, 20 °C) 7 - 8

- WGK: 1

**Safety:**

- Poison class CH (Swiss): 4

**Transport/storage:**

- LGK: 10-13
- Disposal: 3

**Toxicological data:**

- LD 50 (oral, rat): > 3000 mg/kg

### M1000-2 Melamine, synthesis grade

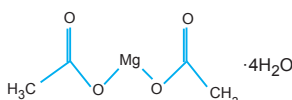
HS-No: 2933 61 00 00

Assay (ex. N) .....	min. 99 %
Identity (IR-spectrum) .....	passes test

Code	Capacity
M1000-2-0500	500 g

## MAGNESIUM ACETATE TETRAHYDRATE

Synonyms:



- Mg(CH<sub>3</sub>COO)<sub>2</sub>·4H<sub>2</sub>O
- M = 214.46 g/mol
- CAS [16674-78-5]
- EC number: 205-554-9

**Physical data:**

- Spec. density: 1.45 g/cm<sup>3</sup>

- Bulk density: ~ 510 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: 80 °C
- pH (50 g/l H<sub>2</sub>O, 50 °C) 6.1

**Toxicological data:**

- WGK: 1

**Safety:**

- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13
- Disposal: 14

### M1001-1 Magnesium acetate tetrahydrate, reagent grade

HS-No: 2915 29 00 90

Assay (complexometric) .....	99.5 - 102 %	Heavy metals (as Pb) .....	max. 0.0005 %
Insoluble in water .....	max. 0.005 %	Iron (Fe) .....	max. 0.0001 %
Chloride (Cl) .....	max. 0.001 %	Manganese (Mn) .....	max. 0.001 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.001 %	Potassium (K) .....	max. 0.005 %
Total Nitrogen (N) .....	max. 0.001 %	Sodium (Na) .....	max. 0.001 %
Barium (Ba) .....	max. 0.001 %	Strontium (Sr) .....	max. 0.005 %
Calcium (Ca) .....	max. 0.001 %	Zinc (Zn) .....	max. 0.0002 %
Copper (Cu) .....	max. 0.0005 %		

Code	Capacity
M1001-1-0500	500 g

### M1001-3 Magnesium acetate tetrahydrate, extra pure

HS-No: 2915 29 00 90

Assay (complexometric) .....	min. 99 %	Copper (Cu) .....	max. 0.001 %
Insoluble in water .....	max. 0.025 %	Iron (Fe) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.005 %	Manganese (Mn) .....	max. 0.001 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.01 %	Potassium (K) .....	max. 0.01 %
Total Nitrogen (N) .....	max. 0.005 %	Sodium (Na) .....	max. 0.01 %
Barium (Ba) .....	max. 0.001 %	Strontium (Sr) .....	max. 0.005 %
Calcium (Ca) .....	max. 0.01 %	Zinc (Zn) .....	max. 0.001 %

Code	Capacity
M1001-3-0500	500 g

## MANGANESE STANDARD SOLUTION 1000MG/L FOR AA



Synonyms:

**Physical data:**

- Density: ~ 1.01 g/cm<sub>3</sub>
- Solub. in water (20 °C): miscible
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 0

**Safety:**

- R: 36/38
- S: 26-37
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- PAX: 818
- CAO: 820
- LGK: 8 B

### M1003-0 Manganese standard solution 1000mg/l for AA (manganese nitrate in nitric acid 0.5 mol/l)

HS-No: 3822 00 00 00

Composition .....	1000±5 mg/l
-------------------	-------------

Code	Capacity
M1003-0-0500	500 ml

## MERCURY STANDARD SOLUTION 1000MG/L FOR AA



Synonyms:

**Physical data:**

- density: ~ 1.05 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- pH (20 °C) < 1

**Safety:**

- R: 20/21/22-33-34
- S: 26-36/37/39-45

**Transport/storage:**

- ADR: 8 CT1 III UN 2922
- IMDG: 8 III UN 2922
- IATA/ICAO: 8 III UN 2922
- PAX: 818

- CAO: 820

- LGK: 8 B

- Disposal:

**Special regulations:**

- Restricted chemical

### M1005-0 Mercury standard solution 1000 mg/l for AA (mercury (II) nitrate monohydrate in nitric acid 2 mol/l)

HS-No: 3822 00 00 00

Composition .....	1000±5 mg/l
-------------------	-------------

Code	Capacity
M1005-0-0500	500 ml

## MAGNESIUM CARBONATE BASIC

### Synonyms:

- $\sim 4\text{MgCO}_3 \cdot \text{Mg}(\text{OH})_2 \cdot 5\text{H}_2\text{O}$
- M = 485 g/mol
- CAS [12125-28-9]
- EC number: 235-192-7
- Bulk density:  $\sim 110 - 180 \text{ kg/cm}^3$
- Solub. in water (20 °C): insoluble
- Melting point: 700 °C
- pH (50 g/l H<sub>2</sub>O suspension, 20 °C)  $\sim 10.5$

### Safety:

- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### Physical data:

- Form: Solid
- Spec. density: 2.16 g/cm<sup>3</sup>

### Toxicological:

- WGK: 0

### M1010-1 Magnesium carbonate basic, reagent grade

HS-No: 2836 99 11 00

Assay (complexometric, Mg) .....	min. 24.0 %	Barium and strontium (as Ba) .....	max. 0.001 %
Substances soluble in water .....	mx. 0.5 %	Calcium (Ca) .....	max. 0.001 %
Substances insoluble in hydrochloric acid .....	max. 0.005 %	Copper (Cu) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.005 %	Iron (Fe) .....	max. 0.001 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.003 %	Potassium (K) .....	max. 0.001 %
Total nitrogen (N) .....	max. 0.001 %	Sodium (Na) .....	max. 0.2 %
Heavy metals (as Pb) .....	max. 0.001 %	Lead (Pb) .....	max. 0.001 %
		Zinc (Zn) .....	max. 0.0005 %

Code	Capacity
M1010-1-0250	250 g

## MAGNESIUM CHLORIDE HEXAHYDRATE

### Synonyms:

- $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$
- M = 203.31 g/mol
- CAS [7791-18-6]
- EC number: 232-094-6
- Solub. in water (20 °C): 1670 g/l
- Melting point:  $\sim 117 \text{ }^\circ\text{C}$  (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5.0 - 6.5

### Safety:

- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### Physical data:

- Spec. density:  $\sim 1.57 \text{ g/cm}^3$

### Toxicological:

- LD 50 (oral, rat): 8100 mg/kg
- WGK: 0

### M1014-1 Magnesium chloride hexahydrate, reagent grade

HS-No: 2827 31 00 00

Assay (complexometric) .....	min. 99.5 %	Calcium (Ca) .....	max. 0.01 %
Insoluble in water .....	max. 0.005 %	Potassium (K) .....	max. 0.005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0005 %	Sodium (Na) .....	max. 0.005 %
Nitrate (NO <sub>3</sub> ) .....	max. 0.001 %	Strontium (Sr) .....	max. 0.005 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.002 %	Heavy metals (as Pb) .....	max. 0.0005 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.002 %	Iron (Fe) .....	max. 0.0005 %
Barium (Ba) .....	max. 0.005 %	Manganese (Mn) .....	max. 0.0005 %

Code	Capacity
M1014-1-0500	500 g
M1014-1-1000	1 kg

## MAGNESIUM HYDROXIDE CARBONATE PENTAHYDRATE

### Synonyms: Magnesium carbonate basic

- $4\text{MgCO}_3 \cdot \text{Mg}(\text{OH})_2 \cdot 5\text{H}_2\text{O}$
- M = 485 g/mol
- CAS [12125-28-9]
- EC number: 235-192-7
- Bulk density:  $\sim 110 - 180 \text{ kg/cm}^3$
- Solub. in water (20 °C): insoluble
- Melting point: 700 °C
- pH (50 g/l H<sub>2</sub>O suspension, 20 °C)  $\sim 10.5$

### Safety:

- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### Physical data:

- Spec. density: 2.16 g/cm<sup>3</sup>

### Toxicological:

- WGK: 0

### M1020-3 Magnesium hydroxide carbonate pentahydrate, extra pure

HS-No: 2836 99 11 00

Assay (as MgO) .....	40 - 45 %
Chloride (Cl) .....	max. 0.1 %
Insoluble in H <sub>2</sub> SO <sub>4</sub> .....	max. 0.1 %
Sulphur compounds (as SO <sub>4</sub> ) .....	max. 0.2 %

Code	Capacity
M1020-3-0500	500 g

## MAGNESIUM NITRATE HEXAHYDRATE



### Synonyms:

- $\text{Mg}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$
- M = 256.41 g/mol
- CAS [13446-18-9]
- EC number: 233-826-7
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5.0 - 7.0

### Transport/storage:

- ADR: 5.1 O2 III UN 1474
- IMDG: 5.1 III UN 1474
- IATA/ICAO: 5.1 III UN 1474
- PAX: 516
- CAO: 518
- LGK: 5.1 B
- Disposal: 14

### Physical data:

- Spec. density: 1.46 g/cm<sup>3</sup>
- Solub. in water (20 °C): 1250 g/l
- Melting point:  $\sim 89 - 95 \text{ }^\circ\text{C}$  (decomposes)

### Toxicological data:

- LD 50 (oral, rat): 5440 mg/kg
- WGK: 0
- R: 8
- S: 24/25

### M1021-1 Magnesium nitrate hexahydrate, reagent grade

HS-No: 2834 29 80 00

Assay (complexometric) .....	min. 99.5 %	Barium, strontium (as Ba) .....	max. 0.002 %
Insoluble in water .....	max. 0.005 %	Calcium (Ca) .....	max. 0.005 %
pH (5%, H <sub>2</sub> O) .....	5 - 7	Heavy metals (as Pb) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.001 %	Iron (Fe) .....	max. 0.0005 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.002 %	Manganese (Mn) .....	max. 0.0005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0005 %	Potassium (K) .....	max. 0.0005 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %	Sodium (Na) .....	max. 0.0005 %
Arsenic (As) .....	max. 0.0001 %		

Code	Capacity
M1021-1-0500	500 g
M1021-1-1000	1 kg

## MAGNESIUM OXIDE

### Synonyms:

- MgO
- M = 40.30 g/mol
- CAS [13009-48-4]
- EC number: 215-171-9
- Solub. in water (20 °C): insoluble
- Melting point: -2800 °C
- Boiling point: 3600 °C
- pH (saturated solution H<sub>2</sub>O, 20 °C) -10

### Safety:

- S: 22
- Poison class CH (Swiss): 4

### Physical data:

- Spec. density: 3.58 g/cm<sup>3</sup>
- Bulk density: ~ 200 kg/cm<sup>3</sup>

### Toxicological:

- MAK: 4mg/m<sup>3</sup>
- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### M1029-3 Magnesium oxide, extra pure

Assay (complexometric) .....	min. 98 %	Copper (Cu) .....	max. 0.0005 %
Insoluble in acetic acid .....	max. 0.1 %	Heavy metals (as Pb) .....	max. 0.002 %
Soluble in water .....	max. 1 %	Iron (Fe) .....	max. 0.05 %
Chloride (Cl) .....	max. 0.05 %	Lead (Pb) .....	max. 0.0005 %
Sulphate (SO <sub>4</sub> ) .....	max. 0.5 %	Zinc (Zn) .....	max. 0.0025 %
Arsenic (As) .....	max. 0.0002 %	Loss on calcinations (900 °C) .....	max. 5 %
Calcium (Ca) .....	max. 1 %		

HS-No: 2519 90 10 00

Code	Capacity
M1029-3-0500	500 g

## MAGNESIUM



### Synonyms:

- Mg
- M = 24.31 g/mol
- CAS [7439-95-4]
- EC number: 231-104-6

### Toxicological data:

- WGK: 0

### Transport/storage:

- ADR: 4.1 F3 III UN 1869
- IMDG: 4.1 III UN 1869
- PAX: 419
- CAO: 420
- LGK: 4.3
- Disposal: 26

### Physical data:

- Spec. density: 1.75 g/cm<sup>3</sup>
- Solub. in water (20 °C): insoluble
- Melting point: 651 °C
- Boiling point: 1107 °C

### Safety:

- EC Index no.: 012-002-0-9
- S: 7/8-43.6
- Poison class CH (Swiss): F

### M1032-3 Magnesium powder, extra pure

Assay (complexometric) .....	min. 99 %
Insoluble in HCl .....	max. 0.05 %
Iron (Fe) .....	max. 0.05 %

HS-No: 8104 30 00 00

Code	Capacity
M1032-3-0250	250 g

## MAGNESIUM SULFATE ANHYDROUS

### Synonyms:

- MgSO<sub>4</sub>
- M = 120.37 g/mol
- CAS [7487-88-9]
- EC number: 231-298-2
- Bulk density: ~ 600 kg/cm<sup>3</sup>
- Solub. in water (40 °C): 450 g/l
- Melting point: 1124 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 7.9

### Safety:

- Poison class CH (Swiss): F

### Physical data:

- Spec. density: 2.66 g/cm<sup>3</sup>

### Toxicological:

- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### M1035-1 Magnesium sulfate anhydrous, reagent grade

Assay (complexometric) .....	min. 98 %	Sodium chloride (NaCl) .....	max. 0.1 %
Calcium sulfate (CaSO <sub>4</sub> ) .....	max. 0.5 %	Iron (Fe) .....	max. 0.01 %
Potassium chloride (KCl) .....	max. 0.1 %	Manganese (Mn) .....	max. 0.11 %
Potassium sulfate (K <sub>2</sub> SO <sub>4</sub> ) .....	max. 0.6 %	Loss on drying (600 °C) .....	max. 1 %

HS-No: 2833 21 00 00

Code	Capacity
M1035-1-0500	500 g

## MAGNESIUM SULFATE HEPTAHYDRATE

### Synonyms: Bitter salt, Epsom salt, Sulfuric acid magnesium salt heptahydrate

- MgSO<sub>4</sub>·7H<sub>2</sub>O
- M = 246.48 g/mol
- CAS [10034-99-8]
- EC number: 231-298-2
- Bulk density: ~900 kg/cm<sup>3</sup>
- Solub. in water (20 °C): 710 g/l
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5.0 - 8.2

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### Physical data:

- Spec. density: 1.68 g/cm<sup>3</sup>
- Bulk density: ~900 kg/cm<sup>3</sup>

### Toxicological data:

- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### Safety:

- Poison class CH (Swiss): F

### M1045-1 Magnesium nitrate heptahydrate, reagent grade

Assay (complexometric) .....	min. 99.5 %	Heavy metals (as Pb) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	5 - 8	Iron (Fe) .....	max. 0.0001 %
Chloride (Cl) .....	max. 0.0003 %	Lead (Pb) .....	max. 0.0001 %
Total N .....	max. 0.002 %	Manganese (Mn) .....	max. 0.0005 %
Calcium (Ca) .....	max. 0.005 %	Potassium (K) .....	max. 0.001 %
Copper (Cu) .....	max. 0.0001 %	Sodium (Na) .....	max. 0.001 %

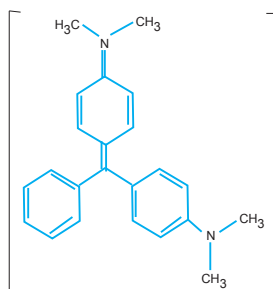
HS-No: 2833 21 00 00

Code	Capacity
M1045-1-0500	500 g
M1045-1-1000	1 kg

## MALACHITE GREEN OXALATE, C.I. 42000



### Synonyms: Diamond green B



-  $C_{50}H_{52}O_8N_4 \cdot H_2C_2O_4$   
- M = 927.02 g/mol  
- CAS [2437-29-8]  
- EC number: 219-441-7

- Melting point: ~ 159 °C  
- Boiling point: 3600 °C  
- pH (10 g/l  $H_2O$ , 24 °C) 2.4

- R: 21/22  
- S: 24/25-37-46  
- Poison class CH (Swiss): 3

#### Physical data:

- Form: Solid  
- Bulk density: ~ 400 - 500 kg/m<sup>3</sup>  
- Solub. in water (24 °C): insoluble

#### Toxicological data:

- WGK: 3

#### Safety:

- EC Index no.: 607-007-0-3

#### Transport/storage:

- ADR: 6.1 T2 III UN 2811  
- IMDG: 6.1 III UN 2811  
- IATA/ICAO: 6.1 III UN 2811  
- PAX: 619  
- CAO: 619  
- LGK: 10-13

### M1050-1 Malachite green oxalate, C.I. 42000, reagent and microscopy grade

HS-No: 3204 13 00 00

Identity .....	passes test	TLC test .....	passes test
Absorption maximum $\lambda$ (water) .....	616 - 620 nm	Loss on drying (110 °C) .....	max. 7 %
Absorptivity (A1%/1 cm; $\lambda$ max, 0.003 g/l, water) .....	1730 - 1960		

Code	Capacity
M1050-1-0101	100 g

## MALACHITE GREEN

### Synonyms:

-  $C_{23}H_{25}ClN_2$   
- M = 929.02 g/mol  
- CAS [2437-29-8]

### M1050-3 Malachite green, extra pure

Identification test .....	passes test	Loss on drying .....	max. 3.5 %
Sensitivity test to tungsten .....	passes test	Residue after ignition (as sulfate) .....	max. 2.0 %

Code	Capacity
M1050-3-0500	500 g

## MANGANESE (II) ACETATE TETRAHYDRATE



### Synonyms:

-  $Mn(C_2H_3O_2)_2 \cdot 4H_2O$   
- M = 245.09 g/mol  
- CAS [6156-78-1]  
- EC number: 211-334-3

#### Physical data:

- Spec. density: 1.59 g/cm<sup>3</sup>

#### Safety:

- R: 36/37/38  
- S: 26-36

### M1052-1 Manganese (II) acetate tetrahydrate, reagent grade

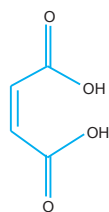
Assay .....	min. 99.0 %	Iron (Fe) .....	max. 0.001 %
Appearance of solution .....	passes test	Zinc (Zn) .....	max. 0.02 %
Insolubility matter in water .....	max. 0.005 %	Heavy metals (as Pb) .....	max. 0.002 %
Chloride (Cl) .....	max. 0.005 %	Substance not precipitated by ammonium sulfide (as sulfate) .....	max. 0.2 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.005 %		

Code	Capacity
M1052-1-0500	500 g

## MALEIC ACID



### Synonyms: cis-Butenedioic acid



-  $C_4H_4O_4$   
- M = 116.07 g/mol  
- CAS [110-16-7]  
- EC number: 203-742-5

#### Physical data:

- Spec. density: 1.59 g/cm<sup>3</sup>  
- Bulk density: 750 - 800 kg/m<sup>3</sup>  
- Solub. in water (25 °C): 788 g/l  
- Melting point: 133 °C  
- Boiling point: 135 °C (decomposes)

- Flash point: 127 °C

- Vapour pressure: (20 °C) < 0.1 hPa

#### Toxicological data:

- LD 50 (oral, rat): 708 mg/kg  
- WGK: 1

#### Safety:

- EC Index no.: 607-095-00-3  
- R: 22-36/37/38

- S: 26-28.1-37-46

- Poison class CH (Swiss): 4

#### Transport/storage:

- ADR: 8 C4 III UN 3261  
- IMDG: 8 III UN 3261  
- IATA/ICAO: 8 III UN 3261  
- PAX: 822  
- CAO: 823  
- LGK: 8  
- Disposal: 4

### M1061-3 Maleic acid, extra pure

HS-No: 2917 19 90 90

Assay (acidimetric, referred to anhydrous substance) .....	min. 99 %	Iron (Fe) .....	max. 0.0005 %
Appearance of solution 10% in $H_2O$ .....	clear and colourless	Sulfated ash .....	max. 0.1 %
Fumaric acid (TCL) .....	max. 1.5 %	Water .....	max. 2 %
Heavy metals (as Pb) .....	max. 0.001 %	Residual solvents (Ph/Eur/ICH) .....	excluded by production process

Code	Capacity
M1061-3-0500	500 g

## MANGANESE (II) CHLORIDE TETRAHYDRATE



### Synonyms:

-  $MnCl_2 \cdot 4H_2O$   
- M = 197.91 g/mol  
- CAS [13446-4-9]  
- EC number: 231-869-6

- Solub. in water (20 °C): soluble  
- Melting point: 58 °C  
- pH (50 g/l  $H_2O$ , 20 °C) ~ 4 - 6

#### Physical data:

- Spec. density: 2.01 g/cm<sup>3</sup>  
- Bulk density: ~ 1150 kg/m<sup>3</sup>

#### Toxicological data:

- LD 50 (oral, rat): 1484 mg/kg  
- WGK: 1

#### Safety:

- R: 22  
- S: 46  
- Poison class CH (Swiss): 4

#### Transport/storage:

- LGK: 10-13  
- Disposal: 15

**M1067-1 Manganese (II) chloride tetrahydrate, reagent grade**

HS-No: 2827 39 80 90

Assay .....	min. 99 %	Barium (Ba) .....	max. 0.005 %
Insolubility matter in water .....	max. 0.005 %	Heavy metals (as Pb) .....	max. 0.0005 %
sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Alkali metals and alkali earth metals (as sulfate) .....	max. 0.2 %
Iron (Fe) .....	max. 0.0002 %	Oxidizing and reducing substances	passes test
Zinc (Zn) .....	max. 0.02 %		

Code	Capacity
M1067-1-0500	500 g

**M1067-3 Manganese (II) chloride tetrahydrate, extra pure**

HS-No: 2827 39 80 90

Assay (complexometric) .....	min. 99 %	Iron (Fe) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	4 - 6	Lead (Pb) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Nickel (Ni) .....	max. 0.005 %
Calcium (Ca) .....	max. 0.01 %	Zinc (Zn) .....	max. 0.005 %
Heavy metals (as Pb) .....	max. 0.002 %		

Code	Capacity
M1067-3-0500	500 g

**MANGANESE (II) SULFATE MONOHYDRATE**

Synonyms:

- MnSO<sub>4</sub>·H<sub>2</sub>O
- M = 169.02 g/mol
- CAS [10034-96-5]
- EC number: 232-089-9

**Physical data:**

- Spec. density: 2.95 g/cm<sup>3</sup>
- Bulk density: ~ 1000 - 1200 kg/m<sup>3</sup>
- Solub. in water (20 °C): 762 g/l
- Melting point: 117 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C) 3.0 - 3.5

**Toxicological data:**

- MAK: 0.5 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 025-003-00-4
- R: 48/20/22-51/53
- S: 22-46-61
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- PAX: 911
- CAO: 911
- LGK: 10-13
- Disposal: 15

**M1070-1 Manganese (II) sulfate monohydrate, reagent grade**

HS-No: 2833 29 90 00

Assay (complexometric) .....	min. 99 %	Magnesium (Mg) .....	max. 0.005 %
Insoluble in water .....	max. 0.01 %	Nickel (Ni) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.001 %	Potassium (K) .....	max. 0.005 %
Calcium (Ca) .....	max. 0.005 %	Sodium (Na) .....	max. 0.005 %
Copper (Cu) .....	max. 0.0002 %	Zinc (Zn) .....	max. 0.001 %
Iron (Fe) .....	max. 0.0005 %	KMnO <sub>4</sub> red matter (as O) .....	max. 0.0005 %
Lead (Pb) .....	max. 0.0002 %	Loss on calcinations (500 °C) .....	10 - 12 %

Code	Capacity
M1070-1-0500	500 g

**MANGANESE (IV) OXIDE**

Synonyms: Manganese dioxide, Pyrolusite, Black manganese oxide, Manganese superoxide

- MnO<sub>2</sub>
- M = 86.94 g/mol
- CAS [1313-13-9]
- EC number: 215-202-6

**Physical data:**

- Spec. density: 5.03 g/cm<sup>3</sup>
- Bulk density: ~ 1000 kg/m<sup>3</sup>
- Solub. in water (20 °C): insoluble
- Melting point: 535 °C (decomposes)
- pH (200 g/l H<sub>2</sub>O, 20 °C) 4.0 - 5.5

**Toxicological data:**

- MAK: 0.5 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 025-001-00-3
- R: 20/22
- S: 25-46
- Poison class CH (Swiss): 5

**Transport/storage:**

- ADR: 5.1 O2 II UN 1479
- IMDG: 5.1 II UN 1479
- IATA/ICAO: 5.1 II UN 1479
- PAX: 508
- CAO: 511
- LGK: 5.1 B
- Disposal: 15

**M1080-3 Manganese (IV) oxide 95% precipitate, extra pure**

HS-No: 2820 10 00 00

Assay (permanganometric) .....	approx. 95 %
Silicium dioxide (SiO <sub>2</sub> ) .....	max. 3 %
Iron (Fe) .....	max. 1 %
Loss on drying (105 °C) .....	max. 1 %

Code	Capacity
M1080-3-0500	500 g

**MERCURY**

Synonyms:

- Hg
- M = 200.59 g/mol
- CAS [7439-97-6]
- EC number: 231-106-7

**Physical data:**

- Density: 13.55 g/cm<sup>3</sup>
- Solub. in water (20 °C): 0.0036 g/l
- Melting point: -39 °C
- Boiling point: 357 °C
- Vapour pressure: (20 °C) 0.0017 hPa
- pH ~7

**Toxicological data:**

- MAK: 0.1 mg/m<sup>3</sup>
- WGK: 3

**Safety:**

- EC Index no.: 080-001-00-0
- R: 23-33-50/53
- S: 7-45-60-61
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 C9 III UN 2809
- IMDG: 8 III UN 2809
- IATA/ICAO: 8 III UN 2809
- PAX: 803
- CAO: 803
- LGK: 6.1 B
- Disposal: 20

**M1092-3 Mercury, extra pure**

HS-No: 2805 40 90 00

Assay .....	min. 99.6 %	Iron (Fe) .....	max. 0.0005 %
Insoluble in HNO <sub>3</sub> .....	max. 0.002 %	Loss on drying .....	max. 0.003 %
Heavy metals (as Pb) .....	max. 0.0005 %		

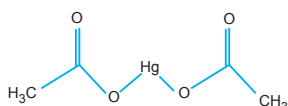
Code	Capacity
M1092-3-1000	1 kg



## MERCURY (II) ACETATE



Synonyms: Acetic acid mercury (II) salt, Mercuric salts



-  $\text{Hg}(\text{CH}_3\text{COO})_2$   
 - M = 318.68 g/mol  
 - CAS [1600-27-7]  
 - EC number: 216-491-1

**Physical data:**  
 - Spec. density: 3.27 g/cm<sup>3</sup>  
 - Bulk density: ~ 1000 kg/m<sup>3</sup>  
 - Solub. in water (20 °C): 400 g/l  
 - Melting point: 178 - 180 °C

**Toxicological data:**  
 - LD 50 (oral, rat): 40.9 mg/kg  
 - WGK: 3

**Safety:**  
 - EC Index no.: 080-002-00-6  
 - R: 26/27/28-33-50/53  
 - S: 13-28.1-36/37-45-60-61

**Transport/storage:**  
 - ADR: 6.1 T5 II UN 1629  
 - IMDG: 6.1 II UN 1629  
 - IATA/ICAO: 6.1 II UN 1629  
 - PAX: 613  
 - CAO: 615  
 - LGK: 6.1 B  
 - Disposal: 20

### M2010-1 Mercury (II) acetate, reagent grade

HS-No: 2915 29 00 90

Assay (complexometric) .....	min. 99 %	Heavy metals (as Pb) .....	max. 0.002 %
Insoluble in dil. acetic acid .....	max. 0.01 %	Iron (Fe) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.005 %	Mercury (I) (as Hg) .....	max. 0.3 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.005 %	Sulfated ash after reduction .....	max. 0.02 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %		

Code	Capacity
M2010-1-0101	100 g
M2010-1-0250	250 g

## MERCURY (II) CHLORIDE



Synonyms:

-  $\text{HgCl}_2$   
 - M = 271.50 g/mol  
 - CAS [7487-94-7]  
 - EC number: 231-299-8

**Physical data:**  
 - Spec. density: 5.44 g/cm<sup>3</sup>  
 - Bulk density: ~ 200 kg/m<sup>3</sup>  
 - Solub. in water (20 °C): 74 g/l  
 - Melting point: 280.7 °C  
 - Boiling point: 302 °C

- Vapour pressure: (20 °C) 0.0001 hPa  
 - pH (15 g/l H<sub>2</sub>O, 20 °C) 3.2  
 - S: 36/37/39-45-60-61  
 - Poison class CH (Swiss): 2

**Toxicological data:**  
 - LD 50 (oral, rat): 1 mg/kg  
 - MAK: 0.1 mg/m<sup>3</sup>  
 - WGK: 3

**Safety:**  
 - EC Index no.: 080-010-00-X  
 - R: 28-34-48/24/25-50/53

**Transport/storage:**  
 - ADR: 6.1 T5 II UN 1624  
 - IMDG: 6.1 II UN 1624  
 - IATA/ICAO: 6.1 II UN 1624  
 - PAX: 613  
 - CAO: 615  
 - LGK: 6.1 B  
 - Disposal: 20

### M2016-1 Mercury (II) chloride, reagent grade

HS-No: 2827 39 80 90

Assay (complexometric) .....	min. 99 %	Magnesium (Mg) .....	max. 0.001 %
Insoluble in ether .....	passes test	Mercury (I) chloride (Hg <sub>2</sub> Cl <sub>2</sub> ) .....	max. 0.05 %
Insoluble in water .....	max. 0.01 %	Nickel (Ni) .....	max. 0.0005 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.001 %	Potassium (K) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.02 %	Silver (Ag) .....	max. 0.0005 %
Total N .....	max. 0.002 %	Sodium (Na) .....	max. 0.005 %
Calcium (Ca) .....	max. 0.001 %	Zinc (Zn) .....	max. 0.0005 %
Cadmium (Cd) .....	max. 0.0005 %	Not red. matter with HCOOH	
Copper (Cu) .....	max. 0.0005 %	(calcination residue, as sulfate) .....	max. 0.01 %
Heavy metals (as Pb) .....	max. 0.001 %	KMnO <sub>4</sub> red. matter (as O) .....	max. 0.001 %
Iron (Fe) .....	max. 0.0005 %	Loss on drying (on P <sub>2</sub> O <sub>4</sub> ) .....	max. 1 %
Lead (Pb) .....	max. 0.0005 %		

Code	Capacity
M2016-1-0101	100 g
M2016-1-0250	250 g
M2016-1-1000	1 kg

## MERCURY (II) IODIDE



Synonyms:

-  $\text{HgI}_2$   
 - M = 454.40 g/mol  
 - CAS [7774-29-0]  
 - EC number: 231-873-8

**Physical data:**  
 - Spec. density: (25 °C) 6.36 g/cm<sup>3</sup>  
 - Bulk density: ~ 1350 kg/m<sup>3</sup>  
 - Solub. in water (25 °C): 0.06 g/l  
 - Melting point: 259 °C  
 - Boiling point: 354 °C

- Vapour pressure: (60 °C) ~ 0.001 hPa  
 - pH (50 g/l H<sub>2</sub>O, 20 °C) 6 - 7  
 - S: 13-28.1-36/37-45-60-61  
 - Poison class CH (Swiss): 2

**Toxicological data:**  
 - LD 50 (oral, rat): 18 mg/kg  
 - MAK: 0.1 mg/m<sup>3</sup>  
 - WGK: 3

**Safety:**  
 - EC Index no.: 080-002-00-6  
 - R: 26/27/28-33-50/53

**Transport/storage:**  
 - ADR: 6.1 T5 II UN 1638  
 - IMDG: 6.1 II UN 1638  
 - IATA/ICAO: 6.1 II UN 1638  
 - PAX: 613  
 - CAO: 615  
 - LGK: 6.1 B  
 - Disposal: 20

### M2023-1 Mercury (II) iodide, reagent grade

HS-No: 2827 60 00 90

Assay (argentometric) .....	min. 99 %	Mercury (I) (as Hg) .....	max. 0.1 %
Insoluble in a solution of KI .....	passes test	Other heavy metals (as Pb) .....	max. 0.001 %
Insoluble mercury salts (as Hg) .....	max. 0.05 %	Not red. Matter with HCOOH	
Iron (Fe) .....	max. 0.001 %	(calcination residue, as sulfate) .....	max. 0.02 %

Code	Capacity
M2023-1-0250	250 g
M2023-1-0500	500 g



## MERCURY (II) NITRATE MONOHYDRATE



Synonyms: Mercury nitrate, Mercury pernitrate

- $\text{Hg}(\text{NO}_3)_2 \cdot \text{H}_2\text{O}$
- M = 342.62 g/mol
- CAS [7783-34-8]
- EC number: 233-152-3

**Toxicological data:**  
- MAK: 0.1 mg/m<sup>3</sup>

**Safety:**  
- EC Index no.: 080-002-00-6  
- R: 26/27/28-33-50/53  
- S: 13-28.1-45-60-61

**Special regulations:**  
- Restricted chemical

### M2025-1 Mercury (II) nitrate monohydrate, reagent grade

HS-No: 2834 29 30 00

Assay (complexometric) .....	min. 99 %	Potassium (K) .....	max. 0.005 %
Chloride (Cl) .....	max. 0.002 %	Sodium (Na) .....	max. 0.005 %
Sulphate (SO <sub>4</sub> ) .....	max. 0.002 %	Mercury (I) (as Hg) .....	max. 0.2 %
Copper (Cu) .....	max. 0.0005 %	Residue after reduction .....	max. 0.01 %
Iron (Fe) .....	max. 0.001 %		

Code	Capacity
M2025-1-0100	100 g
M2025-1-0500	500 g

## MERCURY (II) SULFATE



Synonyms: Mercury bisulfate

- $\text{HgSO}_4$
- M = 296.65 g/mol
- CAS [7783-35-9]
- EC number: 231-992-5

- Ignition temp.: > 450 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 1

- R: 26/27/28-33-50/53  
- S: 13-28.1-36/37-45-60-61

**Physical data:**

- Spec. density: ~6.47 g/cm<sup>3</sup>
- Bulk density: ~6700 kg/m<sup>3</sup>
- Solub. in water (20 °C): hydrolysis reaction

**Toxicological data:**

- LD 50 (oral, rat): 57 mg/kg
- MAK: 0.1 mg/m<sup>3</sup>
- WGK: 3

**Safety:**

- EC Index no.: 080-002-00-6

**Transport/storage:**

- ADR: 6.1 T5 II UN 1645
- IMDG: 6.1 II UN 1645
- IATA/ICAO: 6.1 II UN 1645
- PAX: 613
- CAO: 615
- LGK: 6.1 B
- Disposal: 20

### M2038-1 Mercury (II) sulfate, reagent grade

HS-No: 2833 29 70 00

Assay (complexometric) .....	min. 99 %	Magnesium (Mg) .....	max. 0.003 %
Chloride (Cl) .....	max. 0.003 %	Nickel (Ni) .....	max. 0.001 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.005 %	Potassium (K) .....	max. 0.002 %
Cadmium (Cd) .....	max. 0.0001 %	Zinc (Zn) .....	max. 0.001 %
Calcium (Ca) .....	max. 0.003 %	Sulfated ash after reduction .....	max. 0.02 %
Copper (Cu) .....	max. 0.0005 %	Mercury (I) (as Hg) .....	max. 0.05 %
Iron (Fe) .....	max. 0.001 %	Suitability for COD .....	passes test
Lead (Pb) .....	max. 0.0005 %		

Code	Capacity
M2038-1-0250	250 g

## Methyl t-Butyl Ether



Synonyms: Mercury bisulfate

- Formula:  $(\text{CH}_3)_3\text{COCH}_3$
- F.W.: 88.14
- CAS: 1634-04-4

**Physical Data:**

- Eluotropic value (E°) (on Alumina): 0.35
- Polarity Index (P'): 2.5
- Viscosity (cP, 25 °C): 0.28
- Density (g/ml, 25 °C): 0.740
- Boiling point (°C): 55
- Solubility of water (% , 20 °C): 1.5
- Refractive index (25 °C): 1.366

### M2060-4 Methyl t-Butyl Ether, Pesticide Grade

HS-No: 2905 14 10

See specification in Solvents Specification - 44

Code	Capacity
M2060-4-1001	1.0 L
M2060-4-4001	4.0 L

### M2060-11 Methyl t-Butyl Ether, Pesticide Grade

HS-No: 2905 14 10

See specification in Solvents Specification - 24

Code	Capacity
M2060-11-1001	1.0 L
M2060-11-4001	4.0 L

### M2060-12 Methyl t-Butyl Ether, Ultimate Grade

HS-No: 2905 14 10

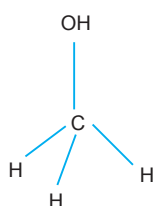
See specification in Solvents Specification - 57

Code	Capacity
M2060-12-1001	1.0 L
M2060-12-4001	4.0 L

# METHANOL



Synonyms: Methyl alcohol, Carbinol, Methynol, Wood alcohol



- CH<sub>3</sub>OH
- M = 32.04 g/mol
- CAS [67-56-1]
- EC number: 200-659-6

### Physical data:

- Density: 0.79 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -98 °C
- Boiling point: 64.5 °C
- Flash point: 11 °C
- Ignition temp.: 455 °C

- Vapour pressure: (20 °C) 128 hPa
- Refraction index: (n 20 °C/D) 1.3288
- Viscosity: (20 °C) 0.52 mPas
- Dipolar moment: (20 °C) 1.7 Debye
- Dielectric const.: (25 °C) 32.6
- Evap. heat: (65 °C) 1100 kJ/kg
- Saturation conc.: (20 °C) 166 g/m<sup>3</sup>
- Expl. limit (upper): 44 Vol%
- Expl. limit (lower): < 5.5 Vol%

### Toxicological data:

- LD 50 (oral, rat): 5628 mg/kg
- MAK: 200 ml/m<sup>3</sup>, 270 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 603-001-00-X
- R: 11-23/24/25-39/23/24/25
- S: 7-16-36/37/45
- VbF class: B
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 3 FT 1 II UN 1230
- IMDG: 3 II UN 1230
- IATA/ICAO: 3 II UN 1230
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

## M2064-1 Methanol anhydrous, reagent grade

HS-No: 2905 11 00 00

Assay (G.C) .....	min. 99.9 %	Iron (Fe) .....	max. 0.0001 %
Free acid (as HCOOH) .....	max. 0.002 %	Acetone (G.C) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.0001 %	Substances darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Sulfates (SO <sub>4</sub> ) .....	max. 0.0005 %	Non-volatile matter .....	max. 0.0005 %
Heavy metals (as Pb) .....	max. 0.0002 %	Water .....	max. 0.003 %

Code	Capacity
M2064-1-2501	2.5 L

## M2097-1 Methanol, reagent grade

HS-No: 2905 11 00 00

Assay (GC) .....	min. 99.8 %	Lithium (Li) .....	max. 0.02 ppm
Free Acid (as Methanoic acid) .....	max. 20 ppm	Magnesium (Mg) .....	max. 0.1 ppm
Free Alkali (as Ammonia) .....	max. 1.0 ppm	Manganese (Mn) .....	max. 0.02 ppm
Spec. resistance .....	min. 0.5 MW cm	Molybdenum (Mo) .....	max. 0.05 ppm
Heavy metals (as Pb) .....	max. 0.2 ppm	Sodium (Na) .....	max. 0.5 ppm
Silver (Ag) .....	max. 0.02 ppm	Nickel (Ni) .....	max. 0.02 ppm
Aluminium (Al) .....	max. 0.2 ppm	Lead (Pb) .....	max. 0.05 ppm
Arsenic (As) .....	max. 0.01 ppm	Platinum (Pt) .....	max. 0.2 ppm
Gold (Au) .....	max. 0.1 ppm	Antimony (Sb) .....	max. 0.01 ppm
Boron (B) .....	max. 0.01 ppm	Tin (Sn) .....	max. 0.1 ppm
Barium (Ba) .....	max. 0.1 ppm	Strontium (Sr) .....	max. 0.02 ppm
Beryllium (Be) .....	max. 0.02 ppm	Titanium (Ti) .....	max. 0.1 ppm
Bismuth (Bi) .....	max. 0.1 ppm	Thallium (Tl) .....	max. 0.05 ppm
Calcium (Ca) .....	max. 0.5 ppm	Vanadium (V) .....	max. 0.05 ppm
Cadmium (Cd) .....	max. 0.05 ppm	Zinc (Zn) .....	max. 0.1 ppm
Cobalt (Co) .....	max. 0.02 ppm	Zirconium (Zr) .....	max. 0.2 ppm
Chromium (Cr) .....	max. 0.02 ppm	Aldehydes and Ketones	
Copper (Cu) .....	max. 0.02 ppm	(as Formaldehyde) .....	max. 10.0 ppm
Iron (Fe) .....	max. 0.1 ppm	Substances reducing KMnO <sub>4</sub> (as O) ...	max. 2.5 ppm
Gallium (Ga) .....	max. 0.02 ppm	Substances discoloured by H <sub>2</sub> SO <sub>4</sub> .....	corresponds
Indium (In) .....	max. 0.02 ppm	Non-volatile matter .....	max. 5.0 ppm
Potassium (K) .....	max. 0.1 ppm	Water .....	max. 500 ppm

Code	Capacity
M2097-1-1000	1.0 L
M2097-1-2500	2.5 L
M2097-1-2501	2.5 L
M2097-1-4000	4.0 L

## M2097-4 Methanol, HPLC grade

HS-No: 2905 11 00 00

See specification in Solvents Specification - 43

Code	Capacity
M2097-4-1001	1.0 L
M2097-4-2501	2.5 L
M2097-4-4001	4.0 L

## M2097-6 Methanol, EC-10

HS-No: 2905 11 00 00

Assay (GC) .....	min. 99.8 %	Potassium (K) .....	max. 0.02 ppm
Free Acid (as Methanoic acid) .....	max. 20 ppm	Lithium (Li) .....	max. 0.01 ppm
Free Alkali (as Ammonia) .....	max. 1.0 ppm	Magnesium (Mg) .....	max. 0.02 ppm
Spec. resistance .....	min. 0.5 MΩ·cm	Manganese (Mn) .....	max. 0.01 ppm
Heavy metals (as Pb) .....	max. 0.1 ppm	Molybdenum (Mo) .....	max. 0.01 ppm
Silver (Ag) .....	max. 0.01 ppm	Sodium (Na) .....	max. 0.1 ppm
Aluminium (Al) .....	max. 0.05 ppm	Nickel (Ni) .....	max. 0.01 ppm
Arsenic (As) .....	max. 0.01 ppm	Lead (Pb) .....	max. 0.01 ppm
Gold (Au) .....	max. 0.02 ppm	Platinum (Pt) .....	max. 0.05 ppm
Boron (B) .....	max. 0.01 ppm	Antimony (Sb) .....	max. 0.01 ppm
Barium (Ba) .....	max. 0.02 ppm	Tin (Sn) .....	max. 0.02 ppm
Beryllium (Be) .....	max. 0.01 ppm	Strontium (Sr) .....	max. 0.01 ppm
Bismuth (Bi) .....	max. 0.02 ppm	Titanium (Ti) .....	max. 0.02 ppm
Calcium (Ca) .....	max. 0.1 ppm	Thallium (Tl) .....	max. 0.01 ppm
Cadmium (Cd) .....	max. 0.01 ppm	Vanadium (V) .....	max. 0.01 ppm
Cobalt (Co) .....	max. 0.01 ppm	Zinc (Zn) .....	max. 0.02 ppm
Chromium (Cr) .....	max. 0.01 ppm	Zirconium (Zr) .....	max. 0.02 ppm
Copper (Cu) .....	max. 0.01 ppm	Aldehydes and Ketones (as	
Iron (Fe) .....	max. 0.05 ppm	Formaldehyde) .....	max. 10.0 ppm
Gallium (Ga) .....	max. 0.01 ppm	Substances reducing KMnO <sub>4</sub> (as O) ...	max. 2.5 ppm
Indium (In) .....	max. 0.01 ppm	Non-volatile matter .....	max. 5.0 ppm
		Water .....	max. 256 ppm

Code	Capacity
M2097-6-4000	4.0 L

**M2097-7 Methanol, EC-10**

HS-No: 2905 11 00 00

Assay .....	min. 99.9 %	Titration
Colour .....	max. 10 APHA	Colorimetric
Acidity .....	max. 0.3 meq/g	-
Alkalinity .....	max. 0.1 meq/g	-
Residue after Evaporation .....	max. 5.0 ppm	Gravimetric
Water .....	max. 0.05 %	kari Fischer Titrates
Chloride (Cl) .....	max. 0.20 ppm	Ion Chromatography
Phosphate (PO <sub>4</sub> ) .....	max. 0.50 ppm	Ion Chromatography
Aluminium (Al) .....	max. 100 ppb	ICP-MS
Arsenic (As) .....	max. 10 ppb	ICP-MS
Barium (Ba) .....	max. 20 ppb	ICP-MS
Boron (B) .....	max. 10 ppb	ICP-MS
Cadmium (Cd) .....	max. 20 ppb	ICP-MS
Calcium (Ca) .....	max. 100 ppb	ICP-MS
Chromium (Cr) .....	max. 20 ppb	ICP-MS
Cobalt (Co) .....	max. 20 ppb	ICP-MS
Copper (Cu) .....	max. 10 ppb	ICP-MS
Gallium (Ga) .....	max. 50 ppb	ICP-MS
Germanium (Ge) .....	max. 100 ppb	ICP-MS
Gold (Au) .....	max. 20 ppb	ICP-MS
Heavy metals (as Pb) .....	max. 100 ppb	ICP-MS
Iron (Fe) .....	max. 100 ppb	ICP-MS
Lead (Pb) .....	max. 100 ppb	ICP-MS

Code	Capacity
M2097-7-2500	2.5 L

Lead (Pb) .....	max. 100 ppb	ICP-MS
Lithium (Li) .....	max. 50 ppb	ICP-MS
Magnesium (Mg) .....	max. 50 ppb	ICP-MS
Manganese (Mn) .....	max. 10 ppb	ICP-MS
Nickel (Ni) .....	max. 10 ppb	ICP-MS
Potassium (K) .....	max. 100 ppb	ICP-MS
Silicon (Si) .....	max. 50 ppb	ICP-MS
Silver (Ag) .....	max. 20 ppb	ICP-MS
Sodium (Na) .....	max. 100 ppb	ICP-MS
Strontium (Sr) .....	max. 10 ppb	ICP-MS
Tin (Sn) .....	max. 50 ppb	ICP-MS
Thallium (Tl) .....	max. 20 ppb	ICP-MS
Zinc (Zn) .....	max. 100 ppb	ICP-MS
Particle Count (> 1.0 µm) .....	max. 10 per m/l	Liquid Particle Counter

**M2097-11 Methanol, Pesticide grade**

HS-No: 2905 11 00 00

See specification in Solvents Specification - 24

Code	Capacity
M2097-11-1001	1.0 L
M2097-11-4001	4.0 L

**M2097-12 Methanol, Ultimate grade**

HS-No: 2905 11 00 00

See specification in Solvents Specification - 16

Code	Capacity
M2097-12-1001	1.0 L
M2097-12-4001	4.0 L

**M2097-13 Methanol, LC-MS grade**

HS-No: 2905 11 00 00

See specification in Solvents Specification - 6

Code	Capacity
M2097-13-1001	1.0 L
M2097-13-4001	4.0 L

**M2097-14 Methanol, BIO grade**

HS-No: 2905 11 00 00

See specification in Solvents Specification - 57

Code	Capacity
M2097-14-1001	1.0 L
M2097-14-4001	4.0 L

**M2097-15 Methanol, Ultra Dry grade**

HS-No: 2905 11 00 00

See specification in Solvents Specification - 63

Code	Capacity
M2097-15-1001	1.0 L
M2097-15-4001	4.0 L

**Methyl Isobutyl Ketone**

- Formula: (CH<sub>3</sub>)<sub>2</sub>CHCH<sub>2</sub>COCH<sub>3</sub>
- F.W.: 100.16
- CAS: 108-10-1

**Physical Data:**

- Eluotropic value (E°) (on Alumina): 0.43
- Polarity index (P<sup>i</sup>): 4.2
- Viscosity (cP, 25 °C): 0.58
- Density (g/ml, 25 °C): 0.801
- Boiling point (°C): 117 ~ 118
- Refractive index (20 °C): 1.3957

**Transport/storage:**

- ADR: 3 II UN 1245
- IMDG: 3 II UN 1245
- IATA/ICAO: 3 II UN 1245

**M2120-4 Methyl Isobutyl Ketone, HPLC grade**

HS-No: 2914 13 00

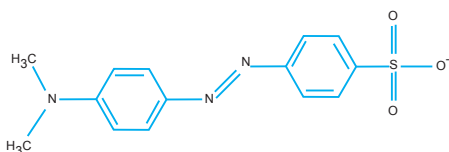
See specification in Solvents Specification - 45

Code	Capacity
M2097-4-1001	1.0 L
M2097-4-4001	4.0 L

## METHYL ORANGE, C.I. 13025



Synonyms: Helianthine, 4-dimethylaminoazobenzene-4'-sulfonic acid sodium salt, Gold orange, Orange III



- C<sub>14</sub>H<sub>14</sub>N<sub>3</sub>NaO<sub>3</sub>S  
- M = 327.34 g/mol  
- CAS [547-58-0]  
- EC number: 208-925-3

**Physical data:**  
- Bulk density: ~ 200 - 400 kg/m<sup>3</sup>  
- Solub. in water (20 °C): ~ 5 g/l  
- pH (5 g/l H<sub>2</sub>O, 20 °C) ~ 6.5

**Toxicological data:**  
- LD 50 (oral, rat):  
60 mg/kg  
- WGK: 3\*

**Safety:**  
- R: 25  
- S: 37-45  
- Poison class CH (Swiss):4

**Transport/storage:**  
- ADR: 6.1 T2 III UN 2811  
- IMDG: 6.1 III UN 2811  
- IATA/ICAO: 6.1 III UN 2811  
- PAX: 619  
- CAO: 619  
- LGK: 6.1 A  
- Disposal: 3

### M2130-0 Methyl orange, C.I. 13025 indicator

HS-No: 2927 00 00 90

pH range (pink to orange-yellow) .... 3.1 - 4.4  
Absorption maximum I<sub>1</sub> (pH 3.1) ..... 501 - 504 nm  
Absorption maximum I<sub>2</sub> (pH 4.4) ..... 467 - 471 nm  
Absorptivity (A1%/1 cm; I<sub>1</sub>, pH 3.1  
on dried material) ..... 1050 - 1150

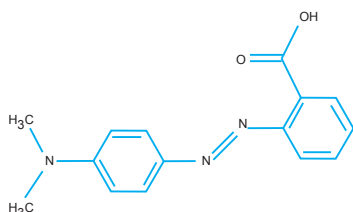
Absorptivity (A1%/1 cm; I<sub>1</sub> pH 4.4  
on dried material) ..... 750 - 850  
Loss on drying (110 °C) ..... max. 5 %

Code	Capacity
M2130-0-0025	25 g
M2130-0-0101	100 g

## METHYL RED, C.I. 13020



Synonyms: 2-[(4-Dimethylamino)phenylazo]benzoic acid, 4-(Dimethylamino)-azobenzene-1,2'-carboxylic acid



- C<sub>15</sub>H<sub>15</sub>N<sub>3</sub>O<sub>2</sub>  
- M = 269.31 g/mol  
- CAS [493-52-7]  
- EC number: 207-776-1

**Physical data:**  
- Bulk density: ~ 300 - 500 kg/m<sup>3</sup>  
- Solub. in water (20 °C): slightly  
soluble  
- Melting point: 178 - 182 °C

**Toxicological data:**  
- WGK: 3\*

**Safety:**  
- Poison class CH (Swiss):4

**Transport/storage:**  
- LGK: 10-13

### M2135-0 Methyl red, C.I. 13020 indicator

HS-No: 2927 00 00 90

pH range (red-violet to  
brownish-yellow) ..... 4.5 - 6.2  
Absorption maximum I<sub>1</sub> (pH 4.5) .... 523 - 526 nm  
Absorption maximum I<sub>2</sub> (pH 6.2) .... 427 - 437 nm  
Absorptivity (A1%/1 cm; I<sub>1</sub> pH 4.5  
on dried material) ..... 1380 - 1480

Absorptivity (A1%/1 cm; I<sub>1</sub> pH 6.2  
on dried material) ..... 700 - 800  
Transition range acc. ACS ..... passes test  
Loss on drying (110 °C) ..... max.0. 5 %

Code	Capacity
M2135-0-0025	25 g
M2135-0-0101	100 g

## METHYL METHACRYLATE



Synonyms: Methyl 2-methylpropenoate, MAA

- C<sub>5</sub>H<sub>8</sub>O<sub>2</sub>  
- M = 100.12 g/mol  
- CAS [80-62-6]  
- EC number: 201-297-1

**Physical data:**  
- Vapour pressure 47 hPa (20 °C)  
- Spec. density 0.94 g/cm<sup>3</sup> (20 °C)  
- Explosive limits 2.1 - 12.5 Vol%  
- Flash point 10 °C  
- Solub. in water 16 g/l (20 °C)  
- Melting point -48 °C

- Boiling point 100 °C  
- Ignition temp. 430 °C

**Toxicological data:**  
- MAK 50 mlm<sup>3</sup> / 210 bg/m<sup>3</sup>  
- VbF-CLASS. AI  
- WGK: 1  
- LD 50 (oral, rat) 7872 mg/kg

**Safety:**  
- Highly flammable, irritant, sensitizing  
- R: 11-36/37/38-43

- S: 9-16-29-33  
- Poison class (CH): 4  
- EC-Index-No. 607-035-00-6

**Transport/storage:**  
- LGK: 3 A  
- Packing-cat A  
- Road/Rail: 3/3 b  
- IMDG-Code 3.2/II UN 1247  
- IATA/DGR 3 II UN 1247  
- CAO: 307  
- PAX: 305

### M2140-1 Methyl methacrylate, reagent grade

HS-No: 2916 14 10 00

Assay ..... min. 99.0 %      Residue after ignition (as sulfate) .... max. 0.03 %  
Density (20 °C) ..... 0.939 - 0.941 g/ml      High polymer ..... passes test  
Free acid (as C<sub>4</sub>H<sub>6</sub>O<sub>2</sub>) ..... max. 0.03 %      Fire retardant (as C<sub>6</sub>H<sub>6</sub>O<sub>2</sub>) ..... 0.01 - 0.02 %

Code	Capacity
M2140-1-0500	500 ml

## METHYLENE BLUE



Synonyms:

- C<sub>16</sub>H<sub>18</sub>ClN<sub>3</sub>S  
- M = 319.86 g/mol  
- CAS [61-73-4]  
- EC number: 200-515-2

**Physical data:**  
- Form: Liquid  
- Density: 0.995 kg/m<sup>3</sup>  
- Flash point: 12 °C

**Safety:**  
- R: 36/38-68  
- S: 26-36/37

### M2153-1 Methylene blue, for microscopy

HS-No: 2927 00 00 90

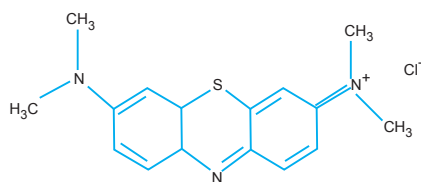
Assay of basic dye ..... min. 82 %      Suitability as biological stain ..... passes test  
Loss on drying (110 °) ..... max. 15 %      Residue on ignition (as SO<sub>4</sub>) ..... max. 0.5 %

Code	Capacity
M2135-0-0025	25 g
M2135-0-0101	1 g

## METHYLENE BLUE, C.I. 52015



Synonyms: 3,7-Bis(dimethylamino) pheno-thiazinium chloride, Solvent blue 8, Methylthyonium chloride, Tetramethylthionine chloride



$\cdot x\text{H}_2\text{O}$  ( $x = 2 - 3$ )

-  $\text{C}_{16}\text{H}_{18}\text{ClN}_3\text{S} \cdot x\text{H}_2\text{O}$  ( $x=2-3$ )  
-  $M = 319.86$  g/mol  
- CAS [61-73-4]  
- EC number: 200-515-2

- Melting point:  $\sim 180$  °C (decomposes)  
- pH (10 g/l  $\text{H}_2\text{O}$ , 20 °C)  $\sim 3$

### Safety:

- R: 22  
- S: 46  
- Poison class CH (Swiss): 3

### Physical data:

- Bulk density:  $\sim 400 - 600$  kg/m<sup>3</sup>  
- Solub. in water (20 °C):  $\sim 50$  g/l

### Toxicological data:

- LD 50 (oral, rat): 1180 mg/kg (anhydrous substance)  
- WGK: 3\*

### Transport/storage:

- LGK: 10-13

### M2153-3 Methylene blue, C.I. 52015, extra pure

HS-No: 3204 13 00 00

Assay (on dried sample) .....	min. 99 %	Zinc (Zn) .....	max. 0.005 %
Insoluble in ethanol 96% .....	max. 0.2 %	Sulfated ash .....	max. 0.2 %
Arsenic (As) .....	max. 0.0005 %	Loss on drying .....	18 - 22 %
Heavy metals (as Pb) .....	max. 0.005 %		

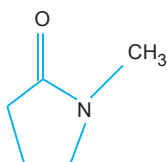
Code	Capacity
M2153-3-0100	100 g

M

## 1-METHYL-2-PYRROLIDONE (N-METHYLPYRROLIDONE)



Synonyms: N-Methylpyrrolidone, N-Methyl-2-pyrrolidinone, NMP



-  $\text{C}_5\text{H}_9\text{NO}$   
-  $M = 99.13$  g/mol  
- CAS [872-50-4]  
- EC number: 212-828-1

### Physical data:

- Form: Liquid  
- Density: 1.03 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- Melting point:  $-24$  °C  
- Boiling point: 202 °C  
- Flash point: 91 °C  
- Ignition temp.: 245 °C

- Vapour pressure: (20 °C) 0.32 hPa  
- Refraction index: (n 20 °C/D) 1.4684  
- Viscosity: (20 °C) 1.67 mPas  
- Dipolar moment: (20 °C) 4.1 Debye  
- Dielectric const.: (25 °C) 33  
- Expl. limit (upper): 9.5 Vol%  
- Expl. limit (lower): 1.3 Vol%  
- pH (100 g/l  $\text{H}_2\text{O}$ , 20 °C) 8.5 - 10.0

### Toxicological data:

- LD 50 (oral, rat): 3598 mg/kg  
- MAK: 19 ml/m<sup>3</sup>, 80 mg/m<sup>3</sup>  
- WGK: 1

### Safety:

- EC Index no.: 606-021-00-7  
- R: 36/38  
- S: 41  
- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13  
- Disposal: 5

### M2160-1 1-Methyl-2-pyrrolidone (N-Methylpyrrolidone), reagent grade

HS-No: 2933 79 00 00

Assay (G.C) .....	min. 99.5 %	Iron (Fe) .....	max. 0.00001 %
Free Alkali (as methylamine) .....	max. 0.01 %	Magnesium (Mg) .....	max. 0.00001 %
Aluminium (Al) .....	max. 0.00005 %	Manganese (Mn) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.00001 %	Nickel (Ni) .....	max. 0.000002 %
Boron (B) .....	max. 0.000002 %	Lead (Pb) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Tin (Sn) .....	max. 0.00001 %
Calcium (Ca) .....	max. 0.00005 %	Zinc (Zn) .....	max. 0.00001 %
Chromium (Cr) .....	max. 0.000002 %	Sulfated Ash .....	max. 0.0005 %
Cobalt (Co) .....	max. 0.000002 %	Water (K.F.) .....	max. 0.05 %
Copper (Cu) .....	max. 0.000002 %		

Code	Capacity
M2160-1-2501	2.5 L

### M2160-4 1-Methyl-2-pyrrolidone (N-Methylpyrrolidone), HPLC grade

HS-No: 2933 79 00 00

See specification in Solvents Specification - 45

Code	Capacity
M2160-4-1001	1.0 L
M2160-4-4001	4.0 L

### M2160-14 1-Methyl-2-pyrrolidone (N-Methylpyrrolidone), HPLC grade

HS-No: 2933 79 00 00

See specification in Solvents Specification - 57

Code	Capacity
M2160-14-1001	1.0 L
M2160-14-4001	4.0 L

## METHYL THYMOL BLUE

Synonyms:

- C<sub>37</sub>H<sub>44</sub>N<sub>2</sub>O<sub>12</sub>S
- M = 756.83 g/mol
- CAS [1945-77-3]

### M2170-1 Methyl thymol blue, reagent grade

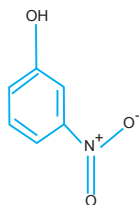
Free thymol blue .....	passes test	Loss on drying .....	max. 15 %
Sensitivity test .....	passes test	Residue after ignition (as sulfate) ....	35 - 42 %

Code	Capacity
M2170-1-0005	5 g

## M-NITROPHENOL



Synonyms: 3-Nitrophenol



- C<sub>6</sub>H<sub>5</sub>NO<sub>3</sub>
- M = 139.11 g/mol
- CAS [554-84-7]
- EC number: 209-073-5

**Physical data:**

- Form: Solid
- Spec. density: 1.49 g/cm<sup>3</sup>
- Bulk density: ~ 640 kg/m<sup>3</sup>
- Solub. in water (20 °C): insoluble

- Melting point: 94 - 95 °C
- pH (20 °C) 6.6 - 8.6

**Toxicological data:**

- LD 50 (oral, rat): 328 mg/kg
- WGK: 2\*

**Safety:**

- R: 22-36/38
- S: 26-28.1-46

- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 6.1 T2 III UN 1663
- IMDG: 6.1 III UN 1663
- IATA/ICAO: 6.1 III UN 1663
- PAX: 619
- CAO: 619
- LGK: 10-13
- Disposal: 3

### M4000-0 m-Nitrophenol, indicator

Assay (DSC) .....	min. 99 %
Identity (IR-spectrum) .....	passes test
pH range (colorless to yellow) .....	6.6 - 8.6

HS-No: 2908 90 00 90

Code	Capacity
M4000-0-0025	25 g

## MIXED ACID ETCHANT

Synonyms:

- M = Nitric acid - 39.3 ± 1.0%
- Hydrofluoric acid - 11.6 ± 1.0%
- Acetic acid - 20.7 ± 1.0%

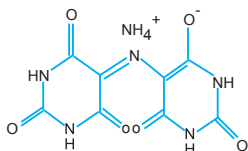
### M4002-6 Mixed acid ethchant, EC-100

Residue after Ignition .....	max. 5 ppm	Gold (Au) .....	max. 0.5 ppm
Color (Hazen) .....	max. 10 Hazen	Iron (Fe) .....	max. 1.0 ppm
Density 20 °C .....	1.28 g/cm <sup>3</sup>	Lead (Pb) .....	max. 0.5 ppm
Heavy metals (as Pb) .....	max. 0.5 ppm	Lithium (Li) .....	max. 1.0 ppm
Arsenic (As) .....	max. 0.1 ppm	Magnesium (Mg) .....	max. 1.0 ppm
Antimony (Sb) .....	max. 0.1 ppm	Molybdenum (Mo) .....	max. 0.5 ppm
Aluminium (Al) .....	max. 0.1 ppm	Manganese (Mn) .....	max. 0.5 ppm
Barium (Ba) .....	max. 0.1 ppm	Nickel (Ni) .....	max. 0.5 ppm
Beryllium (Be) .....	max. 0.5 ppm	Potassium (K) .....	max. 1.0 ppm
Bismuth (Bi) .....	max. 0.5 ppm	Platinum (Pt) .....	max. 0.5 ppm
Boron (B) .....	max. 1.0 ppm	Silver (Ag) .....	max. 0.5 ppm
Cadmium (Cd) .....	max. 0.5 ppm	Sodium (Na) .....	max. 1.0 ppm
Calcium (Ca) .....	max. 1.0 ppm	Strontium (Sr) .....	max. 1.0 ppm
Cobalt (Co) .....	max. 0.5 ppm	Thallium (Tl) .....	max. 0.5 ppm
Copper (Cu) .....	max. 0.5 ppm	Tin (Sn) .....	max. 1.0 ppm
Chromium (Cr) .....	max. 0.5 ppm	Zinc (Zn) .....	max. 1.0 ppm
Gallium (Ga) .....	max. 0.5 ppm	Zirconium (Zr) .....	max. 0.5 ppm
Germanium (Ge) .....	max. 1.0 ppm		

Code	Capacity
M4002-6-925E	250 kg

## MUREXIDE

Synonyms: Ammonium purpurate, acid



- C<sub>8</sub>H<sub>8</sub>N<sub>6</sub>O<sub>6</sub>
- M = 284.19 g/mol
- CAS [3051-09-0]
- EC number: 221-266-6

**Physical data:**

- Bulk density: ~ 330 kg/m<sup>3</sup>
- Solub. in water (20 °C): ~ 1 g/l
- pH (1 g/l H<sub>2</sub>O, 20 °C) ~ 5

**Toxicological data:**

- WGK: 2

**Transport/storage:**

- LGK: 10-13
- Disposal: 4

### M7001-0 Murexide, indicator for metal titration

HS-No: 2933 59 95 90

Absorption maximum I (water) .....	517 - 523 nm	Suitability as complexometric indicator .....	passes test
Absorptivity (A1%/1 cm; I max) .....	375 - 500	Loss on drying .....	max. 10 %

Code	Capacity
M7001-0-0005	5 g
M7001-0-0025	25 g



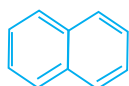


# **Chemical list : N**

## NAPHTHALENE



### Synonyms:



- C<sub>10</sub>H<sub>8</sub>  
- M = 128.16 g/mol  
- CAS [91-20-3]  
- EC number: 202-049-5

### Physical data:

- Form: Solid  
- Spec. density: 1.15 g/cm<sup>3</sup>  
- Bulk density: 600 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 0.3 g/l  
- Melting point: 79 - 82 °C  
- Boiling point: 218 °C  
- Flash point: 80 °C

- Ignition temp.: 540 °C  
- Vapour pressure: (20 °C) 0.066 hPa  
- Expl. limit (upper): 5.9 Vol%  
- Expl. limit (lower): 0.9 Vol%

### Toxicological data:

- LD 50 (oral, rat): > 2000 mg/kg  
- WGK: 2

### Safety:

- EC Index no.: 601-052-00-2  
- R: 22-40-50/53

- S:36/37-46-60-61  
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 4.1 F1 III UN 1334  
- IMDG: 4.1 III UN 1334  
- IATA/ICAO: 4.1 III UN 1334  
- PAX: 419  
- CAO: 420  
- LGK: 4.1 B  
- Disposal: 3

### N1000-3 Naphthalene, extra pure

Assay ..... min. 99.5 %  
Identity (IR-spectrum) ..... passes test  
Sulfated ash ..... max. 0.01 %  
Water ..... max. 0.2 %

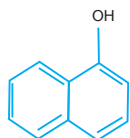
HS-No: 2902 90 10 00

Code	Capacity
N1000-3-0500	500 g

## 1-NAPHTHOL



### Synonyms: 1-Hydroxynaphthalene



- C<sub>10</sub>H<sub>8</sub>O  
- M = 144.17 g/mol  
- CAS [90-15-3]  
- EC number: 201-969-4

### Physical data:

- Form: Solid  
- Spec. density: 1.28 g/cm<sup>3</sup>  
- Bulk density: ~ 450 kg/m<sup>3</sup>  
- Solub. in water (20 °C): ~ 0.1 g/l

- Melting point: 95 - 97 °C  
- Boiling point: ~ 288 °C  
- Flash point: 125 °C  
- Ignition temp.: 510 °C  
- Vapour pressure: (94 °C) 1.3 hPa  
- pH (H<sub>2</sub>O) ~ < 7

### Toxicological data:

- LD 50 (oral, rat): 275 mg/kg  
- WGK: 1

### Safety:

- EC Index no.: 604-029-00-5  
- R: 21/22-37/38-41  
- S: 22-26-36/39-46  
- Poison class CH (Swiss): 2

### Transport/storage:

- LGK: 10-13  
- Disposal: 3

### N1002-1 1-Naphthol, reagent grade

Assay ..... min. 99 %	Iron (Fe) ..... max. 0.001 %
Identity (IR-spectrum) ..... passes test	Naphthalene (G.C.) ..... max. 0.2 %
Appearance of solution ..... passes test	2-Naphthol (G.C.) ..... max. 0.2 %
Chloride (Cl) ..... max. 0.005 %	Sulfated Ash ..... max. 0.05 %
Heavy metals (As Pb) ..... max. 0.001 %	Water ..... max. 0.2 %

HS-No: 2907 15 10 00

Code	Capacity
N1002-1-0025	25 g

## NICKEL STANDARD SOLUTION 1000MG/L FOR AA



### Synonyms:

### Physical data:

- Density: ~ 1.01 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- pH (20 °C) < 1

### Toxicological:

- WGK: 1

### Safety:

- R: 36/38-52/53  
- S: 26-37-61  
- Poison class CH (Swiss): F

### Transport/storage:

- ADR: 8 C1 III UN 3564  
- IMDG: 8 III UN 3564  
- IATA/ICAO: 8 III UN 3564  
- PAX: 818  
- CAO: 820  
- LGK: 8 B

### N1003-0 Nickel standard solution 1000mg/l for AA (nickel (II) nitrate in nitric acid 0.5 mol/l)

Composition ..... 1000±5 mg/l

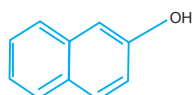
HS-No: 3822 00 00 00

Code	Capacity
N1003-0-0500	500 ml

## 2-NAPHTHOL



### Synonyms:



- C<sub>10</sub>H<sub>8</sub>O  
- M = 144.17 g/mol  
- CAS [135-19-3]  
- EC number: 205-182-7

### Physical data:

- Form: Solid  
- Spec. density: 1.22 g/cm<sup>3</sup>  
- Bulk density: ~300 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 1 g/l  
- Melting point: 121.6 °C

- Boiling point: 285 °C  
- Flash point: 153 °C  
- Vapour pressure: (30 °C) < 0.1 hPa

### Toxicological data:

- LD 50 (oral, rat): 1960 mg/kg  
- WGK: 2

### Safety:

- EC Index no.: 604-007-00-5  
- R: 20/22-50

- S: 24/25-46-61  
- Poison class CH (Swiss): 2

### Transport/storage:

- ADR: 9 M7 III UN 3077  
- IMDG: 9 III UN 3077  
- IATA/ICAO: 9 III UN 3077  
- PAX: 911  
- CAO: 911  
- LGK: 10-13  
- Disposal: 3

### N1004-1 2-Naphthol, reagent grade

Assay ..... min. 99 %	Iron (Fe) ..... max. 0.001 %
Identity (IR-spectrum) ..... passes test	Naphthalene (G.C.) ..... max. 0.1 %
Appearance of solution ..... passes test	2-Naphthol (G.C.) ..... max. 0.1 %
Chloride (Cl) ..... max. 0.005 %	Sulfated Ash ..... max. 0.05 %
Heavy metals (As Pb) ..... max. 0.001 %	Water ..... max. 0.2 %

HS-No: 2907 15 90 00

Code	Capacity
N1004-1-0025	25 g

## NESSLER'S REAGENT



Synonyms:

**Physical data:**

- Form: Liquid
- Density: 1.16 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- pH (20 °C) > 14

**Toxicological data:**

- MAK: 0.1 mg/m<sup>3</sup>
- WGK: 2

**Transport/storage:**

- ADR: 6.1 T4 II UN 2024
- IMDG: 6.1 II UN 2024
- IATA/ICAO: 6.1 II UN 2024
- PAX: 617
- CAO: 612
- LGK: 6.1 B
- Disposal: 20

### N1005-0 Nessler's reagent

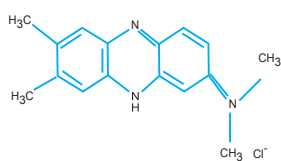
Suitability for determination of ammonia and ammoniac salts ..... passes test

HS-No: 3822 00 00 00

Code	Capacity
N1005-0-0500	500 ml

## NEUTRAL RED, C.I. 50040

Synonyms: Toluylene red, Basic Red 5



- C<sub>15</sub>H<sub>17</sub>ClN<sub>4</sub>
- M = 288.78 g/mol
- CAS [553-24-2]
- EC number: 209-035-8

**Physical data:**

- Form: Solid

- Bulk density: ~ 350 - 500 kg/m<sup>3</sup>
- Solub. in water (25 °C): 50 g/l
- pH (10 g/l H<sub>2</sub>O, 20 °C) ~ 3.1

**Toxicological:**

- WGK: 1

**Safety:**

- Poison class CH (Swiss): 4

**Transport/storage:**

- LGK: 10-13
- Disposal: 3

### N1006-0 Neutral red, C.I. 50040, for microscopy and indicator

HS-No: 3204 13 00 00

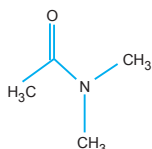
Assay (spectrophotometric) .....	min. 90.0 %	Related substances (TLC) .....	passes test
Absorption maximum max (ethanol 50%) .....	539 - 544 nm	Suitability for microscopy .....	passes test
Absorptivity (E1%/1cm; max, 0.0005%, ethanol 50%) .....	1395 - 1550	Loss on drying (110 °C) .....	max. 18 %

Code	Capacity
N1006-0-0025	25 g

## N,N-DIMETHYLACETAMIDE



Synonyms: Acetic acid dimethylamide



- C<sub>4</sub>H<sub>9</sub>NO
- M = 87.12 g/mol
- CAS [127-19-5]
- EC number: 2924-19-00-90

**Physical data:**

- Form: Liquid
- Density: 0.94 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -20 °C
- Boiling point: 165 - 166 °C
- Flash point: 70 °C
- Ignition temp.: 320 °C

- Vapour pressure: (20 °C) 1.76 hPa
- Refraction index: (n 20 °C/D) 1.4230
- Dipolar moment: (20 °C) 3.8 Debye
- Dielectric const.: (20 °C) 37.8
- Saturation conc.: (20 °C) 12 g/m<sup>3</sup>
- Expl. limit (upper): 11.5 Vol%
- Expl. limit (lower): 1.7 Vol%
- pH (200 g/l H<sub>2</sub>O, 20 °C) ~ 4

**Toxicological data:**

- LD 50 (oral, rat): 4300 mg/kg
- MAK: 10 ml/m<sup>3</sup>, 30 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 616-011-00-4
- R: 61-E20/21
- S: 26-28.1-36/37-45
- Poison class CH (Swiss): 2

**Transport/storage:**

- LGK: 3 B
- Disposal: 1

### N1040-1 N,N-Dimethylacetamide, reagent grade

HS-No: 2924 19 00 90

Assay .....	min. 99.5 %	Iron (Fe) .....	max. 0.000005 %
Free acid (as CH <sub>3</sub> COOH) .....	max. 0.01 %	Non-volatile matter .....	max. 0.005 %
Chloride (Cl) .....	max. 0.01 %	Water (K.F.) .....	max. 0.05 %
Heavy metals (Pb) .....	max. 0.000005 %		

Code	Capacity
N1040-1-2501	2.5 L

### N1040-4 N,N-Dimethylacetamide, HPLC grade

HS-No: 2924 19 00 90

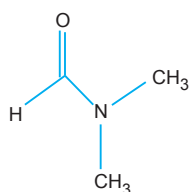
See specification in Solvents Specification - 30

Code	Capacity
N1040-4-1001	1.0 L
N1040-4-4001	4.0 L

## N,N-DIMETHYLFORMAMIDE



Synonyms: DMF, Formic acid dimethylamide



- C<sub>3</sub>H<sub>7</sub>NO
- M = 73.10 g/mol
- CAS [68-12-2]
- EC number: 200-679-5

### Physical data:

- Density: 0.94 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -61 °C
- Boiling point: 153 °C
- Flash point: 58 °C
- Ignition temp.: 410 °C
- Vapour pressure: (20 °C) 3.77 hPa

- Refraction index: (n 20 °C/D) 1.4305
- Viscosity: (20 °C) 0.8 mPas
- Dipolar moment: (20 °C) 3.8 Debye
- Dielectric const.: (25 °C) 36.7
- Saturation conc.: (20 °C) 12 g/m<sup>3</sup>
- Expl. limit (upper): 16 Vol%
- Expl. limit (lower): 2.2 Vol%
- pH (200 g/l H<sub>2</sub>O, 20 °C) 7

### Toxicological data:

- LD 50 (oral, rat): 2800 mg/kg
- MAK: 10 ml/m<sup>3</sup>, 30 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 616-001-00-X
- R: 61-E20/21-36
- S: 53-36/37-45
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 3 F1 III UN 2265
- IMDG: 3 III UN 2265
- IATA/ICAO: 3 III UN 2265
- PAX: 309
- CAO: 310
- LGk: 6.1 A
- Disposal: 1

### N1042-1 N,N-Dimethylformamide, reagent grade

HS-No: 2924 19 00 90

Assay .....	min. 99.8 %	Titration base .....	max. 0.003 meq/g
Colour .....	max. 15 APHA	Titration acid .....	max. 0.0005 meq/g
Residue after evaporation .....	max. 0.005 %	Water (Coulometric KF) .....	max. 0.15 %

Code	Capacity
N1042-1-2501	2.5 L

### N1042-4 N,N-Dimethylformamide, HPLC grade

HS-No: 2924 19 00 90

See specification in Solvents Specification - 38

Code	Capacity
N1042-4-1001	1.0 L
N1042-4-4001	4.0 L

### N1042-14 N,N-Dimethylformamide, BIO grade

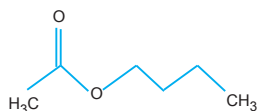
HS-No: 2924 19 00 90

See specification in Solvents Specification - 56

Code	Capacity
N1042-14-1001	1.0 L
N1042-14-4001	4.0 L

## N-BUTYL ACETATE

Synonyms: Acetic acid n-butyl ester



- C<sub>6</sub>H<sub>12</sub>O<sub>2</sub>
- M = 116.16 g/mol
- CAS [123-86-4]
- EC number: 204-658-1

### Physical data:

- Density: 0.88 g/cm<sup>3</sup>
- Solub. in water (20 °C): 7 g/l
- Melting point: -77 °C
- Boiling point: 127 °C
- Flash point: 22 °C
- Ignition temp.: 370 °C

- Vapour pressure: (20 °C) ~ 13 hPa
- Refraction index: (n 20 °C/D) 1.3941
- Viscosity: (25 °C) 0.69 mPas
- Dipolar moment: (22 °C) 1.84 Debye
- Dielectric const.: (20 °C) 5.0
- Evap. heat: (126 °C) 309 kJ/kg
- Saturation conc.: (20 °C) 62 g/m<sup>3</sup>
- Expl. limit (upper): 7.5 Vol%
- Expl. limit (lower): 1.2 Vol%

### Toxicological data:

- LD 50 (oral, rat): 10768 mg/kg
- MAK: 100ml/m<sup>3</sup>, 480 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 607-025-00-1
- R: 10-66-67
- S: 25
- VbF class: All
- Poison class CH (Swiss): 5

### Transport/storage:

- ADR: 3 F1 II UN 1123
- IMDG: 3 II UN 1123
- IATA/ICAO: 3 II UN 1123
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

### N1073-1 n-Butyl acetate, reagent grade

HS-No: 2915 33 00 00

Assay (G.C) .....	min. 99.5 %	Iron (Fe) .....	max. 0.00001 %
Colour .....	max. 10 Hazen	Magnesium (Mg) .....	max. 0.00001 %
Free acid (as CH <sub>3</sub> COOH) .....	max. 0.01 %	Manganese (Mn) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.00005 %	Nickel (Ni) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.00001 %	Lead (Pb) .....	max. 0.001 %
Boron (B) .....	max. 0.000002 %	n-butyl formate (G.C) .....	max. 0.1 %
Cadmium (Cd) .....	max. 0.000005 %	n-butyl propionate (G.C) .....	max. 0.1 %
Calcium (Ca) .....	max. 0.00005 %	n-butanol (G.C) .....	max. 0.2 %
Cobalt (Co) .....	max. 0.000002 %	Substances darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Zinc (Zn) .....	max. 0.00001 %	Non-volatile matter .....	max. 0.005 %
Copper (Cu) .....	max. 0.000002 %	Water .....	max. 0.1 %
Chromium (Cr) .....	max. 0.000002 %		
Tin (Sn) .....	max. 0.00001 %		

Code	Capacity
N1073-1-1000	1.0 L
N1073-1-2500	2.5 L

## N-HEPTANE



Synonyms: *n*-Dipropylmethane, *n*-Heptylhydride, 1-Methyl hexane



- C<sub>7</sub>H<sub>16</sub>
- M = 100.21 g/mol
- CAS [142-82-5]
- EC number: 205-563-8

### Physical data:

- Density: 0.68 g/cm<sup>3</sup>
- Solub. in water (20 °C): almost non-miscible
- Melting point: -90.6 °C
- Boiling point: 98.4 °C

- Flash point: -4 °C
- Ignition temp.: 215 °C
- Vapour pressure: (20 °C) 48 hPa
- Refraction index: (n 20 °C/D) 1.3876
- Viscosity: (25 °C) 0.4 mPas
- Dielectric const.: (20 °C) 1.9
- Saturation conc.: (20 °C) 196 g/m<sup>3</sup>
- Expl. limit (upper): 7 Vol%
- Expl. limit (lower): 1 Vol%

### Toxicological data:

- LD 50 (oral, rat): > 15000 mg/kg
- MAK: 500 ml/m<sup>3</sup>, 2100 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 601-008-00-2
- R: 11-38-50/53-65-67
- S: 9-16-29-33-46-60-61-62
- VbF class: AI
- Poison class CH (Swiss): 5

### Transport/storage:

- ADR: 3 F1 II UN 1206
- IMDG: 3 II UN 1206
- IATA/ICAO: 3 II UN 1206
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

### N3005-4 n-Heptane 97%, HPLC grade

See specification in Solvents Specification - 56

HS-No: 2901 10 90 00

Code	Capacity
N3005-4-1001	1.0 L
N3005-4-4001	4.0 L

### N3005-11 n-Heptane 97%, Pesticide grade

See specification in Solvents Specification - 23

HS-No: 2901 10 90 00

Code	Capacity
N3005-11-1001	1.0 L
N3005-11-4001	4.0 L

### N3005-12 n-Heptane 97%, Ultimate grade

See specification in Solvents Specification - 17

HS-No: 2901 10 90 00

Code	Capacity
N3005-12-1001	1.0 L
N3005-12-4001	4.0 L

### N3008-1 n-Heptane 99%, reagent grade

Assay (G.C) .....	min. 99.2 %	Lead (Pb) .....	max. 0.00001 %
Colour .....	max. 10 Hazen	Magnesium (Mg) .....	max. 0.00001 %
Free acid (as CH <sub>3</sub> COOH) .....	max. 0.005 %	Manganese (Mn) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.00005 %	Nickel (Ni) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.00001 %	Tin (Sn) .....	max. 0.00001 %
Boron (B) .....	max. 0.000002 %	Zinc (Zn) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Aromatic hydrocarbons (as C <sub>6</sub> H <sub>6</sub> ) ...	max. 0.1 %
Calcium (Ca) .....	max. 0.00005 %	Sulphur compounds (as S) .....	max. 0.005 %
Cobalt (Co) .....	max. 0.000002 %	Substances darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Copper (Cu) .....	max. 0.000002 %	Non-volatile matter .....	max. 0.0005 %
Chromium (Cr) .....	max. 0.000002 %	Water .....	max. 0.01 %
Iron (Fe) .....	max. 0.00001 %		

HS-No: 2901 10 90 00

Code	Capacity
N3008-1-2501	2.5 L

### N3008-4 n-Heptane 99%, HPLC grade

See specification in Solvents Specification - 56

HS-No: 2901 10 90 00

Code	Capacity
N3005-4-1001	1.0 L
N3005-4-4001	4.0 L

### N3008-11 n-Heptane 99%, Pesticide grade

See specification in Solvents Specification - 23

HS-No: 2901 10 90 00

Code	Capacity
N3005-11-1001	1.0 L
N3005-11-4001	4.0 L

### N3008-12 n-Heptane 99%, Ultimate grade

See specification in Solvents Specification - 17

HS-No: 2901 10 90 00

Code	Capacity
N3005-12-1001	1.0 L
N3005-12-4001	4.0 L



## NICKEL (II) HYDROXIDE CARBONATE HYDRATE (ABOUT 47% NI) EXTRA PURE



### Synonyms:

NiCO<sub>3</sub>2Ni(OH)<sub>2</sub>4H<sub>2</sub>O  
 CNiO<sub>3</sub>2N<sub>2</sub>NiO<sub>2</sub>4H<sub>2</sub>O  
 - CAS [39430-27-8]  
 - EC number: 235-715-9

### Physical data:

- Solub. in water (20 °C) insoluble

- pH value ~ 8.5 (50 g/l H<sub>2</sub>O, 20 °C) (slurry)  
 - Bulk density: ~ 300 kg/m<sup>3</sup>  
 - Harmful, sensyizing

### Toxicological data:

- WKG: 3\*  
 - LD 50 (oral, rat) 840 mg/kg

### Safety:

- R: 22-40-43  
 - S: 24-37  
 - Poison class (CH): 3

### Transport/storage:

- LGK: 10-13  
 - Merkblatt BG Chemie Nr. M050

### N3014-3 Nickel (II) hydroxide carbonate hydrate, extra pure

HS-No: 2836 99 18 00

Assay (complexometric, Ni) .....	min. 47.0 %	Lead (Pb) .....	max. 0.002 %
Chloride (Cl) .....	max. 0.02 %	Zinc (Zn) .....	max. 0.001 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.01 %	Non precipitable with ammonium	
Cobalt (Co) .....	max. 0.05 %	sulphide (as sulphate) .....	max. 0.3 %
Copper (Cu) .....	max. 0.003 %		
Iron (Fe) .....	max. 0.005 %		

Code	Capacity
N3014-3-0500	500 g
N3014-3-1000	1 kg

## N-HEXANE



### Synonyms: n-Caproylhydride, n-Hexylhydride



- C<sub>6</sub>H<sub>14</sub>  
 - M = 86.18 g/mol  
 - CAS [110-54-3]  
 - EC number: 203-777-6

### Physical data:

- Density: 0.66 g/cm<sup>3</sup>  
 - Solub. in water (20 °C): 0.0095 g/l  
 - Melting point: -94.3 °C  
 - Boiling point: 69 °C  
 - Flash point: -22 °C  
 - Ignition temp.: 240 °C  
 - Vapour pressure: (20 °C)160 hPa

- Viscosity: (25 °C) 0.31 mPas  
 - Dielectric const.: (20 °C) 1.8  
 - Saturation conc.: (20 °C) 563 g/m<sup>3</sup>  
 - Expl. limit (upper): 8.1 Vol%  
 - Expl. limit (lower): 1.0 Vol%

### Toxicological data:

- LD 50 (oral, rat): 28710 mg/kg  
 - MAK: 50 ml/m<sup>3</sup>, 180 mg/m<sup>3</sup>  
 - WGK: 1

### Safety:

- EC Index no.: 601-037-00-0

- R: 11-38-48/20-51/53-62-65-67  
 - S: 9-16-29-33-36/37-61-62  
 - VbF class: A1  
 - Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 3 F1 II UN 1208  
 - IMDG: 3 II UN 1208  
 - IATA/ICAO: 3 II UN 1208  
 - PAX: 305  
 - CAO: 307  
 - LGK: 3 A  
 - Disposal: 1

### N3057-1 n-Hexane, reagent grade

HS-No: 2901 10 90 00

Assay .....	min. 99 %	Lead (Pb) .....	max. 0.00001 %
Colour .....	max. 10 APHA	Magnesium (Mg) .....	max. 0.00001 %
Aluminium (Al) .....	max. 0.00005 %	Manganese (Mn) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.00001 %	Nickel (Ni) .....	max. 0.000002 %
Boron (B) .....	max. 0.000002 %	Tin (Sn) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Zinc (Zn) .....	max. 0.00001 %
Calcium (Ca) .....	max. 0.00005 %	Residue after evaporation .....	max. 0.001 %
Chromium (Cr) .....	max. 0.000002 %	Water-soluble Titrable Acid .....	max. 0.0003 meq/g
Cobalt (Co) .....	max. 0.000002 %	Thiophene .....	passes test
Copper (Cu) .....	max. 0.000002 %	Sulphur compounds (as S) .....	max. 0.005 %
Iron (Fe) .....	max. 0.00001 %		

Code	Capacity
N3057-1-2501	2.5 L

### N3057-4 n-Hexane, HPLC grade

HS-No: 2901 10 90 00

See specification in Solvents Specification - 42

Code	Capacity
N3057-4-1001	1.0 L
N3057-4-4001	4.0 L

### N3057-11 n-Hexane, Ultimate grade

HS-No: 2901 10 90 00

See specification in Solvents Specification - 15

Code	Capacity
N3057-11-1001	1.0 L
N3057-11-4001	4.0 L

### N3057-12 n-Hexane, Ultimate grade

HS-No: 2901 10 90 00

See specification in Solvents Specification - 24

Code	Capacity
N3057-12-1001	1.0 L
N3057-12-4001	4.0 L

### N3057-15 n-Hexane, Ultimate grade

HS-No: 2901 10 90 00

See specification in Solvents Specification - 63

Code	Capacity
N3057-15-1001	1.0 L
N3057-15-4001	4.0 L

## NICKEL (II) CHLORIDE HEXAHYDRATE



Synonyms: Nickel dichloride hexahydrate

- NiCl<sub>2</sub>·6H<sub>2</sub>O
- M = 237.71 g/mol
- CAS [7791-20-0]
- EC number: 231-743-0

### Physical data:

- Spec. density: 3.55 g/cm<sup>3</sup> (anhydrous substance)
- Bulk density: ~ 640 kg/m<sup>3</sup>
- Solub. in water (20 °C): 553 g/l
- Melting point: 140 °C (release of crystalline water)

- Vapour pressure: (671 °C) 1.3 hPa (anhydrous substance)
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~4.9

### Toxicological data:

- LD 50 (oral, rat): 105 mg/kg (anhydrous substance)
- WGK: 2

### Safety:

- R: 25-43-50/53

- S: 24-37-45-61
- Poison class CH (Swiss): 2

### Transport/storage:

- ADR: 6.1 T5 II UN 3288
- IMDG: 6.1 II UN 3288
- IATA/ICAO: 6.1 II UN 3288
- PAX: 619
- CAO: 619
- LGK: 6.1 B
- Disposal: 15

### N3062-1 Nickel (II) chloride hexahydrate, reagent grade

HS-No: 2827 35 00 00

Assay (complexometric) .....	min. 98.5 %	Copper (Cu) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	3.5 - 5.5	Iron (Fe) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Lead (Pb) .....	max. 0.002 %
Calcium (Ca) .....	max. 0.005 %	Sodium (Na) .....	max. 0.01 %
Cobalt (Co) .....	max. 0.005 %	Zinc (Zn) .....	max. 0.001 %

Code	Capacity
N3062-1-0500	500 g

### N3062-3 Nickel (II) chloride hexahydrate, extra pure

HS-No: 2827 35 00 00

Assay (complexometric) .....	min. 97 %	Lead (Pb) .....	max. 0.002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Zinc (Zn) .....	max. 0.15 %
Cobalt (Co) .....	max. 0.05 %	Non precipitable with	
Iron (Fe) .....	max. 0.005 %	(NH <sub>4</sub> ) <sub>2</sub> S(as SO <sub>4</sub> ).....	max. 0.3 %

Code	Capacity
N3062-3-0500	500 g

N

## NICKEL (II) NITRATE HEXAHYDRATE



Synonyms:

- Ni(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O
- M = 290.81 g/mol
- CAS [13478-00-7]
- EC number: 236-068-5

### Physical data:

- Form: Solid
- Bulk density: ~ 800 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: 56.7 °C

- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 5

### Toxicological data:

- LD 50 (oral, rat): 1620 mg/kg
- WGK: 2

### Safety:

- R: 8-22-43
- S: 24-37-46
- Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 5.1 O2 III UN 2725
- IMDG: 5.1 III UN 2725
- IATA/ICAO: 5.1 III UN 2725
- PAX: 516
- CAO: 518
- LGK: 5.1 B
- Disposal: 15

### N3065-1 Nickel (II) nitrate hexahydrate, reagent grade

HS-No: 2834 29 20 00

Assay (complexometric, Nil) .....	min. 99.0 %	Iron (Fe) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.001 %	Sodium (Na) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Ammonium (NH <sub>4</sub> ) .....	max. 0.05 %
Calcium (Ca) .....	max. 0.005 %	Lead (Pb) .....	max. 0.001 %
Cobalt (Co) .....	max. 0.005 %	Zinc (Zn) .....	max. 0.001 %
Copper (Cu) .....	max. 0.001 %		

Code	Capacity
N3065-1-0500	500 g

### N3065-3 Nickel (II) nitrate hexahydrate, extra pure

HS-No: 2834 29 20 00

Assay (complexometric) .....	min. 97.0 %	Iron (Fe) .....	max. 0.005 %
Chloride (Cl) .....	max. 0.003 %	Lead (Pb) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Zinc (Zn) .....	max. 0.05 %
Calcium (Ca) .....	max. 0.2 %	Non precipitable with	
Cobalt (Co) .....	max. 0.01 %	(NH <sub>4</sub> ) <sub>2</sub> S (as SO <sub>4</sub> ) .....	max. 0.3 %
Copper (Cu) .....	max. 0.002 %		

Code	Capacity
N3065-3-0500	500 g

## NICKEL (II) SULFATE HEXAHYDRATE



Synonyms:

- NiSO<sub>4</sub>·6H<sub>2</sub>O
- M = 262.86 g/mol
- CAS [10101-97-0]
- EC number: 232-104-9

### Physical data:

- Spec. density: 2.07 g/cm<sup>3</sup>
- Bulk density: ~ 1000 kg/m<sup>3</sup>
- Solub. in water (20 °C): 625 g/l
- Melting point: 53 °C
- pH (100 g/l H<sub>2</sub>O, 20 °C) 4.3 - 4.7

### Toxicological data:

- LD 50 (oral, rat): 264 mg/kg
- WGK: 3\*

### Safety:

- EC Index no.: 028-009-00-5
- R: 22-40-42/43-50/53
- S: 22-36/37-45-60-61
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- PAX: 911
- CAO: 911
- LGK: 10-13
- Disposal: 15

**N3073-1 Nickel (II) sulfate hexahydrate, reagent grade**

HS-No: 2833 24 00 00

Assay (complexometric) .....	min. 99 %	Iron (Fe) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	4 - 6	Lead (Pb) .....	max. 0.001 %
Total N .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.01 %
Chloride (Cl) .....	max. 0.001 %	Manganese (Mn) .....	max. 0.0005 %
Calcium (Ca) .....	max. 0.005 %	Potassium (K) .....	max. 0.005 %
Cobalt (Co) .....	max. 0.002 %	Sodium (Na) .....	max. 0.01 %
Copper (Cu) .....	max. 0.002 %	Zinc (Zn) .....	max. 0.002 %

Code	Capacity
N3073-1-0500	500 g

**N3073-3 Nickel (II) sulfate hexahydrate, extra pure**

HS-No: 2833 24 00 00

Assay (complexometric) .....	min. 99 %	Copper (Cu) .....	max. 0.002 %
pH (5%, H <sub>2</sub> O) .....	4 - 6	Iron (Fe) .....	max. 0.005 %
Chloride (Cl) .....	max. 0.003 %	Lead (Pb) .....	max. 0.001 %
Arsenic (As) .....	max. 0.001 %	Zinc (Zn) .....	max. 0.005 %
Calcium (Ca) .....	max. 0.005 %	Non precipitable with (NH <sub>4</sub> ) <sub>2</sub> S (as SO <sub>4</sub> ) .....	max. 0.5 %
Cobalt (Co) .....	max. 0.01 %		

Code	Capacity
N3073-3-0500	500 g

**NITRIC ACID 20%****Synonyms:**

- HNO<sub>3</sub>
- M = 63.01 g/mol
- CAS [7697-37-2]
- EC number: 231-714-2

**Physical data:**

- Density: 1.41 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -41 °C
- Boiling point: 122 °C
- Vapour pressure: (20 °C) 9.4 hPa
- pH (20 °C) < 1

**Toxicological:**

- MAK: 2 ml/m<sup>3</sup>, 5.2 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 007-004-00-1
- R: 35
- S: 23.2-51-26-36/37/39-45
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 CO1 II UN 2031
- IMDG: 8 II UN 2031
- IATA/ICAO: 8 II UN 2031
- PAX: Forbidden UN 2031
- CAO: 813
- LGK: 8 B
- Disposal: 12

**N3102-1 Nitric acid 20%, reagent grade**

HS-No: 2808 00 00 00

Assay .....	min. 20 %	Germanium (Ge) .....	max. 0.1 ppm
Chloride (Cl) .....	max. 0.5 ppm	Indium (In) .....	max. 0.02 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 0.5 ppm	Potassium (K) .....	max. 0.1 ppm
Sulfate (SO <sub>4</sub> ) .....	max. 0.5 ppm	Lithium (Li) .....	max. 0.02 ppm
Arsenic and Antimony (as As) .....	max. 0.01 ppm	Magnesium (Mg) .....	max. 0.1 ppm
Silver (Ag) .....	max. 0.02 ppm	Manganese (Mn) .....	max. 0.02 ppm
Aluminium (Al) .....	max. 0.5 ppm	Molybdenum (Mo) .....	max. 0.05 ppm
Gold (Au) .....	max. 0.1 ppm	Sodium (Na) .....	max. 0.3 ppm
Boron (B) .....	max. 0.05 ppm	Nickel (Ni) .....	max. 0.02 ppm
Barium (Ba) .....	max. 0.05 ppm	Lead (Pb) .....	max. 0.05 ppm
Beryllium (Be) .....	max. 0.02 ppm	Platinum (Pt) .....	max. 0.2 ppm
Bismuth (Bi) .....	max. 0.1 ppm	Tin (Sn) .....	max. 0.1 ppm
Calcium (Ca) .....	max. 0.1 ppm	Strontium (Sr) .....	max. 0.05 ppm
Cadmium (Cd) .....	max. 0.05 ppm	Titanium (Ti) .....	max. 0.1 ppm
Cobalt (Co) .....	max. 0.02 ppm	Thallium (Tl) .....	max. 0.05 ppm
Chromium (Cr) .....	max. 0.02 ppm	Vanadium (V) .....	max. 0.05 ppm
Copper (Cu) .....	max. 0.02 ppm	Zinc (Zn) .....	max. 0.1 ppm
Iron (Fe) .....	max. 0.2 ppm	Zirconium (Zr) .....	max. 0.1 ppm
Gallium (Ga) .....	max. 0.02 ppm	Residue after ignition .....	max. 5 ppm

Code	Capacity
N3102-1-2501	2.5 L

**NITRIC ACID 69%****Synonyms:**

- HNO<sub>3</sub>
- M = 63.01 g/mol
- CAS [7697-37-2]
- EC number: 231-714-2

**Physical data:**

- Density: 1.41 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -41 °C
- Boiling point: 122 °C
- Vapour pressure: (20 °C) 9.4 hPa
- pH (20 °C) < 1

**Toxicological:**

- MAK: 2 ml/m<sup>3</sup>, 5.2 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 007-004-00-1
- R: 35
- S: 23.2-51-26-36/37/39-45
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 CO1 II UN 2031
- IMDG: 8 II UN 2031
- IATA/ICAO: Forbidden UN 2031
- PAX: F
- CAO: 813
- LGK: 8 B
- Disposal: 12

**N3105-1 Nitric acid 69%, reagent grade**

HS-No: 2808 00 00 00

Assay .....	68.5±0.5 %	Germanium (Ge) .....	max. 0.1 ppm
Chloride (Cl) .....	max. 0.5 ppm	Indium (In) .....	max. 0.02 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 0.5 ppm	Potassium (K) .....	max. 0.1 ppm
Sulfate (SO <sub>4</sub> ) .....	max. 0.5 ppm	Lithium (Li) .....	max. 0.02 ppm
Arsenic and Antimony (as As) .....	max. 0.01 ppm	Magnesium (Mg) .....	max. 0.1 ppm
Silver (Ag) .....	max. 0.02 ppm	Manganese (Mn) .....	max. 0.02 ppm
Aluminium (Al) .....	max. 0.5 ppm	Molybdenum (Mo) .....	max. 0.05 ppm
Gold (Au) .....	max. 0.1 ppm	Sodium (Na) .....	max. 0.3 ppm
Boron (B) .....	max. 0.05 ppm	Nickel (Ni) .....	max. 0.02 ppm
Barium (Ba) .....	max. 0.05 ppm	Lead (Pb) .....	max. 0.05 ppm
Beryllium (Be) .....	max. 0.02 ppm	Platinum (Pt) .....	max. 0.2 ppm
Bismuth (Bi) .....	max. 0.1 ppm	Tin (Sn) .....	max. 0.1 ppm
Calcium (Ca) .....	max. 0.1 ppm	Strontium (Sr) .....	max. 0.05 ppm
Cadmium (Cd) .....	max. 0.05 ppm	Titanium (Ti) .....	max. 0.1 ppm
Cobalt (Co) .....	max. 0.02 ppm	Thallium (Tl) .....	max. 0.05 ppm
Chromium (Cr) .....	max. 0.02 ppm	Vanadium (V) .....	max. 0.05 ppm
Copper (Cu) .....	max. 0.02 ppm	Zinc (Zn) .....	max. 0.1 ppm
Iron (Fe) .....	max. 0.2 ppm	Zirconium (Zr) .....	max. 0.1 ppm
Gallium (Ga) .....	max. 0.02 ppm	Residue after ignition .....	max. 5 ppm

Code	Capacity
N3105-1-1000	1.0 L
N3105-1-2500	2.5 L

**N3105-7 Nitric acid 69%, EC-10**

Assay .....	69.0 - 71.0 %	Titration
Residue after ignition .....	max. 5 ppm	Gravimetric
Chloride (Cl) .....	max. 0.5 ppm	Ion Chromatography
Sulphate (SO <sub>4</sub> ) .....	min. 0.5 ppm	Ion Chromatography
Phosphate (PO <sub>4</sub> ) .....	max. 0.5 ppm	Ion Chromatography
Arsenic and Antimony (as As) .....	max. 0.01 ppm	ICP-MS
Silver (Ag) .....	max. 0.02 ppm	ICP-MS
Aluminium (Al) .....	max. 0.05 ppm	ICP-MS
Gold (Au) .....	max. 0.1 ppm	ICP-MS
Boron (B) .....	max. 0.05 ppm	ICP-MS
Barium (Ba) .....	max. 0.05 ppm	ICP-MS
Beryllium (Be) .....	max. 0.02 ppm	ICP-MS
Bismuth (Bi) .....	max. 0.1 ppm	ICP-MS
Calcium (Ca) .....	max. 0.1 ppm	ICP-MS
Cadmium (Cd) .....	max. 0.05 ppm	ICP-MS
Cobalt (Co) .....	max. 0.02 ppm	ICP-MS
Chromium (Cr) .....	max. 0.02 ppm	ICP-MS
Copper (Cu) .....	max. 0.02 ppm	ICP-MS
Iron (Fe) .....	max. 0.2 ppm	ICP-MS
Gallium (Ga) .....	max. 0.02 ppm	ICP-MS
Germanium (Ge) .....	max. 0.1 ppm	ICP-MS
Indium (In) .....	max. 0.02 ppm	ICP-MS
Potassium (K) .....	max. 0.1 ppm	ICP-MS
Lithium (Li) .....	max. 0.02 ppm	ICP-MS
Magnesium (Mg) .....	max. 0.1 ppm	ICP-MS
Manganese (Mn) .....	max. 0.02 ppm	ICP-MS
Molybdenum (Mo) .....	max. 0.05 ppm	ICP-MS
Sodium (Na) .....	max. 0.3 ppm	ICP-MS
Nickel (Ni) .....	max. 0.02 ppm	ICP-MS
Lead (Pb) .....	max. 0.03	ICP-MS
Platinum (Pt) .....	max. 0.2 ppm	ICP-MS
Tin (Sn) .....	max. 0.1	ICP-MS
Strontium (Sr) .....	max. 0.05	ICP-MS
Titanium (Ti) .....	max. 0.1	ICP-MS
Thallium (Tl) .....	max. 0.05ppm	ICP-MS
Vanadium (V) .....	max. 0.05 ppm	ICP-MS
Zinc (Zn) .....	max. 0.1 ppm	ICP-MS
Zirconium (Zr) .....	max. 0.1 ppm	ICP-MS

Code	Capacity
N3105-7-2500	2.5 L

N

**NITRIC ACID 65%****Synonyms:**

- HNO<sub>3</sub>
- M = 63.01 g/mol
- CAS [7697-37-2]
- EC number: 231-714-2

**Physical data:**

- Density: 1.41 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: ~ -32 °C
- Boiling point: 122 °C

- Vapour pressure: (20 °C) 9.4 hPa
- pH (20 °C) < 1

**Toxicological:**

- MAK: 2 ml/m<sup>3</sup>, 5.2 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 007-004-00-1
- R: 35

- S: 23.2-51-26-36/37/39-45
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 CO II UN 2031
- IMDG: 8 II UN 2031
- IATA/ICAO: Forbidden UN 2031
- PAX: F
- CAO: 813
- LGK: 8 B
- Disposal: 12

**N3115-1 Nitric acid 65%, reagent grade**

HS-No: 2808 00 00 00

Assay .....	65.5±0.5 %	Germanium (Ge) .....	max. 0.01 ppm
Chloride (Cl) .....	max. 0.2 ppm	Mercury (Hg) .....	max. 0.05 ppm
Fluoride (F) .....	max. 1 ppm	Indium (In) .....	max. 0.02 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 0.2 ppm	Potassium (K) .....	max. 0.1 ppm
Sulfate (SO <sub>4</sub> ) .....	max. 0.5 ppm	Lithium (Li) .....	max. 0.01 ppm
Arsenic and Antimony (as As) .....	max. 0.01 ppm	Magnesium (Mg) .....	max. 0.05 ppm
Silver (Ag) .....	max. 0.01 ppm	Manganese (Mn) .....	max. 0.01 ppm
Aluminium (Al) .....	max. 0.05 ppm	Molybdenum (Mo) .....	max. 0.01 ppm
Gold (Au) .....	max. 0.05 ppm	Sodium (Na) .....	max. 0.2 ppm
Barium (Ba) .....	max. 0.01 ppm	Nickel (Ni) .....	max. 0.02 ppm
Beryllium (Be) .....	max. 0.01 ppm	Lead (Pb) .....	max. 0.1 ppm
Bismuth (Bi) .....	max. 0.1 ppm	Platinum (Pt) .....	max. 0.1 ppm
Calcium (Ca) .....	max. 0.05 ppm	Strontium (Sr) .....	max. 0.01 ppm
Cadmium (Cd) .....	max. 0.2 ppm	Titanium (Ti) .....	max. 0.02 ppm
Cobalt (Co) .....	max. 1 ppm	Thallium (Tl) .....	max. 0.02 ppm
Chromium (Cr) .....	max. 0.2 ppm	Vanadium (V) .....	max. 0.01 ppm
Copper (Cu) .....	max. 0.5 ppm	Zinc (Zn) .....	max. 0.02 ppm
Iron (Fe) .....	max. 0.01 ppm	Zirconium (Zr) .....	max. 0.02 ppm
Gallium (Ga) .....	max. 0.05 ppm	Residue after ignition .....	max. 3 ppm

Code	Capacity
N3115-1-1001	1.0 L
N3115-1-2501	2.5 L

**N3115-3 Nitric acid 65%, extra pure**

HS-No: 2808 00 00 00

Assay .....	min. 65 %	Calcium (Ca) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.0003 %	Iron (Fe) .....	max. 0.0004 %
Nitrogen Oxides (as N <sub>2</sub> O <sub>3</sub> ) .....	max. 0.003 %	Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %
Sulfate (SO <sub>4</sub> ) .....	max. 0.001 %	Non Volatile Matter .....	max. 0.01 %
Heavy Metals (as Pb) .....	max. 0.0005 %	Appearance of solution .....	passes test
Arsenic (As) .....	max. 0.0001 %	Iodate, Bromate .....	passes test

Code	Capacity
N3115-3-2501	2.5 L

**NITRIC ACID, VOLUMETRIC SOLUTIONS****N3120-0 Nitric acid, solution 0.1 mol/l (0.1 N)**

Synonyms:

- HNO<sub>3</sub>
- M = 63.01 g/mol
- CAS [7697-37-2]
- EC number: 231-714-2

**Physical data:**

- Density: ~ 1.002 g/cm<sup>3</sup>

**Safety:**

- EC Index no.: 007-004-00-1
- S: 24/25
- Poison class CH (Swiss): 3

1 ml = 0.006301 g HNO<sub>3</sub>

HS-No: 2808 00 00 00

Code	Capacity
N3120-0-1000	1.0 L

**N3121-0 Nitric acid, solution 1 mol/l (1 N)**

Synonyms:

- HNO<sub>3</sub>
- M = 63.01 g/mol
- CAS [7697-37-2]
- EC number: 231-714-2

**Physical data:**

- Density: 1.036 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 007-004-00-1
- R: 34
- S: 23.2-51-26-39/37/39-45
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 CO1 II UN 2031
- IMDG: 8 II UN 2031
- IATA/ICAO: 8 II UN 2031
- PAX: 807
- CAO: 813
- LGK: 8 B
- Disposal: 12

1 ml = 0.06301 g HNO<sub>3</sub>

HS-No: 2808 00 00 00

Code	Capacity
N3121-0-1000	1.0 L

**N3122-0 Nitric acid, solution 2 mol/l (2 N)**

Synonyms:

- HNO<sub>3</sub>
- M = 63.01 g/mol
- CAS [7697-37-2]
- EC number: 231-714-2

**Physical data:**

- Density: ~1.07 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 007-004-00-1
- R: 34
- S: 23.2-51-26-36/37/39-45
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 CO1 II UN 2031
- IMDG: 8 II UN 2031
- IATA/ICAO: 8 II UN 2031
- LGK: 8 B
- Disposal: 12

1 ml = 0.12602 g HNO<sub>3</sub>

HS-No: 2808 00 00 00

Code	Capacity
N3122-0-1000	1.0 L

## N-PENTANE



Synonyms: 1,3-Dimethylpropane, Diethyl methane



- C<sub>5</sub>H<sub>12</sub>
- M = 72.15 g/mol
- CAS [109-66-0]
- EC number: 203-692-4

### Physical data:

- Density: 0.63 g/cm<sup>3</sup>
- Solub. in water (25 °C): 0.04 g/l
- Melting point: -129.7 °C
- Boiling point: 36.1 °C
- Flash point: -49.4 °C
- Ignition temp.: 285 °C
- Vapour pressure: (20 °C) 573 hPa

- Dielectric const.: (20 °C) 1.8
- Evap. heat: (36 °C) 383 kJ/kg
- Saturation conc.: (20 °C) 1689 g/m<sup>3</sup>
- Expl. limit (upper): 8 Vol%
- Expl. limit (lower): 1.4 Vol%

### Toxicological data:

- MAK: 1000 ml/m<sup>3</sup>, 3000 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 601-006-00-1 [1]
- R: 12-51/53-65-66-67
- S: 9-16-29-33-61-62
- VbF class: A1
- Poison class CH (Swiss): 5

### Transport/storage:

- ADR: 3 F1 II UN 1265
- IMDG: 3 II UN 1265
- IATA/ICAO: 3 II UN 1265
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

### N6015-1 n-Pentane 99%, reagent grade

HS-No: 2901 10 90 00

Assay (G.C) .....	min. 99 %	Iron (Fe) .....	max. 0.00001 %
Colour .....	max. 10 Hazen	Lead (Pb) .....	max. 0.00001 %
Acidity .....	max. 0.0002 meq/g	Magnesium (Mg) .....	max. 0.00001 %
Aluminium (Al) .....	max. 0.00005 %	Manganese (Mn) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.00001 %	Nickel (Ni) .....	max. 0.000002 %
Boron (B) .....	max. 0.000002 %	Tin (Sn) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Zinc (Zn) .....	max. 0.00001 %
Calcium (Ca) .....	max. 0.00005 %	Sulphur compounds (as S) .....	max. 0.005 %
Chromium (Cr) .....	max. 0.000002 %	Substances darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Cobalt (Co) .....	max. 0.000002 %	Non-volatile matter .....	max. 0.0005 %
Copper (Cu) .....	max. 0.000002 %	Water .....	max. 0.01 %

Code	Capacity
N6015-1-2501	2.5 L

### N6015-4 n-Pentane 99%, reagent grade

HS-No: 2901 10 90 00

See specification in Solvents Specification - 42

Code	Capacity
N6015-4-1001	1.0 L
N6015-4-4001	4.0L

### N6015-11 n-Pentane 99%, reagent grade

HS-No: 2901 10 90 00

See specification in Solvents Specification - 25

Code	Capacity
N6015-11-1001	1.0 L
N6015-11-4001	4.0L

### N6015-12 n-Pentane 99%, reagent grade

HS-No: 2901 10 90 00

See specification in Solvents Specification - 17

Code	Capacity
N6015-12-1001	1.0 L
N6015-12-4001	4.0L



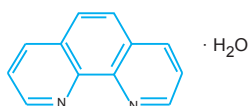


**Chemical list : 0**

## O-PHENANTHROLINE MONOHYDRATE



Synonyms: 1,10-Phenanthroline



- C<sub>12</sub>H<sub>8</sub>N<sub>2</sub>·H<sub>2</sub>O  
- M = 198.24 g/mol  
- CAS [5144-89-8]  
- EC number: 200-629-2

**Physical data:**  
- Bulk density: ~ 300 kg/m<sup>3</sup>  
- Solub. in water (20 °C) ~ 3.3 g/l  
- Melting point: 93 - 94 °C

**Toxicological data:**  
- LD 50 (oral, rat): 132 mg/kg  
- WGK: 3\*

**Safety:**  
- EC Index no.: 613-092-00-8  
- R: 25-50/53  
- S: 45-60-61

**Transport/storage:**  
- ADR: 6.1 T2 III UN 2811  
- IMDG: 6.1 III UN 2811  
- IATA/ICAO: 6.1 III UN 2811  
- PAX: 619  
- CAO: 619  
- LGK: 6.1 B  
- Disposal: 9

### O6002-1 o-Phenanthroline monohydrate, reagent grade

HS-No: 2933 99 90 90

Assay (titr. with HClO <sub>4</sub> ) .....	min. 99.5 %	Sulfated ash .....	max. 0.05 %
Suitability for determinatin of Fe .....	passes test	Water .....	8.5 - 9.5 %
Suitability as redox indicator .....	passes test		

Code	Capacity
O6002-1-0005	5 g

## ORTHO-PHOSPHORIC ACID, 85%



Synonyms: Orthophosphoric acid

- H<sub>3</sub>PO<sub>4</sub>  
- M = 98.00 g/mol  
- CAS [7664-38-2]  
- EC number: 231-633-2

**Physical data:**  
- Density: 1.71 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- Melting point: ~ 21 °C  
- Boiling poing: ~ 158 °C

- Vapour pressure: (25 °C) 2.2 hPa  
- pH (10 g/l H<sub>2</sub>O, 20 °C) < 0.5

**Toxicological data:**  
- LD 50 (oral, rat): 1530 mg/kg  
(anhydrous substnace)  
- WGK: 1

**Safety:**  
- EC Index no.: 015-011-00-6  
- R: 34

- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 2

**Transport/storage:**  
- ADR: 8 C1 III UN 1805  
- IMDG: 8 III UN 1805  
- IATA/ICAO: 8 III UN 1805  
- PAX: 819  
- CAO: 821  
- LGK: 8 B  
- Disposal: 12

### O6021-1 ortho-Phosphoric acid 85%, reagent grade

HS-No: 2809 20 00 00

Assay (acidimetric) .....	min. 85.0 %	Cobalt (Co) .....	max. 0.5 ppm
Chlorides (Cl) .....	max. 2 ppm	Copper (Cu) .....	max. 0.5 ppm
Flouride (F) .....	max. 1 ppm	Iron (Fe) .....	max. 10 ppm
Nitrate (NO <sub>3</sub> ) .....	max. 3 ppm	Potassium (K) .....	max. 5 ppm
Sulphate (SO <sub>4</sub> ) .....	max. 20 ppm	Magnesium (Mg) .....	max. 5 ppm
Phosphite and Hypophosphite (as H <sub>3</sub> PO <sub>3</sub> ) .....	max. 20 ppm	Manganese (Mn) .....	mx. 0.5 ppm
Antimony (Sb) .....	max. 5 ppm	Sodium (Na) .....	max. 200 ppm
Arsenic (As) .....	max. 0.5 ppm	Nickel (Ni) .....	max. 1 ppm
Calcium (Ca) .....	max. 50 ppm	Lead (Pb) .....	max. 0.5 ppm
Cadmium (Cd) .....	max. 0.5 ppm	Zinc (Zn) .....	max. 2 ppm

Code	Capacity
O6021-1-2500	2.5 L

### O6021-3 ortho-Phosphoric acid 85%, extra pure

HS-No: 2809 20 00 00

Assay (acidimetric) .....	min. 85 - 88 %	Copper (Cu) .....	max. 0.002 %
Volatile acids (as CH <sub>3</sub> COOH) .....	max. 0.001 %	Iron (Fe) .....	max. 0.005 %
Chlorides (Cl) .....	max. 0.0005 %	Heavy metals (as Pb) .....	max. 0.001 %
Flouride (F) .....	max. 0.001 %	Lead (Pb) .....	max. 0.001 %
Nitrate (NO <sub>3</sub> ) .....	max. 0.0003 %	Potassium (K) .....	max. 0.005 %
Phosphite and Hypophosphite (as H <sub>3</sub> PO <sub>3</sub> ) .....	max. 0.02 %	Sodium (Na) .....	max. 0.03 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Zinc (Zn) .....	max. 0.002 %
Arsenic (As) .....	max. 0.0002 %	Precipitable compounds with ammonia	passes test
Calcium (Ca) .....	max. 0.01 %	Residual Solvents (Ph Eur/ICH) .....	Excluded by production process

Code	Capacity
O6021-3-2500	2.5 L

### O6021-4 ortho-Phosphoric acid 85%, HPLC grade

HS-No: 2809 20 00 00

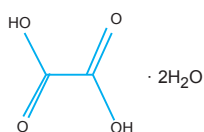
See specification in Solvents Specification - 47

Code	Capacity
O6021-4-1001	1.0 L
O6021-4-4001	4.0 L

## OXALIC ACID DIHYDRATE



Synonyms: *Ethanedioic acid*



- $C_2H_2O_4 \cdot 2H_2O$
- $M = 126.07 \text{ g/mol}$
- CAS [6153-56-6]
- EC number: 205-634-3

**Physical data:**

- Spec. density:  $1.65 \text{ g/cm}^3$
- Bulk density:  $\sim 900 \text{ kg/m}^3$

- Solub. in water ( $20^\circ\text{C}$ ):  $102 \text{ g/l}$
- Melting point:  $101^\circ\text{C}$

**Toxicological data:**

- LD 50 (oral, rat):  $7500 \text{ mg/kg}$   
(anhydrous substance)
- WGK: 1

**Safety:**

- EC Index no.: 607-006-00-8
- R: 21/22
- S: 24/25-37-46
- Poison class CH (Swiss): 2

**Transport/storage:**

- LGK: 10-13
- Disposal: 4

### O9006-1 Oxalic acid dihydrate, reagent grade

Assay (permanganometric) .....	min. 99.5 %	Copper (Cu) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.0005 %	Heavy Metals (as Pb) .....	max. 0.0005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %	Iron (Fe) .....	max. 0.0002 %
Total N .....	max. 0.001 %	Lead (Pb) .....	max. 0.0005 %
Calcination Residue (as SO <sub>4</sub> ) .....	max. 0.01 %	Nickel (Ni) .....	max. 0.0005 %
Cadmium (Cd) .....	max. 0.0005 %	Zinc (Zn) .....	max. 0.0005 %
Calcium (Ca) .....	max. 0.0005 %	Foreign Organic Substances .....	passes test
Cobalt (Co) .....	max. 0.0005 %	substances Darkened by H <sub>2</sub> SO <sub>4</sub> ....	passes test

HS-No: 2917 11 00 90

Code	Capacity
O9006-1-1000	1 kg



# **Chemical list : P**



## PERCHLORIC ACID 70%



Synonyms:  $\text{HClO}_4$

- $\text{HClO}_4$
- M = 100.46 g/mol
- CAS [7601-90-3]
- EC number: 231-512-4

### Physical data:

- Form: Solid
- Density: ~ 1.36 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -18 °C
- Boiling point: ~ 198.7 kg/m<sup>3</sup>
- pH ( $\text{H}_2\text{O}$ , 20 °C) < 1

### Toxicological data:

- LD 50 (oral, rat): 1100 mg/kg (anhydrous substance)
- WGK: 1

### Safety:

- EC Index no.: 017-006-00-4
- R: 5-8-35
- S: 23.2-51-26-36/37/39-45
- Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 5.1 O2 I UN 1873
- IMDG: 5.1 II UN 1873
- IATA/ICAO: 5.1 I UN 1873
- PAX: F
- CAO: 501
- LGK: 5.1 A
- Disposal: 12

### P1005-1 Perchloric acid 70%, reagent grade

HS-No: 2811 19 80 90

Assay (acidimetric) .....	60 - 72 %	Germanium (Ge) .....	max. 0.000005 %
Identity .....	passes test	Heavy metals (as Pb) .....	max. 0.0001 %
Colour (Hazen) .....	max. 10 %	Iron (Fe) .....	max. 0.0001 %
Insoluble in Ethanol .....	max. 0.001 %	Lead (Pb) .....	max. 0.000005 %
Free Chlorine (Cl) .....	max. 0.00005 %	Lithium (Li) .....	max. 0.000002 %
Total N .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.000005 %
Chlorates ( $\text{ClO}_3$ ) .....	max. 0.001 %	Manganese (Mn) .....	max. 0.000002 %
Chlorides (Cl) .....	max. 0.0003 %	Molubdenum (Mo) .....	max. 0.000005 %
Phosphates, silicates (as $\text{SiO}_2$ ) .....	max. 0.0005 %	Nickel (Ni) .....	max. 0.00001 %
Sulfates ( $\text{SO}_4$ ) .....	max. 0.001 %	Potassium (K) .....	max. 0.00001 %
Aluminium (Al) .....	max. 0.000005 %	Silver (Ag) .....	max. 0.00001 %
Arsenic (As) .....	max. 0.000005 %	Sodium (Na) .....	max. 0.00005 %
Barium (Ba) .....	max. 0.000002 %	Strontium (Sr) .....	max. 0.000002 %
Beryllium (Be) .....	max. 0.000002 %	Thallium (Tl) .....	max. 0.000005 %
Bismuth (Bi) .....	max. 0.00001 %	Titanium (Ti) .....	max. 0.00001 %
Cadmium (Cd) .....	max. 0.000005 %	Vanadium (V) .....	max. 0.000005 %
Calcium (Ca) .....	max. 0.00005 %	Zinc (Zn) .....	max. 0.00001 %
Cobalt (Co) .....	max. 0.000005 %	Zirconium (Zr) .....	max. 0.00001 %
Copper (Cu) .....	max. 0.00001 %	Calcination residue (as $\text{SO}_4$ ) .....	max. 0.003 %

Code	Capacity
P1005-1-0500	500 ml
P1005-1-1001	1.0 L

P

## PETROLEUM ETHER, BOILING RANGE 40 - 60 EC



Synonyms: *Petroleum benzine*, *Petroleum spirit*

- CAS [8032-32-4]
- EC number: 265-151-9

### Physical data:

- Density: (15 °C) 0.65 g/cm<sup>3</sup>
- Solub. in water (20 °C): almost non-miscible
- Melting point: < -100 °C
- Boiling point: 40 - 60 °C
- Flash point: < -21 °C
- Ignition temp.: 250 °C
- Vapour pressure: (20 °C) 350 hPa
- Viscosity: (20 °C) 0.45 mPas

### Toxicological data:

- LD 50 (oral, rat): > 5000 mg/kg
- MAK: 50 ml/m<sup>3</sup>, 180 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 649-328-00-1
- R: 11-52/53-65
- S: 9-16-23.2-51-24-33-46-62

- VbF class: A1
- Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 3 F1 II UN 1268
- IMDG: 3 II UN 1268
- IATA/ICAO: 3 II UN 1268
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

### P2049-1 Petroleum ether 40 - 60 EC, reagent grade

HS-No: 2710 11 25 00

Boiling range .....	40 - 60 °C	Acidity .....	max. 0.0005 meq/g
Water (by coulometry) .....	max. 0.006 %	Residue on Evaporation .....	max. 0.001 %
Color .....	max. 10 APHA	Sulphur compounds (S) .....	max. 0.002 %

Code	Capacity
P2049-1-2501	2.5 L
P2049-1-4001	4.0 L

### P2049-4 Petroleum ether 40 - 60 EC, HPLC grade

HS-No: 2710 11 25 00

See specification in Solvents Specification - 46

Code	Capacity
P2049-4-1001	1.0 L
P2049-4-4001	4.0 L

### P2049-11 Petroleum ether 40 - 60 EC, Pesticide grade

HS-No: 2710 11 25 00

See specification in Solvents Specification - 25

Code	Capacity
P2049-11-1001	1.0 L
P2049-11-4001	4.0 L

### P2049-12 Petroleum ether 40 - 60 EC, Ultimate grade

HS-No: 2710 11 25 00

See specification in Solvents Specification - 25

Code	Capacity
P2049-12-1001	1.0 L
P2049-12-4001	4.0 L

## PETROLEUM ETHER 60 - 80 °C



Synonyms: Petroleum benzine, petroleum spirit

- CAS [8032-32-4]
- EC number: 265-151-9

### Physical data:

- Form: Liquid
- Density: 0.68 g/cm<sup>3</sup>
- Solub. in water (20 °C): non-miscible
- Boiling point: ~ 60 - 80 °C
- Flash point: < -20 °C
- Ignition temp.: 260 °C
- Vapour pressure: (20 °C) ~ 200 hPa
- Expl. limit (upper): 7.5 Vol%
- Expl. limit (lower): 1.0 Vol%

### Toxicological data:

- MAK: 50 ml/m<sup>3</sup>, 180 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 649-328-00-1
- R: 11-38-48/20-51/53-62-65-67
- S: 16-23.2-51-33-36/37-61-62
- VbF class: AI
- Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 3 F1 II UN 1268
- IMDG: 3 II UN 1268
- IATA/ICAO: 3 II UN 1268
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

### Special regulations:

- Product submitted to special taxes law

### P2053-1 Petroleum ether 60 - 80 °C, reagent grade

HS-No: 2710 11 25 00

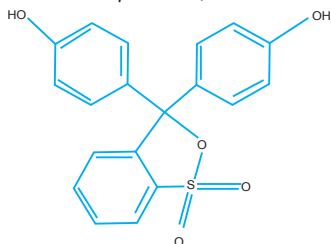
Boiling range	60 - 80 °C	Iron (Fe)	max. 0.00001 %
Acidity	max. 0.0003 meq/g	Magnesium (Mg)	max. 0.00001 %
Aluminium (Al)	max. 0.00005 %	Manganese (Mn)	max. 0.000002 %
Barium (Ba)	max. 0.000001 %	Nickel (Ni)	max. 0.000002 %
Boron (B)	max. 0.000002 %	Lead (Pb)	max. 0.00001 %
Cadmium (Cd)	max. 0.000005 %	Iodine Number	max. 0.3 %
Calcium (Ca)	max. 0.00005 %	S compounds (as S)	max. 0.005 %
Zinc (Zn)	max. 0.00001 %	Aromatic s (as benzene)	max. 0.005 %
Cobalt (Co)	max. 0.000002 %	Non-volatile matter	max. 0.0005 %
Copper (Cu)	max. 0.000002 %	Substances darkened by H <sub>2</sub> SO <sub>4</sub>	passes test
Chromium (Cr)	max. 0.000002 %	Water (K.F.)	max. 0.01 %
Tin (Sn)	max. 0.00001 %		

Code	Capacity
P2053-1-2501	2.5 L
P2053-1-4001	4.0 L

P

## PHENOL RED

Synonyms: Phenolsulfonphthalein, PR



- C<sub>19</sub>N<sub>14</sub>O<sub>5</sub>S
- M = 354.38 g/mol
- CAS [143-74-8]
- EC number: 205-609-7

### Physical data:

- Form: Solid
- Bulk density: 200 - 300 kg/m<sup>3</sup>
- Solub. in water (20 °C): miscible

### Toxicological data:

- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 3

### P3001-0 Phenol red, indicator

HS-No: 2934 99 90

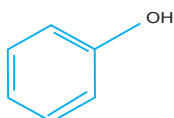
pH range (yellow-red)	6.5 - 8.0	Absorptivity (A1%/1cm; λ4, on dried material)	1000 - 1200
Absorption maximum λ1 (pH 1.2)	503 - 506 nm	Insoluble in ethanol	passes test
Absorption maximum λ2 (pH 3.0)	430 - 435 nm	Copper (Cu)	max. 0.005 %
Absorption maximum λ3 (pH 6.5)	430 - 435 nm	Iron (Fe)	max. 0.005 %
Absorption maximum λ4 (pH 8.8)	557 - 560 nm	Lead (Pb)	max. 0.005 %
Absorptivity (A1%/1cm; λ1, on dried material)	900 - 1100	Nickel (Ni)	max. 0.005 %
Absorptivity (A1%/1cm; λ2, on dried material)	500 - 700	Transition range acc. ACS	passes test
Absorptivity (A1%/1cm; λ3, on dried material)	500 - 700	Loss on drying (110 °C)	max. 5 %

Code	Capacity
P3001-0-0025	25 g

## PHENOL



Synonyms: Phenic acid, Hydroxybenzene, Carboic acid



- C<sub>6</sub>H<sub>5</sub>OH
- M = 94.11 g/mol
- CAS [108-95-2]
- EC number: 2907-11-00-00

### Physical data:

- Form: Solid
- Spec. density: ~ 1.06 g/cm<sup>3</sup>
- Bulk. density: ~ 620 kg/m<sup>3</sup>
- Solub. in water (20 °C): 84 g/l
- Melting point: 40.8 °C
- Boiling point: 181.8 °C

- Flash point: 81 °C
- Ignition temp.: 595 °C
- Vapour pressure: (20 °C) 0.2 hPa
- Expl. limit (upper): 9.5 Vol%
- Expl. limit (lower): 1.3 Vol%
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~5

### Safety:

- EC Index no.: 604-001-00-2
- R: 23/24/25-34-48/20/21/22-68

### Transport/storage:

- ADR: 6.1 T2 II UN 1671
- IMDG: 6.1 II UN 1671
- IATA/ICAO: 6.1 II UN 1671
- PAX: 613
- CAO: 615
- LGK: 6.1 A
- Disposal: 9

### P3009-8 Phenol, molecular biology grade

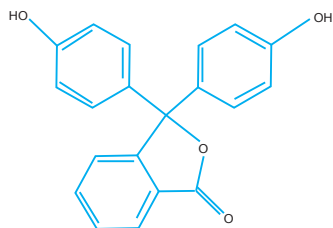
HS-No: 2836 29 80 00

Assay (by GC)	min. 99.5 %	DNase and RNase	none detected
Melting point	40.5 °C	Iron (Fe)	1 ppm
Preservative	none	Magnesium (Mg)	1 ppm
Water (H <sub>2</sub> O)	0.5 %	Heavy metals (Pb)	5 ppm

Code	Capacity
P3009-8-0500	500 g

## PHENOLPHTHALEIN

Synonyms: 3,3-Bis(p-hydroxyphenyl) phthalide



- C<sub>20</sub>H<sub>14</sub>O<sub>4</sub>  
- M = 318.33 g/mol  
- CAS [77-09-8]  
- EC number: 201-004-7

**Physical data:**  
- Spec. density: 1.3 g/cm<sup>3</sup>  
- Bulk density: 350 - 450 kg/m<sup>3</sup>  
- Solub. in water (20 °C): insoluble  
- Melting point: 261 - 263 °C

**Toxicological data:**  
- WGK: 1  
**Safety:**  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 3

### P3017-1 Phenolphthalein indicator, reagent grade

HS-No: 2932 29 10 00

pH range (colourless to violet-red) . 8.2 - 9.8  
Absorption maximum I (pH 9.8) ..... 551 - 554 nm  
Absorptivity (A1%/1 cm; I max,  
pH 9.8 on dried material) ..... 700 - 750  
Loss on drying (110 °C) ..... max. 1 %

Code	Capacity
P3017-1-0100	100 g

## PHENOLPHTHALEIN, ETHANOLIC SOLUTIONS



Synonyms:

- C<sub>20</sub>H<sub>14</sub>O<sub>4</sub>  
- M = 318.33 g/mol  
- CAS [77-09-8]

**Physical data:**  
- Density: 0.89 g/cm<sup>3</sup>  
- Solub. in water (20 °C):  
miscible  
- Flash point: 23 °C  
- Ignition temp.: ~ 425 °C

**Toxicological data:**  
- LD 50 (oral, rat): 6200 mg/kg  
(ethanol)  
- MAK: 500 ml/m<sup>3</sup>,  
960 mg/m<sup>3</sup>  
- WGK: 1

**Safety:**  
- R: 11  
- S: 7-16  
- VbF class: B  
- Poison class CH (Swiss): F

**Transport/storage:**  
- ADR: 3 F1 III UN 1993  
- IMDG: 3 III UN 1993  
- IATA/ICAO: 3 III UN 1993  
- PAX: 309  
- CAO: 310  
- LGK: 3 A  
- Disposal: 1

### P3021-0 Phenolphthalein indicator, solution in 1% ethanol

HS-No: 3822 00 00 00

Specification : pH range (colourless to violet-red) .. pH 8.2 - 9.8

Code	Capacity
P3021-0-1000	1.0 L

## PHOSPHOTUNGSTIC ACID HYDRATE

Synonyms: Tungstophosphoric acid hydrate

H<sub>3</sub>[P(W<sub>3</sub>O<sub>10</sub>)<sub>4</sub>]·XH<sub>2</sub>O  
- H<sub>3</sub>O<sub>40</sub>PW<sub>12</sub>XH<sub>2</sub>O  
- M = 2880.17 g/mol  
- CAS [12501-23-4]  
- EC number: 215-682-7

**Physical data:**  
- Form: Solid  
- Bulk. density: ~ 960 kg/m<sup>3</sup>  
- Solub. in water (20 °C): soluble

- Melting point: 107 °C  
- pH (20 g/l H<sub>2</sub>O, 20 °C) ~ 5

**Toxicological data:**  
- WGK: 1

**Safety:**  
- R: 34  
- S: 26-36/37/39-45

**Transport/storage:**  
- ADR: 8 C2 III UN 3260  
- IMDG: 8 III UN 3260  
- IATA/ICAO: 8 III UN 3260  
- PAX: 822  
- CAO: 823  
- LGK: 10-13  
- Disposal: 15

### P3050-1 Phosphotungstic acid hydrate, reagent grade

HS-No: 2811 19 80 90

Chlorides (Cl) .....	max. 0.005 %	Lead (Pb) .....	max. 0.002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Potassium (K) .....	max. 0.02 %
Total N .....	max. 0.002 %	Sodium (Na) .....	max. 0.02 %
Copper (Cu) .....	max. 0.001 %	Water (K.F.) .....	max. 17 %
Iron (Fe) .....	max. 0.002 %		

Code	Capacity
P3050-1-0101	100 g

## PHOSPHORUS RED



Synonyms: P

- P
- M = 30.97 g/mol
- CAS [7723-14-0]
- EC number: 231-768-7

**Physical data:**

- Form: Powder
- Spec. density: 2.34 g/cm<sup>3</sup>
- Bulk density: 1100 kg/m<sup>3</sup>
- Solub. in water (20 °C): 84 g/l
- Ignition temp.: 300 °C

**Toxicological:**

- WGK: 3\*

**Safety:**

- EC Index no.: 015-002-00-7
- R: 11-16-52/53
- S: 7-43.1-61
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 4.1 F3 III UN 1338
- IMDG: 4.1 III UN 1338
- IATA/ICAO: 4.1 III UN 1338
- PAX: 422
- CAO: 421
- LGK: 4.1 B
- Disposal: 25

### P3051-1 Phosphorus red, reagent grade

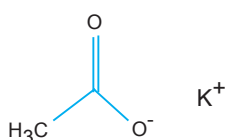
HS-No: 2804 70 00 00

Assay .....	min. 97 %	Yellow phosphorus .....	passes test
Iron (Fe) .....	max. 0.2 %		

Code	Capacity
P3051-1-0500	500 g

## POTASSIUM ACETATE

Synonyms:



- CH<sub>3</sub>COOK
- M = 98.15 g/mol
- CAS [127-08-2]
- EC number: 204-822-2

**Physical data:**

- Spec. density: (25 °C) 1.57 g/cm<sup>3</sup>
- Bulk density: ~ 500 kg/m<sup>3</sup>

- Solub. in water (20 °C): soluble
- Melting point: 292 °C
- Flash point: > 250 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 7.5 - 8.5

**Toxicological data:**

- LD 50 (oral, rat): 3250 mg/kg
- WGK: 1

**Safety:**

- Poison class CH (Swiss): 5

**Transport/storage:**

- LGK: 10-13

### P5021-1 Potassium acetate, reagent grade

HS-No: 2915 29 00 90

Assat (titr. with HClO <sub>4</sub> ) .....	min. 99 %	Copper (Cu) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	7 - 9	Iron (Fe) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.002 %	Lead (Pb) .....	max. 0.0005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0005 %	Magnesium (Mg) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Sodium (Na) .....	max. 0.1 %
Calcium (Ca) .....	max. 0.005 %	Zinc (Zn) .....	max. 0.0005 %

Code	Capacity
P5021-1-0500	500 g

### P5021-3 Potassium acetate, extra pure

HS-No: 2915 29 00 90

Assay (perchloric acid) .....	min. 99 %	Arsenic (As) .....	max. 0.0001 %
Insoluble matter in water .....	max. 0.005 %	Calcium (Ca) .....	max. 0.01 %
pH (5%, H <sub>2</sub> O) .....	6.5 - 9.0	Copper (Cu) .....	max. 0.0005 %
Acidity (as CH <sub>3</sub> COO) .....	max. 0.25 %	Iron (Fe) .....	max. 0.0005 %
Alkalinity (as KOH) .....	max. 0.015 %	Lead (Pb) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.002 %	Magnesium (Mg) .....	max. 0.01 %
Phosphate (PO <sub>4</sub> ) .....	max. 0.001 %	Nickel (Ni) .....	max. 0.0005 %
Sulphates (SO <sub>4</sub> ) .....	max. 0.002 %	Sodium (Na) .....	max. 0.25 %

Code	Capacity
P5021-3-0500	500 g

## POTASSIUM BROMATE

Synonyms: Bromic acid potassium salt



- M = 167.01 g/mol
- CAS [7758-01-2]
- EC number: 231-829-8

**Physical data:**

- Form: Solid
- Spec. density: ~ 3.42 g/cm<sup>3</sup>
- Bulk density: ~ 1400 kg/m<sup>3</sup>

- Solub. in water (20 °C): 70 g/l
- Melting point: 434 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5 - 9

**Toxicological data:**

- LD 50 (oral, rat): 157 mg/kg
- WGK: 3

**Safety:**

- EC Index no.: 035-003-00-6
- R: 45-9-E25

- S: 53-45

- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 5.1 O2 II UN 1484
- IMDG: 5.1 II UN 1484
- IATA/ICAO: 5.1 II UN 1484
- PAX: 508
- CAO: 511
- LGK: 5.1 A
- Disposal: 22

**Applications:** Analytical chemistry, laboratory reagent, in food industry

### P5035-1 Potassium bromate, reagent grade

HS-No: 2829 90 40 00

Assay (iodometric, on dried sample) .....	min. 99.8 %	Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %
Insoluble in water .....	max. 0.005 %	Total N .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	5 - 9	Heavy metals (as Pb) .....	max. 0.0005 %
Free acid (as HBrO <sub>3</sub> ) .....	max. 0.005 %	Iron (Fe) .....	max. 0.0005 %
Free alkali (as KOH) .....	max. 0.003 %	Sodium (Na) .....	max. 0.01 %
Bromides (Br) .....	max. 0.02 %		

Code	Capacity
P5035-1-0500	500 g

## POTASSIUM BROMIDE

### Synonyms:

- KBr
- M = 119.01 g/mol
- CAS [7758-02-3]
- EC number: 231-830-3
- Melting point: 730 °C
- Boiling point: 1380 °C
- Vapour pressure: (795 °C) 1.3 hPa
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5.5 - 8.5

### Safety:

- Poison class CH (Swiss): 3

### Physical data:

- Spec. density: 2.75 g/cm<sup>3</sup>
- Bulk density: ~ 900 - 1000 kg/m<sup>3</sup>
- Solub. in water (20 °C): 540 g/l

### Toxicological data:

- LD 50 (oral, rat): 3070 mg/kg
- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### P5038-1 Potassium bromide, reagent grade

HS-No: 2827 51 00 00

Assay (argentometric) .....	min. 99.5 %	Calcium (Ca) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	5 - 8	Copper (Cu) .....	max. 0.0005 %
Bromates (BrO <sub>3</sub> ) .....	max. 0.001 %	Heavy metals (as Pb) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.1 %	Iron (Fe) .....	max. 0.0005 %
Iodides (I) .....	max. 0.001 %	Lead (Pb) .....	max. 0.0005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Manesium (Mg) .....	max. 0.001 %
Total N .....	max. 0.001 %	Sodium (Na) .....	max. 0.02 %
Arsenic (As) .....	max. 0.0001 %	Zinc (Zn) .....	max. 0.0005 %
Barium (Ba) .....	max. 0.001 %	Loss on drying (105 °C) .....	max. 0.3 %
Cadmium (Cd) .....	max. 0.0005 %		

Code	Capacity
P5038-1-1000	1 kg

## POTASSIUM CARBONATE



### Synonyms: Potash

- K<sub>2</sub>CO<sub>3</sub>
- M = 138.21 g/mol
- CAS [584-08-7]
- EC number: 209-529-3
- Melting point: 891 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 11.5 - 12.5

- S: 22-26-46
- Poison class CH (Swiss): 4

### Physical data:

- Spec. density: 2.43 g/cm<sup>3</sup>
- Bulk density: ~ 750 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble

### Toxicological data:

- LD 50 (oral, rat): 1870 mg/kg
- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### Safety:

- R: 22-36/37/38

### P5048-1 Potassium carbonate, reagent grade

HS-No: 2836 40 00 00

Assay (acidimetric) .....	min. 99 %	Calcium (Ca) .....	max. 0.002 %
Insoluble matter .....	max. 0.005 %	Copper (Cu) .....	max. 0.005 %
Total N .....	max. 0.001 %	Iron (Fe) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.002 %	Lead (Pb) .....	max. 0.0005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.001 %
Silicates (SiO <sub>2</sub> ) .....	max. 0.003 %	Sodium (Na) .....	max. 0.02 %
Heavy Metals (as Pb) .....	max. 0.0005 %	Substances precipitable by ammonia	max. 0.01 %
Aluminium (Al) .....	max. 0.001 %	Total S (as SO <sub>4</sub> ) .....	max. 0.003 %
Arsenic (As) .....	max. 0.0001 %	Loss on calcinations (600 °C) .....	max. 1 %

Code	Capacity
P5048-1-1000	1 kg

## POTASSIUM CHLORIDE

### Synonyms: Chloro potassium

- KCl
- M = 74.56 g/mol
- CAS [7447-40-7]
- EC number: 231-211-8
- Solub. in water (20 °C): 330 g/l
- Melting point: 773 °C
- Boiling point: 1413 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 5.5 - 8.5

### Safety:

- Poison class CH (Swiss): 5

### Physical data:

- Spec. density: 1.98 g/cm<sup>3</sup>
- Bulk density: ~ 1000 kg/m<sup>3</sup>

### Toxicological data:

- LD 50 (oral, rat): 2600 mg/kg
- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### P5067-1 Potassium chloride, reagent grade

HS-No: 3104 20 90 00

Assay (acidimetric) .....	min. 99.5 %	Barium (Ba) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	5.5 - 8.0	Calcium (Ca) .....	max. 0.001 %
Total N .....	max. 0.001 %	Heavy metals (as Pb) .....	max. 0.0005 %
Bromides (Br) .....	max. 0.05 %	Iron (Fe) .....	max. 0.0003 %
Iodides (I) .....	max. 0.002 %	Magnesium (Mg) .....	max. 0.001 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0005 %	Sodium (Na) .....	max. 0.02 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.003 %		

Code	Capacity
P5067-1-1000	1 kg

## POTASSIUM CHROMATE



Synonyms: Chromic acid potassium salt

- $K_2CrO_4$
- M = 194.21 g/mol
- CAS [7789-00-6]
- EC number: 232-140-5

**Physical data:**

- Spec. density: (18 °C) 2.6 g/cm<sup>3</sup>
- Bulk density: ~ 1400 kg/m<sup>3</sup>
- Solub. in water (20 °C): 637 g/l
- Melting point: 985 °C

- Boiling point: 1000 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 8.6 - 9.8

**Toxicological data:**

- LD 50 (oral, rat): 180 mg/kg
- WGK: 3

**Safety:**

- EC Index no.: 024-006-00-8
- R: 49-46-36/37/38-43-50/53

- S: 53-24/37-45-60-61
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 6.1 T5 II UN 3288
- IMDG: 6.1 II UN 3288
- IATA/ICAO: 6.1 II UN 3288
- PAX: 613
- CAO: 615
- LGK: 6.1 B
- Disposal: 22

### P5072-1 Potassium chromate, reagent grade

Assay (acidimetric) .....	min. 99.5 %	Copper (Cu) .....	max. 0.001 %
Insoluble in water .....	max. 0.005 %	Iron (Fe) .....	max. 0.002 %
pH (5%, H <sub>2</sub> O) .....	8.6 - 9.8	Lead (Pb) .....	max. 0.005 %
Chlorides (Cl) .....	max. 0.001 %	Sodium (Na) .....	max. 0.02 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Calcium (Ca) .....	max. 0.005 %
Aluminium (Al) .....	max. 0.003 %		

HS-No: 2841 50 00 00

Code	Capacity
P5072-1-0500	500 g
P5072-1-1000	1 kg

## POTASSIUM CYANIDE



Synonyms: Cyanogen potassium

- KCN
- M = 65.12 g/mol
- CAS [151-50-8]
- EC number: 205-792-3

**Physical data:**

- Spec. density: 1.55 g/cm<sup>3</sup>
- Bulk density: ~ 750 kg/m<sup>3</sup>
- Solub. in water (25 °C): 716 g/l
- Melting point: 634 °C
- Boiling point: 1625 °C

- Vapour pressure: (634.5 °C) 1.8 hPa
- pH (20 g/l H<sub>2</sub>O, 20 °C) ~ 11 - 12

**Toxicological data:**

- LD 50 (oral, rat): 5 mg/kg
- MAK: 5 mg/m<sup>3</sup>
- WGK: 3

**Safety:**

- EC Index no.: 006-007-00-5
- R: 26/27/28-32-50/53

- S: 7-28.1-29-36/37-45-60-61
- Poison class CH (Swiss): 1

**Transport/stoage:**

- ADR: 6.1 T5 I UN 1680
- IMDG: 6.1 I UN 1680
- IATA/ICAO: 6.1 I UN 1680
- PAX: 606
- CAO: 607
- LGK: 6.1 B
- Disposal: 21

### P5078-1 Potassium cyanide, reagent grade

Appearance .....	Solid	Sulphide (S) .....	max. 0.001 % wt
Assay (argentometric) .....	min. 97.0 % wt	Iron (Fe) .....	max. 0.01 % wt
Phosphate (PO <sub>4</sub> ) .....	max. 0.01 % wt	Sodium (Na) .....	max. 1.0 % wt
Sulphate (SO <sub>4</sub> ) .....	max. 0.01 % wt	Lead (Pb) .....	max. 0.0005 % wt

HS-No: 2837 19 00 90

Code	Capacity
P5078-1-1000	1 kg

### P5078-3 Potassium cyanide, extra pure

Assay (argentometric) .....	min. 97 %	Thiocyanates (SCN) .....	max. 0.05 %
Insoluble in water .....	max. 0.02 %	Iron (Fe) .....	max. 0.01 %
Chloride (Cl) .....	max. 0.05 %	Lead (Pb) .....	max. 0.001 %
Phosphate (PO <sub>4</sub> ) .....	max. 0.02 %	Sodium (Na) .....	max. 0.5 %
Sulphate (SO <sub>4</sub> ) .....	max. 0.02 %	Zinc (Zn) .....	max. 0.05 %
Sulphide (S) .....	max. 0.001 %		

HS-No: 2837 19 00 90

Code	Capacity
P5078-3-0500	500 g

## POTASSIUM DICHROMATE



Synonyms: Potassium bichromate, Potassium pyrochromate

- $K_2Cr_2O_7$
- M = 294.19 g/mol
- CAS [7778-50-9]
- EC number: 231-906-6

**Physical data:**

- Spec. density: 2.69 g/cm<sup>3</sup>
- Bulk density: 1250 kg/m<sup>3</sup>
- Solub. in water (20 °C): 130 g/l
- Melting point: 398 °C
- Boiling point: > 500 °C
- pH (100 g/l H<sub>2</sub>O, 20 °C) 3.57

**Toxicological data:**

- LD 50 (oral, rat): 25 mg/kg
- WGK: 3

**Safety:**

- EC Index no.: 024-002-00-6
- R: 49-46-E21-E25-E26-37/38-41-43-50/53
- S: 53-36/37-45-60-61
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288
- IATA/ICAO: 6.1 III UN 3288
- PAX: 619
- CAO: 619
- LGK: 6.1 B
- Disposal: 22

### P5082-1 Potassium dichromate, reagent grade

Assay (iodometric) .....	min. 99.9 %	Copper (Cu) .....	max. 0.001 %
Insoluble matter .....	max. 0.005 %	Iron (Fe) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.001 %	Lead (Pb) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Sodium (Na) .....	max. 0.01 %
Calcium (Ca) .....	max. 0.002 %	Loss on drying (105 °C) .....	max. 0.05 %

HS-No: 2841 50 00 00

Code	Capacity
P5082-1-0500	500 g
P5082-1-1000	1 kg



## POTASSIUM DICHROMATE, VOLUMETRIC SOLUTIONS



### P5091-0 Potassium dichromate, solution 1/120 mol/l (0.05 N)

Synonyms: Potassium bichromate, Potassium pyrochromate

HS-No: 2841 50 00 00

- $K_2Cr_2O_7$
- M = 294.19 g/mol
- CAS [7778-50-9]
- EC number: 231-906-6

**Toxicological data:**

- WGK: 3

**Safety:**

- EC Index no.: 024-002-00-6
- R: 49-46-52/53
- S: 53-45-61
- Poison class CH (Swiss): F

**Transport/storage:**

- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- LGK: 6.1B
- Disposat: 22

Code	Capacity
P5091-0-1000	1.0 L

1ml = 0.002452 g  $K_2Cr_2O_7$

### P5092-0 Potassium dichromate, solution 1/24 mol/l (0.25 N)

Synonyms: Potassium bichromate, Potassium pyrochromate



- $K_2Cr_2O_7$
- M = 294.19 g/mol
- CAS [7778-50-9]
- EC number: 231-906-6

**Toxicological data:**

- LD 50 (oral, rat): 95 mg/kg (toxic component)
- WGK: 3

**Safety:**

- EC Index no.: 024-002-00-6
- R: 49-46-43-52/53
- S: 53-24-37-45-61
- Poison class CH (Swiss): F

**Transport/storage:**

- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- LGK: 6.1B
- Disposat: 22

HS-No: 2841 50 00 00

Code	Capacity
P5092-0-1000	1.0 L

1ml = 0.012258 g  $K_2Cr_2O_7$

**Physical data:**

- Density: 1.01 g/cm<sup>3</sup>
- pH (20 °C) ~ 3.8

### P5093-0 Potassium dichromate, solution 1/6 mol/l (1 N)

Synonyms: Potassium bichromate, Potassium pyrochromate



- $K_2Cr_2O_7$
- M = 294.19 g/mol
- CAS [7778-50-9]
- EC number: 231-906-6

**Toxicological data:**

- WGK: 3

**Safety:**

- EC Index no.: 024-002-00-6
- R: 49-46-43-51/53
- S: 53-24-37-45-61
- Poison class CH (Swiss): F

**Transport/storage:**

- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- LGK: 6.1B
- Disposat: 22

HS-No: 2841 50 00 00

Code	Capacity
P5093-0-1000	1.0 L

1ml = 0.04903 g  $K_2Cr_2O_7$

### P5094-0 Potassium dichromate, solution 1/60 mol/l (0.1 N)

Synonyms: Potassium bichromate, Potassium pyrochromate



- $K_2Cr_2O_7$
- M = 294.19 g/mol
- CAS [7778-50-9]
- EC number: 231-906-6

**Toxicological data:**

- WGK: 3

**Safety:**

- EC Index no.: 024-002-00-6
- R: 49-46-52/53
- S: 53-45-61
- Poison class CH (Swiss): F

**Transport/storage:**

- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- PAX: 619
- CAO: 619
- LGK: 6.1B
- Disposat: 22

HS-No: 2841 50 00 00

Code	Capacity
P5094-0-1000	1.0 L

1ml = 0.004903 g  $K_2Cr_2O_7$

**Physical data:**

- Density: 1.06 g/cm<sup>3</sup>
- pH (20 °C) ~ 4.1

## POTASSIUM DIHYDROGEN PHOSPHATE

Synonyms: Potassium biphosphate, Potassium phosphate monobasic, Primary potassium phosphate, Mono-potassium phosphate

- $KH_2PO_4$
- M = 136.09 g/mol
- CAS [7778-77-0]
- EC number: 231-931-4

- Bulk density: ~ 1200 kg/m<sup>3</sup>
- Solub. in water (20 °C): 222 g/l
- Melting point: ~ 253 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 4.4

**Safety:**

- Poison class CH (Swiss): 5

**Transport/storage:**

- LGK: 10-13
- Disposat: 14

**Physical data:**

- Spec. density: 2.34 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 1

### P5104-1 Potassium dihydrogen phosphate, reagent grade

HS-No: 2835 24 00 00

Assay (acidimetric) .....	min. 99.5 %	Arsenic (As) .....	max. 0.00005 %
pH (5%, H <sub>2</sub> O) .....	4.2 - 4.5	Heavy metals (as Pb) .....	max. 0.0005 %
Appearance of solution 10% in water	clear and colourless	Iron (Fe) .....	max. 0.0005 %
Total N .....	max. 0.001 %	Sodium (Na) .....	max. 0.02 %
Chlorides (Cl) .....	max. 0.0005 %	KMnO <sub>4</sub> red matter (as O) .....	passes test
Sulfates (SO <sub>4</sub> ) .....	max. 0.003 %	Loss on drying (105 °C) .....	max. 0.1 %

Code	Capacity
P5104-1-0500	500 g
P5104-1-1000	1 kg

### P5104-4 Potassium dihydrogen phosphate, HPLC grade

HS-No: 2835 24 00 00

See specification in Solvents Specification - 47

Code	Capacity
P5104-4-0500	500 g
P5104-4-1000	1 kg

## POTASSIUM DISULFITE



Synonyms: Potassium metabisulfite, Potassium pyrosulfite

-  $K_2S_2O_5$   
- M = 222.33 g/mol  
- CAS [16731-55-8]  
- EC number: 240-795-3

- Solub. in water (20 °C): 450 g/l  
- Melting point: 190 °C  
- pH (400 g/l  $H_2O$ , 20 °C) 3.5 - 5.0

**Safety:**  
- R: 31-37-41  
- S: 26-39  
- Poison class CH (Swiss): 3

**Physical data:**  
- Bulk density: ~ 1000 - 1200 kg/m<sup>3</sup>

**Toxicological:**  
- LD 50 (oral, rat): 2300 mg/kg  
- WGK: 1

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 14

### P5110-3 Potassium disulfite, extra pure

HS-No: 2832 20 00 00

Assay (iodometric) ..... min. 95 %	Heavy metals (as Pb) ..... max. 0.001 %
Assay (iodometric, $SO_2$ ) ..... 54.8 - 57.6 %	Lead (Pb) ..... max. 0.0005 %
Appearance of solution ..... passes test	Mercury (Hg) ..... max. 0.0001 %
Chlorides (Cl) ..... max. 0.01 %	Selenium (Se) ..... max. 0.0005 %
Thiosulfates ( $S_2O_3$ ) ..... passes test	Zinc (Zn) ..... max. 0.0025 %
Arsenic (As) ..... max. 0.0002 %	Organic volatile matter ..... passes test
Copper (Cu) ..... max. 0.0025 %	Residual solvent (according to ICH) excluded by production process
Iron (Fe) ..... max. 0.001 %	

Code	Capacity
P5110-3-0500	500 g

## POTASSIUM FLUORIDE



Synonyms: Fluorine potassium

- KF  
- M = 58.10 g/mol  
- CAS [7789-23-3]  
- EC number: 232-151-5

- Vapour pressure: (885 °C) 1.3 hPa  
- pH (20 °C) > 7

- S: 26-36/37-45  
- Poison class CH (Swiss): 3

**Physical data:**  
- Spec. density: 2.49 g/cm<sup>3</sup>  
- Bulk density: ~ 400 kg/m<sup>3</sup>  
- Solub. in water (20 °C): soluble  
- Melting point: ~ 855 °C  
- Boiling point: 1500 °C

**Toxicological data:**  
- LD 50 (oral, rat): 245 mg/kg  
- MAK: 2.5 mg/m<sup>3</sup>  
- WGK: 1

**Transport/storage:**  
- ADR: 6.1 T5 III UN 1812  
- IMDG: 6.1 III UN 1812  
- IATA/ICAO: 6.1 III UN 1812  
- PAX: 619  
- CAO: 619  
- LGK: 6.1 B  
- Disposal: 23

**Safety:**  
- EC Index no.: 009-005-00-2  
- R: 23/24/25

### P5114-1 Potassium Fluoride, reagent grade

HS-No: 2826 19 00 00

Assay ..... min. 99 %	Arsenic (As) ..... max. 0.001 %
Potassium hexafluorosilicate ( $K_2SiF_6$ ) max. 0.1 %	Lead (Pb) ..... max. 0.001 %
Chloride (Cl) ..... max. 0.005 %	Iron (Fe) ..... max. 0.002 %
Sulfates ( $SO_4$ ) ..... max. 0.05 %	Loss on ignition (500 °C, 15 min) ..... max. 0.3 %

Code	Capacity
P5114-1-0500	500 g
P5114-1-1000	1 kg

### P5114-3 Potassium Fluoride, extra pure

HS-No: 2826 19 00 00

Assay ..... min. 99 %	Sulfates ( $SO_4$ ) ..... max. 0.05 %
Free Acid (as HF) ..... max. 0.1 %	Arsenic (As) ..... max. 0.001 %
Free Alkali (as KOH) ..... max. 0.1 %	Heavy metals (as Pb) ..... max. 0.003 %
Insoluble in water ..... max. 0.1 %	Iron (Fe) ..... max. 0.002 %
Chlorides (Cl) ..... max. 0.005 %	Lead (Pb) ..... max. 0.001 %
Hexafluorosilicate ( $SiF_6$ ) ..... max. 0.1 %	Calcination Residue (500 °C, 15 min) max. 0.3 %

Code	Capacity
P5114-3-0500	500 g

## POTASSIUM HEXACYANOFERRATE (II) TRIHYDRATE

Potassium ferrocyanide, Yellow prussiate of potash, Ferrocyanpotassium, Potassium cyanoferrate (II), Potassium ferric cyanide

$K_4[Fe(CN)_6] \cdot 3H_2O$   
-  $C_6FeK_4N_6 \cdot 3H_2O$   
- M = 422.34 g/mol  
- CAS [14459-95-1]  
- EC number: 237-722-2

- Bulk. density: ~ 950-1050 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 289 g/l  
- Melting point: ~ 70 °C (release of crystalline water)  
- pH (100 g/l  $H_2O$ , 20 °C) ~ 9.5 (anhydrous substance)

**Safety:**  
- R: 52/53  
- S: 50.1-61  
- Poison class CH (Swiss): 4

**Physical data:**  
- Form: Solid  
- Spec. density: 1.85 g/cm<sup>3</sup> (anhydrous substance)

**Toxicological data:**  
- LD 50 (oral, rat): 3613 mg/kg (anhydrous substance)  
- WGK: 2

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 28

### P5117-1 Potassium hexacyanoferrate (II) trihydrate, reagent grade

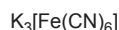
HS-No: 2837 20 00 00

Assay (permanganometric) ..... 99 - 102 %	Cadmium (Cd) ..... max. 0.0005 %
Insoluble in water ..... max. 0.005 %	Copper (Cu) ..... max. 0.002 %
Carbonates ( $CO_3$ ) ..... max. 0.0015 %	Lead (Pb) ..... max. 0.002 %
Chlorides (Cl) ..... max. 0.01 %	Sodium (Na) ..... max. 0.01 %
Sulfates ( $SO_4$ ) ..... max. 0.005 %	

Code	Capacity
P5117-1-0500	500 g
P5117-1-1000	1 kg

## POTASSIUM HEXACYANOFERRATE (III)

Synonyms: Potassium ferricyanotassium, Potassium cyanoferrate (III) Potassium ferric (III) cyanide



- $C_6FeK_3N_6$
- CAS [13746-66-2]
- EC number: 237-323-3

**Physical data:**  
- Form: Solid

- Spec. density: 1.85 g/cm<sup>3</sup>
- Bulk density: ~ 900 - 1000 kg/m<sup>3</sup>
- Solub. in water (20 °C): 464 g/l
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 6

**Toxicological data:**  
- WGK: 2

**Safety:**  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 28

### P5125-1 Potassium hexacyanoferrate (III), reagent grade

HS-No: 2837 20 00 00

Assay (Iodometric) .....	min. 99.0 %	Cobalt (Co) .....	max. 0.005 %
Insoluble in water .....	max. 0.005 %	Copper (Cu) .....	max. 0.005 %
Chloride (Cl) .....	max. 0.01 %	Lead (Pb) .....	max. 0.002 %
Hexacyanoferrate (II) [Fe(CN <sub>6</sub> )] .....	max. 0.02 %	Nickel (Ni) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Sodium (Na) .....	max. 0.02 %
Cadmium (Cd) .....	max. 0.0005 %	Zinc (Zn) .....	max. 0.0005 %
Calcium (Ca) .....	max. 0.0005 %		

Code	Capacity
P5125-1-0500	500 g
P5125-1-1000	1 kg

## POTASSIUM HYDROGEN CARBONATE

Synonyms: Potassium bicarbonate

- KHCO<sub>3</sub>
- M = 100.12 g/mol
- CAS [298-14-6]
- EC number: 206-059-0

**Physical data:**  
- Spec. density: 2.17 g/cm<sup>3</sup>  
- Bulk density: ~ 900 - 1100 kg/m<sup>3</sup>

- Solub. in water (20 °C): 224 g/l
- Melting point: 292 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 8.0 - 8.6

**Toxicological data:**  
- LD 50 (oral, rat) > 2000 mg/kg  
- WGK: 1

**Safety:**  
- Poison class CH (Swiss): 5

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 14

### P5135-1 Potassium hydrogen carbonate, reagent grade

HS-No: 2836 40 00 00

Assay (KHCO <sub>3</sub> ) .....	min. 99.5%	Silicate (SiO <sub>3</sub> ) .....	max. 0.005%
pH value (50 g/l, 25 °C) .....	max. 8.6	Sodium (Na) .....	max. 0.02%
Appearance of solution .....	passes test	Magnesium (Mg) .....	max. 0.003%
Insoluble matter in water .....	max. 0.002%	Aluminium (Al) .....	max. 0.002%
Chloride and chlorate (as Cl) .....	max. 0.005%	Calcium (Ca) .....	max. 0.003%
Sulfur compounds (as SO <sub>4</sub> ) .....	max. 0.005%	Iron (Fe) .....	max. 0.0005%
Total nitrogen (N) .....	max. 0.001%	Heavy metals (as Pb) .....	max. 0.0005%
Phosphate (PO <sub>4</sub> ) .....	max. 0.002%		

Code	Capacity
P5135-1-0500	500 g
P5135-1-1000	1 kg

### P5135-3 Potassium hydrogen carbonate, extra pure

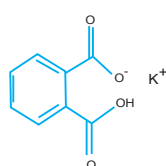
HS-No: 2836 40 00 00

Assay (acidimetric) .....	min 99.0%	Lead (Pb) .....	min. 0.002%
pH (1% solution) .....	8.0 - 8.6	Sodium (Na) .....	min. 0.1%
Chloride (Cl) .....	min. 0.005%	Sulphate (SO <sub>4</sub> ) .....	min. 0.02%
Iron (Fe) .....	min. 0.002%		

Code	Capacity
P5135-3-0500	500 g

## POTASSIUM HYDROGEN PHTHALATE

Synonyms: Potassium biphthalate, Phthalic acid monopotassium salt



- $C_8H_5KO_4$
- M = 204.22 g/mol
- CAS [877-24-7]
- EC number: 212-889-4

**Physical data:**  
- Spec. density: 1.636 g/cm<sup>3</sup>  
- Bulk density: ~ 900 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 80 g/l  
- Melting point: 295 - 300 °C  
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 4.0

**Toxicological data:**  
- LD 50 (oral, rat): > 3200 mg/kg  
- WGK: 1

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 3

### P5141-1 Potassium hydrogen phthalate, reagent grade

HS-No: 2917 39 80 80

Assay (acidimetric) .....	min. 99.9 %	Copper (Cu) .....	max. 0.0005 %
Insoluble in water .....	max. 0.005 %	Heavy metals (as Pb) .....	max. 0.0005 %
Phtahalic acid .....	max. 0.005 %	Iron (Fe) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.001 %	Nickel (Ni) .....	max. 0.0005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Sodium (Na) .....	max. 0.005 %
Cadmium (Cd) .....	max. 0.0005 %	Zinc (Zn) .....	max. 0.0005 %
Cobalt (Co) .....	max. 0.0005 %	Loss on drying (105 °C) .....	max. 0.2 %

Code	Capacity
P5141-1-0500	500 g
P5141-1-1000	1 kg



## POTASSIUM HYDROGEN SULFATE

Synonyms: Potassium bisulfate

- KHSO<sub>4</sub>
- M = 136.17 g/mol
- CAS [7646-93-7]
- EC number: 231-594-1

**Physical data:**  
- Spec. density: 2.32 g/cm<sup>3</sup>  
- Bulk density: ~ 1140 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 490 g/l (exothermic process)  
- Melting point: 210 °C (decomposes)

- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 1

**Toxicological:**  
- LD 50 (oral, rat): 2340 mg/kg  
- WGK: 1

**Safety:**  
- EC Index no.: 016-056-00-4  
- R: 34-37  
- S: 26-36/37/39-45

- Poison class CH (Swiss): 3

**Transport/storage:**  
- ADR: 8 C2 II UN 2509  
- IMDG: 8 II UN 2509  
- IATA/ICAO: 8 II UN 2509  
- PAX: 815  
- CAO: 817  
- LGK: 8  
- Disposal: 14

**P5144-1 Potassium hydrogen sulfate, reagent grade**

HS-No: 2833 29 90 00

Assay (KHSO <sub>4</sub> )	99.0 - 101%	Sodium (Na)	max. 0.02%
Appearance of solution	passes test	Magnesium (Mg)	max. 0.0005%
Insoluble matter in water	max. 0.002%	Aluminium (Al)	max. 0.001%
Chloride (Cl)	max. 0.0005%	Calcium (Ca)	max. 0.002%
Total nitrogen (as N)	max. 0.002%	Iron (Fe)	max. 0.0005%
Phosphate (PO <sub>4</sub> )	max. 0.001%	Arsenic (As)	max. 0.0003%
Silicate (SiO <sub>3</sub> )	max. 0.001%	Heavy metals (as Pb)	max. 0.0005%

Code	Capacity
P5144-1-0500	500 g

**P5144-3 Potassium hydrogen sulfate, extra pure**

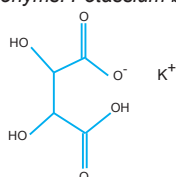
HS-No: 2833 29 90 00

Assay (acidimetric)	min. 99 %	Calcium (Ca)	max. 0.01 %
Chlorides (Cl)	max. 0.003 %	Copper (Cu)	max. 0.005 %
Nitrates (NO <sub>3</sub> )	max. 0.005 %	Heavy metals (as Pb)	max. 0.004 %
Phosphates (PO <sub>4</sub> )	max. 0.005 %	Iron (Fe)	max. 0.005 %
Aluminium (Al)	max. 0.002 %	Magnesium (Mg)	max. 0.01 %
Arsenic (As)	max. 0.0005 %	Nickel (Ni)	max. 0.01 %

Code	Capacity
P5144-3-0500	500 g

**POTASSIUM HYDROGEN TARTRATE**

Synonyms: Potassium bitartrate, Tartaric acid monopotassium salt



- C<sub>4</sub>H<sub>5</sub>KO<sub>6</sub>
- M = 188.14 g/mol
- CAS [868-14-4]
- EC number: 212-769-1

**Physical data:**  
- Bulk density: ~ 720 kg/m<sup>3</sup>

- Solub. in water (20 °C): 5.7 g/l
- Melting point: ~ 250 °C (decomposes)
- pH (saturated solution H<sub>2</sub>O, 20 °C): 3.4 - 3.7

**Toxicological data:**  
- WGK: 1

- Safety:**  
- Poison class CH (Swiss): 5
- Transport/storage:**  
- LGK: 10-13  
- Disposal:

**P5146-3 Potassium hydrogen tartrate, extra pure**

HS-No: 2918 13 00 00

Assay (acidimetric)	min. 99.5 %	Barium (Ba)	max. 0.15 %
pH (0.5%, H <sub>2</sub> O)	3.0 - 3.8	Calcium (Ca)	max. 0.01 %
Free acid (as Tartaric acid)	max. 0.2 %	Copper (Cu)	max. 0.0025 %
Specific rotation ([α] <sub>D</sub> <sup>20</sup> )	8.0 - 9.2 °	Heavy Metals (as Pb)	max. 0.001 %
Chlorides (Cl)	max. 0.02 %	Iron (Fe)	max. 0.002 %
Oxalates (C <sub>2</sub> O <sub>4</sub> )	max. 0.05 %	Lead (Pb)	max. 0.001 %
Sulfates (SO <sub>4</sub> )	max. 0.008 %	Nickel (Ni)	max. 0.002 %
Ammonium (NH <sub>4</sub> )	max. 0.005 %	Zinc (Zn)	max. 0.0025 %
Arsenic (As)	max. 0.0001 %	Loss on drying (105 °C)	max. 0.5 %

Code	Capacity
P5146-3-1000	1 kg

**POTASSIUM HYDROXIDE**

Synonyms: Caustic potash, Potassium hydrate, Potassium oxide hydrate

- KOH
- M = 56.11 g/mol
- CAS [1310-58-3]
- EC number: 215-181-3

**Physical data:**  
- Spec. density: 2.04 g/cm<sup>3</sup>  
- Solub. in water (20 °C): soluble  
- Melting point: 360 °C  
- Boiling point: 1320 °C  
- pH (56 g/l H<sub>2</sub>O, 20 °C) ~ 14

**Toxicological:**  
- LD 50 (oral, rat): 273 mg/kg  
- WGK: 1

**Safety:**  
- EC Index no.: 019-002-00-8  
- R: 22-35  
- S: 26-36/37/39-45  
- Poison class CH (Swiss): 2



**Transport/storage:**  
- ADR: 8 C6 II UN 1813  
- IMDG: 8 II UN 1813  
- IATA/ICAO: 8 II UN 1813  
- PAX: 814  
- CAO: 816  
- LGK: 8 B  
- Disposal: 13

**P5158-1 Potassium hydrogen tartrate, reagent grade**

HS-No: 2815 20 10 00

Assay (acidimetric)	min. 85.0 %	Calcium (Ca)	max. 5.0 ppm
Carbonate (as potassium carbonate)	max. 1.0 %	Cobalt (Co)	max. 1.0 ppm
Chloride (Cl)	max. 10 ppm	Chromium (Cr)	max. 1.0 ppm
Phosphate (PO <sub>4</sub> )	max. 5.0 ppm	Copper (Cu)	max. 1.0 ppm
Sulphate (SO <sub>4</sub> )	max. 5.0 ppm	Iron (Fe)	max. 5.0 ppm
Total nitrogen (N)	max. 5.0 ppm	Manganese (Mn)	max. 0.5 ppm
Heavy metals (as Pb)	max. 5.0 ppm	Nickel (Ni)	max. 1.0 ppm
Aluminium (Al)	max. 10 ppm	Zinc (Zn)	max. 1.0 ppm

Code	Capacity
P5158-1-0500	500 g
P5158-1-1000	1 kg

**P5159-1 Potassium hydroxide solution 10%, reagent grade**

HS-No: 2815 20 10 00

Assay (acidimetric)	min. 10.0 %	Sulphate (SO <sub>4</sub> )	max. 0.003 %
Carbonate (as Na <sub>2</sub> CO <sub>3</sub> )	max. 1 %	Total (N)	max. 0.005 %
Chloride (Cl)	max. 0.002 %	Aluminium (Al)	max. 0.001 %
Phosphate (PO <sub>4</sub> )	max. 0.002 %	Heavy metals (as Pb)	max. 0.001 %
Silicates (SiO <sub>2</sub> )	max. 0.005 %	Iron (Fe)	max. 0.001 %

Code	Capacity
P5159-1-1000	1 kg

## POTASSIUM HYDROXIDE, VOLUMETRIC SOLUTIONS



### P5161-0 Potassium hydroxide, solution 0.1 mol/l (0.1N)

Synonyms: Caustic potash, Potassium hydrate, Potassium oxide hydrate

- KOH  
- M = 56.11 g/mol  
- CAS [1310-58-3]  
- EC number: 215-181-3

**Physical data:**  
- Density: 1.01 g/cm<sup>3</sup>  
- Boiling point: ~ 100 °C  
- pH (20 °C) ~ 13

**Toxicological data:**  
- LD 50 (oral, rat): 273 mg/kg (pure substance)  
- WGK: 0

**Safety:**  
- EC Index no.: 019-002-00-8  
- R: 36/38  
- S: 26-37  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- ADR: 8 C5 II UN 1814  
- IMDG: 8 II UN 1814  
- IATA/ICAO: 8 II UN 1814  
- PAX: 809  
- CAO: 813  
- LGK: 8 B

1ml = 0.005611 g KOH

HS-No: 2815 20 90 00

Code	Capacity
P5161-0-1000	1.0 L

### P5168-0 Potassium hydroxide, solution 0.5 mol/l (0.5N)

Synonyms: Caustic potash, Potassium hydrate, Potassium oxide hydrate

- KOH  
- M = 56.11 g/mol  
- CAS [1310-58-3]  
- EC number: 215-181-3

**Physical data:**  
- Density: 1.02 g/cm<sup>3</sup>  
- pH (20 °C) ~ 13

**Toxicological data:**  
- LD 50 (oral, rat): 273 mg/kg (pure substance)  
- WGK: 0

**Safety:**  
- EC Index no.: 019-002-00-8  
- R: 34  
- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- ADR: 8 C5 II UN 1814  
- IMDG: 8 II UN 1814  
- IATA/ICAO: 8 II UN 1814  
- PAX: 809  
- CAO: 813  
- LGK: 8 B

1ml = 0.02806 g KOH

HS-No: 2815 20 90 00

Code	Capacity
P5168-0-1000	1.0 L

### P5172-0 Potassium hydroxide, solution 1 mol/l (1N)

Synonyms: Caustic potash, Potassium hydrate, Potassium oxide hydrate

- KOH  
- M = 56.11 g/mol  
- CAS [1310-58-3]  
- EC number: 215-181-3

**Physical data:**  
- Density: 1.05 g/cm<sup>3</sup>  
- pH (20 °C) ~ 14

**Toxicological data:**  
- LD 50 (oral, rat): 273 mg/kg (pure substance)  
- WGK: 0

**Safety:**  
- EC Index no.: 019-002-00-8  
- R: 35  
- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 2

**Transport/storage:**  
- ADR: 8 C5 II UN 1814  
- IMDG: 8 II UN 1814  
- IATA/ICAO: 8 II UN 1814  
- PAX: 809  
- CAO: 813  
- LGK: 8 B  
- Disposal: 13

1ml = 0.05611 g KOH

HS-No: 2815 20 90 00

Code	Capacity
P5172-0-1000	1.0 L

### P5175-0 Potassium hydroxide, solution 2 mol/l (2N)

Synonyms: Caustic potash, Potassium hydrate, Potassium oxide hydrate

- KOH  
- M = 56.11 g/mol  
- CAS [1310-58-3]  
- EC number: 215-181-3

**Physical data:**  
- Density: ~1.09 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 0

**Safety:**  
- EC Index no.: 019-002-00-8  
- R: 35  
- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 2

**Transport/storage:**  
- ADR: 8 C5 II UN 1814  
- IMDG: 8 II UN 1814

- IATA/ICAO: 8 II UN 1814  
- PAX: 809  
- CAO: 813  
- LGK: 8 B  
- Disposal: 13

1ml = 0.11222 g KOH

HS-No: 2815 20 90 00

Code	Capacity
P5175-0-1000	1.0 L

## POTASSIUM IODATE



Synonyms:

- KIO<sup>3</sup>  
- M = 214.00 g/mol  
- CAS [7758-05-6]  
- EC number: 231-831-9

**Physical data:**  
- Spec. density: 3.98 g/cm<sup>3</sup>  
- Bulk density: ~ 2000 kg/m<sup>3</sup>  
- Solub. in water (20 °C): soluble

- melting point: 560 °C  
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 6

**Toxicological data:**  
- WGK: 1

**Safety:**  
- R: 8  
- S: 17  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- ADR: 5.1 O2 II UN 1479  
- IMDG: 5.1 II UN 1479  
- IATA/ICAO: 5.1 II UN 1479  
- PAX: 508  
- CAO: 511  
- LGK: 5.1 B  
- Disposal: 22

HS-No: 2829 90 80 00

### P5180-3 Potassium iodate, extra pure

Assay (iodometric) ..... min. 99 %  
pH (5%, H<sub>2</sub>O) ..... 5 - 8  
Acidity/alkalinity ..... passes test  
Chlorides, chlorates, bromides (as Cl) max. 0.02 %  
Iodides (I) ..... max. 0.002 %  
Sulfates (SO<sub>4</sub>) ..... max. 0.05 %

Arsenic (As) ..... max. 0.0003 %  
Copper (Cu) ..... max. 0.001 %  
Iron (Fe) ..... max. 0.005 %  
Lead (Pb) ..... max. 0.001 %  
Zinc (Zn) ..... max. 0.001 %  
Loss on drying (105 °C, 3 h) ..... max. 0.5 %

Code	Capacity
P5180-3-0500	500 g



## POTASSIUM IODIDE

Synonyms: Knollide

- KI
- M = 166.01 g/mol
- CAS [7681-11-0]
- EC number: 231-659-4
- Melting point: 686 °C
- Boiling point: 1330 °C
- Vapour pressure: (745 °C) 1.3 hPa
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 6.9

**Safety:**

- Poison class CH (Swiss): 4

**Transport/storage:**

- LGK: 10-13
- disposal: 14

**Physical data:**

- Spec. density: 3.13 g/cm<sup>3</sup>
- Bulk density: ~ 1500 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble

**Toxicological data:**

- LD 50 (oral, rat): 2779 mg/kg
- WGK: 1

### P5182-1 Potassium iodide, reagent grade

HS-No: 2827 60 00 90

Assay (argentometric) .....	min. 99.5 %	Barium (Ba) .....	max. 0.002 %
pH (5% solution) .....	7 - 9	Calcium (Ca) .....	max. 0.0010 %
Alkalinity (as KOH) .....	max. 220 ppm	Copper (Cu) .....	max. 0.0002 %
Chloride and Bromide (as Cl) .....	max. 0.01 %	Iron (Fe) .....	max. 5 ppm
Iodates (IO <sub>3</sub> ) .....	max. 2 ppm	Magnesium (Mg) .....	max. 0.001 %
Sulphates (SO <sub>4</sub> ) .....	max. 50 ppm	Sodium (Na) .....	max. 0.030 %
Nitrogen compounds (as N) .....	max. 10 ppm	Lead (Pb) .....	max. 0.0002 %
Heavy metals (as Pb) .....	max. 10 ppm	Insoluble matter .....	max. 50 ppm
Arsenic (As) .....	max. 1 ppm	Loss on drying .....	max. 0.2 %

Code	Capacity
P5182-1-0500	500 g
P5182-1-1000	1 kg

## POTASSIUM NITRATE



Synonyms: Nitric acid potassium salt, Saltpeter

- KNO<sub>3</sub>
- M = 101.11 g/mol
- CAS [7757-79-1]
- EC number: 231-818-8
- Melting point: 334 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 5.5 - 8.0

- Poison class CH (Swiss): 4

**Physical data:**

- Spec. density: 2.11 g/cm<sup>3</sup>
- Bulk density: ~ 800 kg/m<sup>3</sup>
- Solub. in water (20 °C): 320 g/l

**Toxicological data:**

- LD 50 (oral, rat): 3750 mg/kg
- WGK: 1

**Safety:**

- R: 8
- S: 16-41

**Transport/storage:**

- ADR: 5.1 O2 III UN 1486
- IMDG: 5.1 III UN 1486
- IATA/ICAO: 5.1 III UN 1486
- PAX: 516
- CAO: 518
- LGK: 5.1 B
- Disposal: 14

### P5196-1 Potassium nitrate, reagent grade

HS-No: 2834 21 00 00

Assay (acidimetric) .....	min. 99 %	Calcium (Ca) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	6 - 8	Copper (Cu) .....	max. 0.0001 %
Chloride (Cl) .....	max. 0.001 %	Heavy Metals (as Pb) .....	max. 0.0005 %
Iodates (IO <sub>3</sub> ) .....	max. 0.0005 %	Iron (Fe) .....	max. 0.0003 %
Nitrites (NO <sub>2</sub> ) .....	max. 0.001 %	Lead (Pb) .....	max. 0.0001 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0005 %	Sodium (Na) .....	max. 0.02 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %	Zinc (Zn) .....	max. 0.0005 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %		

Code	Capacity
P5196-1-1000	1 kg

### P5196-3 Potassium nitrate, extra pure

HS-No: 2834 21 00 00

Assay (acidimetric) .....	min. 99 %	Calcium (Ca) .....	max. 0.005 %
Insoluble in water .....	max. 0.025 %	Copper (Cu) .....	max. 0.001 %
Acidity/Alkalinity .....	passes test	Heavy metals (as Pb) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	4.5 - 8.5	Iron (Fe) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.001 %	Lead (Pb) .....	max. 0.001 %
Nitrites (NO <sub>2</sub> ) .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.001 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.003 %	Sodium (Na) .....	max. 0.1 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Zinc (Zn) .....	max. 0.001 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.004 %	Loss on drying (105 °C, 4h) .....	max. 0.5 %
Arsenic (As) .....	max. 0.0001 %		

Code	Capacity
P5196-3-1000	1 kg

## POTASSIUM NITRITE

Synonyms: Nitrous acid potassium salt

- KNO<sub>2</sub>
- Solub. in water (20 °C): soluble
- Melting point: 440 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~7 - 10

- S: 45-61
- Poison class CH (Swiss): 2

- KNO<sub>2</sub>
- M = 85.11 g/mol
- CAS [7758-09-0]
- EC number: 231-832-4

**Physical data:**

- Form: Solid
- Spec. density: 1.92 g/cm<sup>3</sup>
- Bulk density: ~ 700 kg/m<sup>3</sup>

**Toxicological data:**

- WGK: 2

**Safety:**

- EC Index no.: 007-011-00-X
- R: 8-25-50

**Transport/storage:**

- ADR: 5.1 O2 III UN 1488
- IMDG: 5.1 III UN 1488
- IATA/ICAO: 5.1 III UN 14868
- PAX: 508
- CAO: 511
- LGK: 5.1 B
- Disposal: 14

### P5204-1 Potassium nitrite, reagent grade

HS-No: 2834 10 00 00

Assay (permanganometric) .....	min. 98 %	Copper (Cu) .....	max. 0.0005 %
Insoluble in water .....	max. 0.01 %	Heavy metals (as Pb) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	7.0 - 10.0	Iron (Fe) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.005 %	Lead (Pb) .....	max. 0.0005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Magnesium (Mg) .....	max. 0.002 %
Cadmium (Cd) .....	max. 0.0005 %	Sodium (Na) .....	max. 0.25 %
Calcium (Ca) .....	max. 0.003 %	Zinc (Zn) .....	max. 0.0005 %

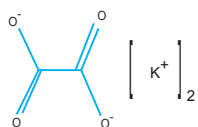
Code	Capacity
P5204-1-0500	500 g



## POTASSIUM OXALATE MONOHYDRATE



Synonyms: Oxalic acid dipotassium salt monohydrate



- $C_2K_2O_4 \cdot H_2O$
- M = 184.24 g/mol
- CAS [6487-48-5]
- EC number: 209-506-8

- Physical data:**
- Spec. density: 2.13 g/cm<sup>3</sup>
  - Bulk density: ~ 700 - 1100 kg/m<sup>3</sup>
  - Solub. in water (20 °C): 360 g/l
  - pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 7.0 - 8.5

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 607-007-00-3
- R: 21/22
- S: 24/25-37-46
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 6.1 T3 III UN 3282
- IMDG: 6.1 III UN 3282
- IATA/ICAO: 6.1 III UN 3282
- PAX: 619
- CAO: 619
- LGK: 10-13
- Disposal: 3

### P5212-3 Potassium oxalate monohydrate, extra pure

Assay (permanganometric) .....	min. 99 %	Copper (Cu) .....	max. 0.003 %
Insoluble in water .....	max. 0.025 %	Heavy metals (as Pb) .....	max. 0.002 %
pH (5%, H <sub>2</sub> O) .....	7 - 8.5	Iron (Fe) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.002 %	Lead (Pb) .....	max. 0.002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.02 %	Nickel (Ni) .....	max. 0.003 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.005 %		

HS-No: 2917 11 00 90

Code	Capacity
P5212-3-0500	500 g

## POTASSIUM PERMANGANATE



Synonyms: Permanganic acid potassium salt

- KMnO<sub>4</sub>
- M = 158.04 g/mol
- CAS [7722-64-7]
- EC number: 231-760-3

- Physical data:**
- Spec. density: 2.70 g/cm<sup>3</sup>
  - Bulk density: ~ 1300 - 1600 kg/m<sup>3</sup>
  - Solub. in water (20 °C): 64 g/l
  - Melting point: > 240 °C (decomposes)

- Vapour pressure: (20 °C) < 0.01 hPa
- pH (20 g/l H<sub>2</sub>O, 20 °C) ~ 7.9

**Toxicological data:**

- LD 50 (oral, rat): 1090 mg/kg
- WGK: 2

**Safety:**

- EC Index no.: 025-002-00-9
- R: 8-22-50/53

- S: 46-60-61
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 5.1 O2 II UN 1490
- IMDG: 5.1 II UN 1490
- IATA/ICAO: 5.1 II UN 1490
- PAX: 508
- CAO: 511
- LGK: 5.1 B
- Disposal: 22

### P5219-1 Potassium permanganate, reagent grade

Assay (permanganometric) .....	min. 99 %	Copper (Cu) .....	max. 0.0005 %
Insoluble in water .....	max. 0.1 %	Heavy metals (as Pb) .....	max. 0.003 %
Chlorides (Cl) .....	max. 0.005 %	Iron (Fe) .....	max. 0.002 %
Chlorides, Chlorates (as Cl) .....	max. 0.005 %	Lead (Pb) .....	max. 0.002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Loss on drying .....	max. 0.2 %
Total N .....	max. 0.005 %		

HS-No: 2841 61 00 00

Code	Capacity
P5219-1-1000	1 kg

### P5219-3 Potassium permanganate, extra pure

Assay (iodometric) .....	min. 99 %	Sulfates (SO <sub>4</sub> ) .....	max. 0.03 %
Appearance of solution .....	passes test	Loss on drying .....	max. 0.02 %
Insoluble in water .....	max. 0.2 %	Residual solvents (Ph Eur/ICH) .....	Excluded by production process
Chlorides (Cl) .....	max. 0.01 %		

HS-No: 2841 61 00 00

Code	Capacity
P5219-3-0500	500 g

## POTASSIUM PERMANGANATE, VOLUMETRIC SOLUTIONS



### P5226-0 Potassium permanganate, solution 0.002 mol/l (0.01 N)

Synonyms: Permanganate acid potassium salt

- KMnO<sub>4</sub>
- M = 158.04 g/mol
- CAS [7722-64-7]
- EC number: 231-760-3

**Physical data:**

- Density: 1.00 g/cm<sup>3</sup>

**Safety:**

- EC Index no.: 025-002-00-9
- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13
- Disposal: 22

1ml = 0.000316 g KMnO<sub>4</sub>

HS-No: 2841 61 00 00

Code	Capacity
P5226-0-1000	1.0 L

### P5227-0 Potassium permanganate, solution 0.02 mol/l (0.1 N)

Synonyms: Permanganate acid potassium salt

- KMnO<sub>4</sub>
- M = 158.04 g/mol
- CAS [7722-64-7]
- EC number: 231-760-3

**Toxicological data:**

- WGK: 0

**Safety:**

- EC Index no.: 025-002-00-9
- R: 52/53
- S: 61
- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13
- Disposal: 22

1ml = 0.00316 g KMnO<sub>4</sub>

HS-No: 2841 61 00 00

Code	Capacity
P5227-0-1000	1.0 L

## P5228-0 Potassium permanganate, solution 0.2 mol/l (1 N)

Synonyms: Permanganate acid potassium salt

- KMnO <sub>4</sub>	<b>Physical data:</b>
- M = 158.04 g/mol	- Density: 1.01 g/cm <sup>3</sup>
- CAS [7722-64-7]	
- EC number: 231-760-3	<b>Safety:</b>
	- EC Index no.: 025-002-00-9
	- R: 51/53
	- S: 61
	- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13
- Disposal: 22

1ml = 0.0316 g KMnO<sub>4</sub>

HS-No: 2841 61 00 00

Code	Capacity
P5228-0-1000	1.0 L

## POTASSIUM PEROXODISULFATE



Synonyms: Potassium persulfate, Peroxydisulfuric acid dipotassium salt

- K <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	- pH (50 g/l H <sub>2</sub> O, 20 °C) ~ 4 - 5
- M = 270.33 g/mol	
- CAS [7727-21-1]	
- EC number: 231-781-8	

### Physical data:

- > Spec. density: 2.48 g/cm<sup>3</sup>
- > Bulk density: ~ 780 kg/m<sup>3</sup>
- > Solub. in water (20 °C): 47 g/l
- > Melting point: 100 °C (decomposes)

### Toxicological data:

- LD 50 (oral, rat): 802 mg/kg
- WGK: 1

### Safety:

- R: 8-22-36/37/38-42/43
- S: 22-24-26-37-45
- Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 5.1 O2 III UN 1492
- IMDG: 5.1 III UN 1492
- IATA/ICAO: 5.1 III UN 1492
- PAX: 561
- CAO: 518
- LGK: 5.1 B
- Disposal: 22

## P5230-3 Potassium peroxodisulfate, extra pure

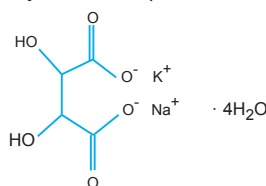
Assay (iodometric) .....	min. 98 %	Iron (Fe) .....	max. 0.002 %
Insoluble in water .....	max. 0.02 %	Lead (Pb) .....	max. 0.005 %
Chlorides (Cl) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.005 %
Copper (Cu) .....	max. 0.005 %	Manganese (Mn) .....	max. 0.0005 %
Heavy metals (as Pb) .....	max. 0.005 %		

HS-No: 2833 40 00 10

Code	Capacity
P5230-3-0500	500 g

## POTASSIUM SODIUM TARTRATE TETRAHYDRATE

Synonyms: Sodium potassium tartrate, Tartaric acid potassium sodium salt



- C<sub>4</sub>H<sub>4</sub>KNaO<sub>6</sub>·4H<sub>2</sub>O
- M = 282.23 g/mol
- CAS [6381-59-5]
- EC number: 205-698-2

### Physical data:

- Bulk density: ~ 1000 kg/m<sup>3</sup>

- Solub. in water (20 °C): 630 g/l
- Melting point: 70 - 80 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 6.5 - 8.5

### Toxicological data:

- WGK: 1

### Safety:

- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13
- Disposal: 3

## P5234-1 Potassium sodium tartrate tetrahydrate, reagent grade

Assay .....	min. 99 %	Ammonium (NH <sub>4</sub> ) .....	max. 0.002 %
Insoluble in water .....	max. 0.005 %	Calcium (Ca) .....	max. 0.004 %
pH (0.5%, H <sub>2</sub> O) .....	7 - 8.5	Copper (Cu) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.0005 %	Iron (Fe) .....	max. 0.0005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.001 %	Lead (Pb) .....	max. 0.0002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.0005 %
Total N .....	max. 0.001 %	Zinc (Zn) .....	max. 0.0005 %

HS-No: 2918 13 00 90

Code	Capacity
P5234-1-0500	500 g
P5234-1-1000	1 kg

## POTASSIUM SULFATE

Synonyms: Sulfuric acid potassium salt

- K<sub>2</sub>SO<sub>4</sub>
- CAS [7778-80-5]
- EC number: 231-915-5

### Physical data:

- Spec. density: 2.66 g/cm<sup>3</sup>
- Bulk density: ~ 1050 kg/m<sup>3</sup>

- Solub. in water (20 °C): 110 g/l
- Melting point: 1069 °C
- Boiling point: 1689 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5.5 - 7.5

### Toxicological data:

- LD 50 (oral, rat): 6600 mg/kg
- WGK: 1

### Safety:

- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13
- Disposal: 14

## P5249-1 Potassium sulfate, reagent grade

Assay (acidimetric) .....	min. 99 %	Calcium (Ca) .....	max. 0.005 %
Insoluble in water .....	max. 0.01 %	Copper (Cu) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	5.5 - 7.5	Iron (Fe) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.0005 %	Lead (Pb) .....	max. 0.0005 %
Phosphate (PO <sub>4</sub> ) .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.002 %
Total N .....	max. 0.0005 %	Sodium (Na) .....	max. 0.005 %
Arsenic (As) .....	max. 0.0001 %	Zinc (Zn) .....	max. 0.0005 %
Cadmium (Cd) .....	max. 0.0005 %		

HS-No: 3104 30 00 00

Code	Capacity
P5249-1-0500	500 g
P5249-1-1000	1 kg

## POTASSIUM THIOCYANATE



Synonyms: Potassium sulfocyanate, Potassium rhodanide, Potassium sulfocyanide

- KSCN
- M = 97.18 g/mol
- CAS [333-20-0]
- EC number: 206-370-1
- Solub. in water (20 °C): soluble
- Melting point: 175 °C
- Boiling point: 500 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 5 - 7

### Safety:

- EC Index no.: 615-004-00-3
- R: 20/21/22-32
- S: 13-36/37-46
- Poison class CH (Swiss): 3

### Physical data:

- Spec. density: 1.89 g/cm<sup>3</sup>
- Bulk density: ~ 750 - 1000 kg/m<sup>3</sup>

### Toxicological data:

- LD 50 (oral, rat): 854 mg/kg
- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### P5258-1 Potassium thiocyanate, reagent grade

Assay (argentometric) .....	min. 99 %	Sulfides (S) .....	max. 0.001 %
Insoluble in ethanol .....	max. 0.01 %	Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %
Insoluble in water .....	max. 0.003 %	Copper (Cu) .....	max. 0.0002 %
Matter consuming I (as I) .....	max. 0.013 %	Iron (Fe) .....	max. 0.0001 %
pH (5%, H <sub>2</sub> O) .....	5.3 - 8.5	Lead (Pb) .....	max. 0.0002 %
Chlorides (Cl) .....	max. 0.005 %	Sodium (Na) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.001 %		

HS-No: 2838 00 00 00

Code	Capacity
P5258-1-0500	500 g

### P5258-3 Potassium thiocyanate, extra prue

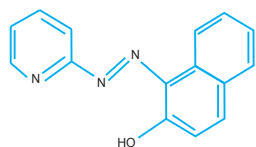
Assay (argentometric) .....	min. 98 %	Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %
Insoluble in water .....	max. 0.002 %	Copper (Cu) .....	max. 0.002 %
pH (5%, H <sub>2</sub> O) .....	5.0 - 8.7	Iron (Fe) .....	max. 0.002 %
Chlorides (Cl) .....	max. 0.001 %	Lead (Pb) .....	max. 0.002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Nickel (Ni) .....	max. 0.002 %

HS-No: 2838 00 00 00

Code	Capacity
P5258-3-0500	500 g
P5258-3-1000	1 kg

## 1-(2-PYRIDYLAZO)-2-NAPHTHOL PAN, INDICATOR

Synonyms:



- C<sub>15</sub>H<sub>11</sub>N<sub>3</sub>O
- M = 249.27 g/mol
- CAS [85-85-8]
- EC number: 201-637-9

### Physical data:

- Solub. in water (20 °C): insoluble
- Melting point 137 - 140 °C
- Bulk density: ~ 190 kg/m<sup>3</sup>

### Toxicological data:

- WGK: 3

### Transport/storage:

- LGK: 10-13
- Disposal: 3
- Use metal indicator: 0.01% - 0.1% in ethanol (96%)

### P9000-1 1-(2-Pyridylazo)-2-naphthol PAN, indicator, reagent grade

Spectral effective content .....	min. 90 %	Solubility test in ethanol .....	passes test
Sensitivity test to copper .....	passes test	Residue after ignition (as sulfate) .....	max. 0.1 %
Melting point .....	138 - 142 °C		

HS-No: 2933 39 95 00

Code	Capacity
P9000-1-0005	5 g

## PYRIDINE



Synonyms:



- C<sub>5</sub>H<sub>5</sub>N
- M = 79.10 g/mol
- CAS [110-86-1]
- EC number: 237-323-3

### Physical data:

- Form: Liquid
- Density: 0.98 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -42 °C
- Boiling point: 115 °C
- Flash point: 17 °C
- Ignition temp.: 550 °C
- Vapour pressure: (20 °C) 0.20 hPa
- Refraction index: (20 °C/D) 1.5092

- Viscosity: (20 °C) 0.95 mPas
- Dipolar moment: (20 °C) 2.2 Debye
- Dielectric const: (25 °C) 12.3
- Evap. heat: (115 °C) 511 kJ/kg
- Saturation conc: (20 °C) 65 g/m<sup>3</sup>
- Expl. limit (upper): 12.4 Vol%
- Expl. limit (lower): 1.7 Vol%
- pH (16 g/l H<sub>2</sub>O, 20 °C) 8.5

### Safety:

- EC Index no.: 613-002-00-7
- R: 11-20/21/22
- S: 26-28.1-36/37-46
- VbF class: B
- Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 3 F1 II UN 1282
- IMDG: 3 II UN 1282
- IATA/ICAO: 3 II UN 1282
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 5

### P9005-1 Pyridine, reagent grade

Assay (G.C) .....	min. 99.5 %	Copper (Cu) .....	max. 0.000002 %
Identity (IR-spectrum) .....	passes test	Iron (Fe) .....	max. 0.00001 %
Density (20 <sup>o</sup> /4 <sup>o</sup> ) .....	0.982 - 0.984	Lead (Pb) .....	max. 0.00001 %
Appearance .....	clear	Magnesium (Mg) .....	max. 0.00001 %
Colour .....	max. 10 Hazen	Manganese (Mn) .....	max. 0.000002 %
Solubility in water .....	passes test	Nickel (Ni) .....	max. 0.000002 %
Chlorides (Cl) .....	max. 0.0005 %	Tin (Sn) .....	max. 0.00001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.0005 %	Zinc (Zn) .....	max. 0.00001 %
Aluminium (Al) .....	max. 0.00005 %	2-picoline (G.C) .....	max. 0.2 %
Barium (Ba) .....	max. 0.00001 %	Piperidine (G.C) .....	max. 0.01 %
Boron (B) .....	max. 0.000002 %	Ammonium (NH <sub>3</sub> ) .....	max. 0.002 %
Cadmium (Cd) .....	max. 0.000005 %	Reducing Substances .....	passes test
Calcium (Ca) .....	max. 0.00005 %	Non-volatile matter .....	max. 0.001 %
Chromium (Cr) .....	max. 0.000002 %	Water .....	max. 0.1 %
Cobalt (Co) .....	max. 0.000002 %		

HS-No: 2837 20 00 00

Code	Capacity
P9005-1-2501	2.5 L

**P9005-4 Pyridine, HPLC grade**

See specification in Solvents Specification - 49

HS-No: 2837 20 00 00

Code	Capacity
P9005-4-1001	1.0 L
P9005-4-4001	4.0 L

**P9005-14 Pyridine, BIO grade**

See specification in Solvents Specification - 58

HS-No: 2837 20 00 00

Code	Capacity
P9005-14-1001	1.0 L
P9005-14-4001	4.0 L

**P9005-15 Pyridine, Ultra Dry grade**

See specification in Solvents Specification - 64

HS-No: 2837 20 00 00

Code	Capacity
P9005-15-1001	1.0 L
P9005-15-4001	4.0 L

**1-PROPANOL**Synonyms: *n*-propyl alcohol, Ethylcarbinol, 1-Hydroxypropane, *n*-propanal

- C<sub>3</sub>H<sub>8</sub>O
- M = 60.10 g/mol
- CAS [71-23-8]
- EC number: 237-323-

**Physical data:**

- Form: Liquid
- Density: 0.80 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -127 °C
- Boiling point: 96,5 - 98 °C
- Flash point: 15 °C
- Ignition temp.: 405 °C
- Vapour pressure: (20 °C) 19 hPa
- Viscosity: (20 °C) 0.95 mPas

- Dipolar moment: (20 °C) 1.7 Debye
- Dielectric const: (25 °C) 20.1
- Saturation conc.: (20 °C) 46 g/m<sup>3</sup>
- Expl. limit (upper): 13.5 Vol%
- Expl. limit (lower): 2.1 Vol%
- pH (200 g/l H<sub>2</sub>O, 20 °C) 7

- S: 7-16-24-39
- VbF class: B
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 3 F1 II UN 1274
- IMDG: 3 II UN 1274
- IATA/ICAO: 3 II UN 1274
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 5

**Toxicological data:**

- LD 50 (oral, rat): 1870 mg/kg
- WGk: 1

**Safety:**

- EC Index no.: 6.3-003-00-0
- R: 11-41-67

**PR101-1 1-Propanol, reagent grade**

HS-No: 2837 20 00 00

Assay (GC) .....	min. 99.5 %	Iron (Fe) .....	max. 0.00001 %
Identity (IR-spectrum) .....	passes test	Lead (Pb) .....	max. 0.00001 %
Density (20°/4°) .....	0.803 - 0.804	Magnesium (Mg) .....	max. 0.00001 %
Appearance .....	clear	Manganese (Mn) .....	max. 0.000002 %
Colour .....	max. 10 Hazen	Nickel (Ni) .....	max. 0.000002 %
Solubility in Water .....	Passes test	Tin (Sn) .....	max. 0.00001 %
Acidity .....	max. 0.0004 meq/g	Zinc (Zn) .....	max. 0.00001 %
Alkalinity .....	max. 0.002 meq/g	Acetone (G.C) .....	max. 0.01 %
Aluminium (Al) .....	max. 0.00005 %	Ethanol (G.C) .....	max. 0.01 %
Barium (Ba) .....	max. 0.00001 %	Methanol (G.C) .....	max. 0.01 %
Boron (B) .....	max. 0.000002 %	2-Propanol (G.C) .....	max. 0.05 %
Cadmium (Cd) .....	max. 0.000005 %	Aldehydes and Ketone (as C <sub>3</sub> H <sub>6</sub> O) .	max. 0.03 %
Calcium (Ca) .....	max. 0.00005 %	Substance darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Chromium (Cr) .....	max. 0.000002 %	Non-volatile matter .....	max. 0.0005 %
Cobalt (Co) .....	max. 0.000002 %	Water (K.F) .....	max 0.05 %
Copper (Cu) .....	max. 0.000002 %		

Code	Capacity
PR101-1-2500	2.5 L
PR101-1-4000	4.0 L

**PR101-3 1-Propanol, extra pure**

HS-No: 2837 20 00 00

Assay .....	min. 99 %	Iron (Fe) .....	max. 0.0005 %
Acidity .....	max. 0.001 meq/g	Lead (Pb) .....	max. 0.0002 %
Alkalinity .....	max. 0.001 meq/g	Nickel (Ni) .....	max. 0.0002 %
Ethanol (G.C) .....	max. 0.1 %	Substances Darkened by H <sub>2</sub> SO <sub>4</sub> .....	passes test
Methanol (G.C) .....	max. 0.1 %	Non-volatile matter .....	max. 0.001 %
2-Propanol (G.C) .....	max. 0.1 %	Water .....	max. 0.2 %
Copper (Cu) .....	max. 0.0002 %		

Code	Capacity
PR101-3-2500	2.5 L

**PR101-4 1-Propanol, HPLC grade**

See specification in Solvents Specification - 48

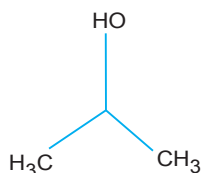
HS-No: 2837 20 00 00

Code	Capacity
PR101-4-1001	1.0 L
PR101-4-4001	4.0 L

## 2-PROPANOL



Synonyms; Isopropyl alcohol, Isopropanol, Dimethylcarbinol, 2-Hydroxypropane



- C<sub>3</sub>H<sub>8</sub>O
- M = 60.10 g/ml
- CAS [67-63-0]
- EC number: 200-661-7

### Physical data:

- Density: 0.78 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: ~-89.5 °C
- Boiling point: 82.4 °C
- Flash point: 12 °C
- Ignition temp.: 425 °C

- Vapour pressure: (20 °C) 43 hPa
- Viscosity: (20 °C) 2.27 mPas
- Dipolar moment: (20 °C) 1.66 Debye
- Dielectric const.: (25 °C) 18.3
- Saturation conc.: (20 °C) 105 g/m<sup>3</sup>
- Expl. limit (upper): 12.7 Vol%
- Expl. limit (lower): 2 Vol%
- pH (20 °C) ~ 7

### Toxicological data:

- LD 50 (oral, rat): 5045 mg/kg
- MAK: 200 ml/m<sup>3</sup>, 500 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- EC Index no.: 603-117-00-0
- R: 11-36-67
- S: 7-16-24/25-26
- VbF class: B
- Poison class CH (Swiss): F

### Transport/storage:

- ADR: 3 F1 II UN 1219
- IMDG: 3 II UN 1219
- IATA/ICAO: 3 II UN 1219
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

### PR141-1 2-Propanol, reagent grade

Assay .....	min. 99.7 %	Calcium (Ca) .....	max. 0.5 ppm
Colour .....	max. 10 Hazen	Cadmium (Cd) .....	max. 0.05 ppm
Acidity .....	max. 0.0001 meq/g	Cobalt (Co) .....	max. 0.02 ppm
Carbonyl compounds (as CO) .....	max. 0.002 ppm	Chromium (Cr) .....	max. 0.02 ppm
Matter discoloured (H <sub>2</sub> SO <sub>4</sub> ) .....	max. 10 ppm	Copper (Cu) .....	max. 0.02 ppm
Acetone (GC) .....	max. 0.01 ppm	Iron (Fe) .....	max. 0.1 ppm
Ethanol (GC) .....	max. 0.01 ppm	Magnesium (Mg) .....	max. 0.1 ppm
Methanol (GC) .....	max. 0.1 ppm	Manganese (Mn) .....	max. 0.02 ppm
Evaporation residue .....	max. 0.001 ppm	Nickel (Ni) .....	max. 0.02 ppm
Water .....	max. 0.1 %	Lead (Pb) .....	max. 0.1 ppm
Aluminium (Al) .....	max. 0.5 ppm	Tin (Sn) .....	max. 0.1 ppm
Boron (B) .....	max. 0.02 ppm	Zinc (Zn) .....	max. 0.1 ppm
Barium (Ba) .....	max. 0.1 ppm		

HS-No: 2905 12 00 00

Code	Capacity
PR141-1-1000	1.0 L
PR141-1-2500	2.5 L
PR141-1-4000	4.0 L
PR141-1-920E	200 L

### PR141-4 2-Propanol, HPLC grade

See specification in Solvents Specification - 48

HS-No: 2905 12 00 00

Code	Capacity
PR141-4-1001	1.0 L
PR141-4-2501	2.5 L
PR141-4-4001	4.0 L

### PR141-6 2-Propanol, EC-100

Purity (GC) .....	min. 99.8 %	Indium (In) .....	max. 10 ppb
Color .....	max. 10 Hazen	Potassium (K) .....	max. 10 ppb
Free Acid (as C <sub>2</sub> H <sub>5</sub> COOH) .....	max. 10 ppm	Lithium (Li) .....	max. 5 ppb
Spec. resistance .....	max. 10 MΩ cm	Magnesium (Mg) .....	max. 5 ppb
Chloride (Cl) .....	max. 0.02 ppm	Manganese (Mn) .....	max. 5 ppb
Phosphate (PO <sub>4</sub> ) .....	max. 0.005 ppm	Molybdenum (Mo) .....	max. 10 ppb
Sulphate (SO <sub>4</sub> ) .....	max. 0.1 ppm	Sodium (Na) .....	max. 100 ppb
Heavy metals (as Pb) .....	max. 20 ppm	Nickel (Ni) .....	max. 5 ppb
Alkalinity (as NH <sub>3</sub> ) .....	max. 10 ppm	Lead (Pb) .....	max. 10 ppb
Silver (Ag) .....	max. 5 ppb	Platinum (Pt) .....	max. 20 ppb
Aluminium (Al) .....	max. 50 ppb	Antimony (Sb) .....	max. 10 ppb
Arsenic (As) .....	max. 10 ppb	Tin (Sn) .....	max. 20 ppb
Gold (Au) .....	max. 20 ppb	Strontium (Sr) .....	max. 5 ppb
Boron (B) .....	max. 10 ppb	Titanium (Ti) .....	max. 20 ppb
Barium (Ba) .....	max. 20 ppb	Thallium (Tl) .....	max. 10 ppb
Beryllium (Be) .....	max. 10 ppb	Vanadium (V) .....	max. 10 ppb
Bismuth (Bi) .....	max. 20 ppb	Zinc (Zn) .....	max. 5 ppb
Calcium (Ca) .....	max. 10 ppb	Zirconium (Zr) .....	max. 10 ppb
Cadmium (Cd) .....	max. 5 ppb	Aldehydes and ketones (as C <sub>3</sub> H <sub>6</sub> O) .....	max. 50 ppm
Cobalt (Co) .....	max. 5 ppb	Evaporation Residue .....	max. 3 ppm
Chromium (Cr) .....	max. 5 ppb	Substances Reducing Potassium	
Copper (Cu) .....	max. 5 ppb	Permanganate (as O) .....	max. 2.5 ppm
Iron (Fe) .....	max. 5 ppb	Water .....	max. 0.05 %
Gallium (Ga) .....	max. 10 ppb		

HS-No: 2905 12 00 00

Code	Capacity
PR141-6-2500	2.5 L
PR141-6-4000	4.0 L

**PR142-6 I.P.A., EC-100**

HS-No: 2905 12 00 00

Purity (GC) .....	min. 99.9 %	Indium (In) .....	max. 10 ppb
Color .....	max. 10 Hazen	Potassium (K) .....	max. 10 ppb
Free Acid (as C <sub>2</sub> H <sub>5</sub> COOH) .....	max. 10 ppm	Lithium (Li) .....	max. 5 ppb
Spec. resistance .....	max. 10 MΩ cm	Magnesium (Mg) .....	max. 5 ppb
Chloride (Cl) .....	max. 0.02 ppm	Manganese (Mn) .....	max. 5 ppb
Phosphate (PO <sub>4</sub> ) .....	max. 0.005 ppm	Molybdenum (Mo) .....	max. 10 ppb
Sulphate (SO <sub>4</sub> ) .....	max. 0.1 ppm	Sodium (Na) .....	max. 100 ppb
Heavy metals (as Pb) .....	max. 20 ppm	Nickel (Ni) .....	max. 5 ppb
Alkalinity (as NH <sub>3</sub> ) .....	max. 10 ppm	Lead (Pb) .....	max. 10 ppb
Silver (Ag) .....	max. 5 ppb	Platinum (Pt) .....	max. 20 ppb
Aluminium (Al) .....	max. 50 ppb	Antimony (Sb) .....	max. 10 ppb
Arsenic (As) .....	max. 10 ppb	Tin (Sn) .....	max. 20 ppb
Gold (Au) .....	max. 20 ppb	Strontium (Sr) .....	max. 5 ppb
Boron (B) .....	max. 10 ppb	Titanium (Ti) .....	max. 20 ppb
Barium (Ba) .....	max. 20 ppb	Thallium (Tl) .....	max. 10 ppb
Beryllium (Be) .....	max. 10 ppb	Vanadium (V) .....	max. 10 ppb
Bismuth (Bi) .....	max. 20 ppb	Zinc (Zn) .....	max. 5 ppb
Calcium (Ca) .....	max. 10 ppb	Zirconium (Zr) .....	max. 10 ppb
Cadmium (Cd) .....	max. 5 ppb	Aldehydes and ketones (as C <sub>3</sub> H <sub>6</sub> O) .....	max. 50 ppm
Cobalt (Co) .....	max. 5 ppb	Evaporation Residue .....	max. 3 ppm
Chromium (Cr) .....	max. 5 ppb	Substances Reducing Potassium .....	
Copper (Cu) .....	max. 5 ppb	Permanganate (as O) .....	max. 2.5 ppm
Iron (Fe) .....	max. 5 ppb	Water .....	max. 0.05 %
Gallium (Ga) .....	max. 10 ppb		

Code	Capacity
PR142-6-9025	25 L

**PR141-11 2-Propanol, HPLC grade**

HS-No: 2905 12 00 00

See specification in Solvents Specification - 25

Code	Capacity
PR141-11-2501	2.5 L
PR141-11-4001	4.0 L

**PR141-12 2-Propanol, HPLC grade**

HS-No: 2905 12 00 00

See specification in Solvents Specification - 18

Code	Capacity
PR141-12-2501	2.5 L
PR141-12-4001	4.0 L

P



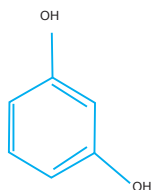


# Chemical list : R

## RESORCINOL



Synonyms: 1,3-Dihydroxybenzene



- C<sub>6</sub>H<sub>6</sub>O<sub>2</sub>  
 - M = 110.11 g/mol  
 - CAS [108-46-3]  
 - EC number: 203-585-2

**Physical data:**

- Spec. density: ~ 1.28 g/cm<sup>3</sup>  
 - Bulk density: ~ 600 - 700 kg/m<sup>3</sup>  
 - Solub. in water (20 °C): soluble

- Melting point: 109 - 111 °C  
 - Boiling point: (20 hPa) 177 °C  
 - Flash point: 127 °C  
 - Ignition temp.: 605 °C  
 - Vapour pressure: (20 °C) 0.1 hPa  
 - pH (100 g/l H<sub>2</sub>O, 20 °C) ~ 4.6

**Toxicological data:**

- LD 50 (oral, rat): 301 mg/kg  
 - WGK: 1

**Safety:**

- EC Index no.: 604-010-00-1  
 - R: 22-36/38-50  
 - S: 26-46-61  
 - Poison class CH (Swiss): 3

### R2003-3 Resorcinol, extra pure

HS-No: 2907 21 00 00

Assay (G.C) ..... min. 98.5 %  
 Appearance of solution ..... passes test  
 Free acid (as H<sub>2</sub>SO<sub>4</sub>) ..... max. 0.01 %  
 Free alkali (as NH<sub>3</sub>) ..... max. 0.01 %  
 Chlorides (Cl) ..... max. 0.01 %  
 Sulfates (SO<sub>4</sub>) ..... max. 0.05 %  
 Heavy metals (as Pb) ..... max. 0.001 %  
 Pyrocatechol ..... max. 0.01 %

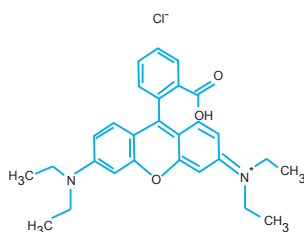
Organic volatile impurities ..... passes test  
 Sulfated ash ..... max. 0.05 %  
 Loss on drying (on silica gel) ..... max. 1 %  
 Dichloromethane (HS-GC) ..... max. 0.06 %  
 Phenol ..... passes test  
 Other residual solvents (Ph Eur/ICH) excluded by production process

Code	Capacity
S2003-3-0250	250 g

## RHODAMINE B



Synonyms: Tetraethylrhodamine, Brilliant pink B



- C<sub>28</sub>H<sub>31</sub>ClN<sub>2</sub>O<sub>3</sub>  
 - M = 479.02 g/mol  
 - CAS [81-88-9]  
 - EC number: 201-383-9

**Physical data:**

- Spec. density: 1.31 g/cm<sup>3</sup> (20 °C)  
 - Solub. in water 34 g/l (20 °C)

- pH Value 2.0 (50 g/l, H<sub>2</sub>O, 20 °C)  
 - Melting point: 199 - 201 °C  
 - Bulk density: ~ 240 kg/m<sup>3</sup>

**Toxicological data:**

- LD 50 (oral, rat): > 2000 mg/kg

**safety:**

- Irritant dangerous for the environment  
 - R: 41-52/53  
 - S: 22-26-39-61  
 - Poison class CH (CH) 3  
 - WGK: 3\*

**Transport/storage:**

- LGK: 10-13

### R2050-1 Rhodamine B, extra pure

HS-No: 3204 13 00 00

Dye content (spectrophotometrically) min. 90 %  
 Identity (UV/VIS-Spectrum) ..... passes test  
 Absorption maximum λ  
 max (ethanol 50%) ..... 550 - 552 nm  
 Spec. Absorptivity A1%/1cm  
 (λ max; 0.0003%, ethanol 50%) ..... 2115 - 2350

TLC-Test ..... passes test  
 Loss on drying (110 °C) ..... max. 5.0 %  
 Suitability for microscopy ..... passes test

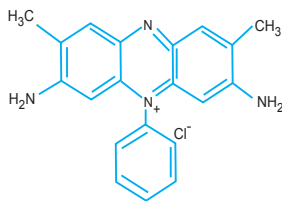
Code	Capacity
R2050-1-0100	100 g

R

# Chemical list : S

## SAFRANINE O, C.I. 50240

Synonyms:



- C<sub>20</sub>H<sub>19</sub>ClN<sub>4</sub>  
- M = 350.88 g/mol  
- CAS [477-73-6]  
- EC number: 207-518-8

**Physical data:**

- Form: Solid  
- Bulk density: ~ 400 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 50 g/l  
- pH (10 g/l, 20 °C) ~ 10

**Toxicological data:**

- WGK: 2

**Transport/storage:**

- LGK: 10-13

### S1001-1 Safranin O, C.I. 50240, for microscopy

HS-No: 3204 13 00 00

Absorption maximum  $\lambda$   
in ethanol 50% ..... 530 - 534 nm  
Absorptivity (A1%/1 cm;  $\lambda$  max) ..... 875 - 1450  
Loss on drying (110 °C) ..... max. 15 %

Code	Capacity
S1001-1-0010	10 g
S1001-1-0025	25 g

## SELENIUM STANDARD SOLUTION 1000MG/L FOR AA



Synonyms:

**Physical data:**

- Density: 1.01 g/cm<sup>3</sup>  
- Solub. in water (20 °C): miscible  
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 3

**Safety:**

- R: 36/38  
- S: 26-37  
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 8 C1 III UN 3264  
- IDMG: 8 III UN 3264  
- IATA/ICAO: 8 III UN 3264  
- PAX: 818  
- CAO: 820  
- LGK: 8

### S1003-0 Selenium standard solution 1000ng/l for AA (selenium dioxide in nitric acid 0.5 mol/l)

HS-No: 3822 00 00 00

Composition ..... 1000±5 mg/l

Code	Capacity
S1003-0-0500	500 ml

## SILVER STANDARD SOLUTION 1000MG/L FOR AA



Synonyms:

**Physical data:**

- Density: 1.02 g/mol  
- Solub. in water (20 °C): miscible  
- pH (20 °C) < 1

**Toxicological data:**

- WGK: 3

**Safety:**

- R: 36/38  
- S: 26-37  
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 8 C1 III UN 3264  
- IDMG: 8 III UN 3264  
- IATA/ICAO: 8 III UN 3264  
- PAX: 818  
- CAO: 820  
- LGK: 8

### S1005-0 Silver standard solution 1000 mg/l for AA (silver nitrate in nitric acid 0.5 mol/l)

HS-No: 3822 00 00 00

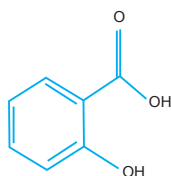
Composition ..... 1000 ± 5 mg/l

Code	Capacity
S1005-0-0500	500 ml

## SALICYLIC ACID



Synonyms: 2-Hydroxybenzoic acid



- C<sub>7</sub>H<sub>6</sub>O<sub>3</sub>  
- M = 138.12 g/mol  
- CAS [69-72-7]  
- EC number: 200-712-3

**Physical data:**

- Spec. density: 1.443 g/cm<sup>3</sup>  
- Bulk density: ~ 400 - 500 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 2 g/l  
- Melting point: 158 - 161 °C

- Boiling point: 211 °C

- Flash point: 157 °C

- Ignition temp.: 500 °C

- Vapour pressure: (100 °C) < 1 hPa

- pH (saturated solution H<sub>2</sub>O, 20 °C) ~3

**Safety:**

- R: 22-37/38-41  
- S: 26-39-46  
- Poison class CH (Swiss): 3

**Transport/storage:**

- LGK: 10-13  
- Disposal: 4

### S1009-3 Salicylic acid, extra pure

HS-No: 2918 21 00 00

Assay (acidimetric) ..... min. 99.5 %  
Appearance of solution 10%  
ethanol 96% ..... passes test  
Chlorides (Cl) ..... max. 0.001 %  
Sulfates (SO<sub>4</sub>) ..... max. 0.005 %  
Heavy metals (as Pb) ..... max. 0.0001 %

Iron (Fe) ..... max. 0.0001 %  
Reaction to H<sub>2</sub>SO<sub>4</sub> ..... passes test  
Sulfated ash ..... max. 0.05 %  
Loss on drying ..... max. 0.3 %  
Residual solvents (Ph Eur/ICH) ..... excluded by production process

Code	Capacity
S1009-3-0250	250 g
S1009-3-0500	500 g

## SILICON DIOXIDE

### Synonyms:



- O<sub>2</sub>Si
- M = 60.08 g/mol
- CAS [763-86-9]
- EC number: 231-545-4

### Physical data:

- Form: Solid
- Spec. density: ~ 2.2 g/m<sup>3</sup>

**Applications:** Painting, in the coating industry, in the rubber industry, manufacture of adhesives, manufacturing of inks, cosmetics, in food industry.

- Solub. in water (20 °C): Insoluble
- Melting point: 1726 °C
- pH (40 g/l H<sub>2</sub>O suspension, 20 °C) ~ 3.7 - 4.7

### Toxicological data:

- LD 50 (oral, rat): > 10000 mg/kg
- MAK: 4 mg/m<sup>3</sup>
- WGK: 0

### Safety:

- S: 22
- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13

### S2040-1 Silicon dioxide

Assay (on dried sample) .....	min. 99.8 %	Aluminium (as Al <sub>2</sub> O <sub>3</sub> ) .....	max. 0.05 %
Specific surface area (BET) .....	200 ± 25 m <sup>2</sup> /g	Iron (as Fe <sub>2</sub> O <sub>3</sub> ) .....	max. 0.003 %
HCl content .....	max. 0.025 %	Titanium (as TiO <sub>2</sub> ) .....	max. 0.03 %
pH (4%, H <sub>2</sub> O) .....	3.7 - 4.7	Loss on drying (195 °C) .....	max. 1.5 %

HS-No: 2834 29 80 00

Code	Capacity
S2040-1-0500	500 g

## SILVER NITRATE

### Synonyms:

- AgNO<sub>3</sub>
- M = 169.87 g/mol
- CAS [7761-88-8]
- EC number: 231-853-9

### Physical data:

- Spec. density: 4.35 g/cm<sup>3</sup>
- Bulk density: ~ 2350 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: 212 °C

- Boiling point: 444 °C (decomposes)
- pH (100 g/l H<sub>2</sub>O, 20 °C) 5.4 - 6.4

### Toxicological data:

- LD 50 (oral, rat): 1173 mg/kg
- MAK: 0.01 mg/m<sup>3</sup>
- WGK: 3

### Safety:

- EC Index no.: 047-001-00-2
- R: 34-50/53

- S: 26-36/37/39-45-60-61
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 5.1 O2 II UN 1493
- IMDG: 5.1 II UN 1493
- IATA/ICAO: 5.1 II UN 1493
- PAX: 508
- CAO: 511
- LGK: 5.1 B
- Disposal: 27

### S3052-1 Silver nitrate, reagent grade

Assay (argentometric) .....	min. 99.98%	Chloride (Cl) .....	max. 0.0002%
Clarity of solution .....	passes test	Copper (Cu) .....	max. 0.0002%
Free acid .....	passes test	Iron (Fe) .....	max. 0.0002%
Substances not precipitated by HCl	max. 0.009%	Nickel (Ni) .....	max. 0.0005%
Cadmium (Cd) .....	max. 0.0001%	Zinc (Zn) .....	max. 0.0002%
Sulfate (SO <sub>4</sub> ) .....	max. 0.002%	Substances insoluble in water .....	max. 0.01%
Lead (Pb) .....	max. 0.001%		

HS-No: 2843 21 00 00

Code	Capacity
S3052-1-0100	100 g
S3052-1-0250	250 g

### S3052-3 Silver nitrate, extra pure

Assay .....	min. 99.0%	Copper (Cu) .....	max. 0.002%
Solubility in water .....	passes test	Iron (Fe) .....	max. 0.001%
Acidity .....	passes test	Appearance .....	glossy crystal or white crystalline powder
Chloride (Cl) .....	max. 0.001%	Identification A .....	passes test
Sulfate (SO <sub>4</sub> ) .....	max. 0.005%	Identification B .....	passes test
Substances not precipitated by HCl	max. 0.02%		

HS-No: 2843 21 00 00

Code	Capacity
S3052-3-0100	100 g
S3052-3-0250	250 g

## SILVER NITRATE, VOLUMETRIC SOLUTIONS

### S3055-0 Silver nitrate, solution 0.01 mol/l (0.01 N)

#### Synonyms:

- AgNO<sub>3</sub>
- M = 169.87 g/mol
- CAS [7761-88-8]
- EC number: 231-853-9

- Physical data:**
- Density: 1.00 g/cm<sup>3</sup>

### Toxicological data:

- WGK: 2

### Safety:

- EC Index no.: 047-001-00-2
- Poison class CH (Swiss): 4

### Transport/storage:

- LGK: 10-13

1ml = 0.001699 g AgNO<sub>3</sub>

HS-No: 2843 21 00 00

Code	Capacity
S3055-0-1001	1.0 L

### S3056-0 Silver nitrate, solution 0.02 mol/l (0.02 N)

#### Synonyms:

- AgNO<sub>3</sub>
- M = 169.87 g/mol
- CAS [7761-88-8]
- EC number: 231-853-9

- Physical data:**
- Density: 1.00 g/cm<sup>3</sup>

### Toxicological data:

- LD 50 (oral, rat): 1173 mg/kg (pure substance)
- WGK: 2

### Safety:

- EC Index no.: 047-001-00-2

- R: 52/53

- S: 61
- Poison class CH (Swiss): 4

- Transport/storage:
- LGK: 10-13

1ml = 0.003398 g AgNO<sub>3</sub>

HS-No: 2843 21 00 00

Code	Capacity
S3056-0-1001	1.0 L



### S3057-0 Silver nitrate, solution 0.05 mol/l (0.05 N)

Synonyms:

- AgNO<sub>3</sub>
- M = 169.87 g/mol
- CAS [7761-88-8]
- EC number: 231-853-9

**Physical data:**  
- Density: 1.00 g/cm<sup>3</sup>  
- pH (20 °C) ~ 6

**Toxicological data:**  
- LD 50 (oral, rat): 1173 mg/kg  
(pure substance)  
- WGK: 2

**Safety:**  
- EC Index no.: 047-001-00-2

- R: 52/53
- S: 61
- Poison class CH (Swiss): 4

**Transport/storage:**  
- LGK: 10-13

HS-No: 2843 21 00 00

Code	Capacity
S3057-0-1001	1.0 L

1ml = 0.008495 g AgNO<sub>3</sub>

### S3059-0 Silver nitrate, solution 0.1 mol/l (0.1N)

Synonyms:

- AgNO<sub>3</sub>
- M = 169.87 g/mol
- CAS [7761-88-8]
- EC number: 231-853-9

**Physical data:**  
- Density: 1.01 g/cm<sup>3</sup>  
- pH (20 °C) ~ 4 - 5

**Toxicological data:**  
- LD 50 (oral, rat): 1173 mg/kg  
(pure substance)  
- MAK: 0.01 mg/m<sup>3</sup>  
- WGK: 2

**Safety:**  
- EC Index no.: 047-001-00-2

- R: 52/53
- S: 61
- Poison class CH (Swiss): 4

**Transport/storage:**  
- LGK: 10-13

HS-No: 2843 21 00 00

Code	Capacity
S3059-0-1001	1.0 L
S3059-0-2501	2.5 L

1ml = 0.01699 g AgNO<sub>3</sub>

### S3062-0 Silver nitrate, solution 1 mol/l (1N)

Synonyms:

- AgNO<sub>3</sub>
- M = 169.87 g/mol
- CAS [7761-88-8]
- EC number: 231-853-9

**Physical data:**  
- Density: 1.14 g/cm<sup>3</sup>  
- pH (20 °C) ~ 7 - 9

**Toxicological data:**  
- LD 50 (oral, rat): 1173 mg/kg  
(pure substance)  
- MAK: 0.01 mg/m<sup>3</sup>  
- WGK: 3

**Safety:**  
- EC Index no.: 047-001-00-2  
- R: 34-51/53  
- S: 26-36/37/39-45-61  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- ADR: 8 C9 II UN 1760  
- IMDG: 8 II UN 1760  
- IATA/ICAO: 8 II UN 1760  
- PAX: 808  
- CAO: 812  
- LGK: 8 B

HS-No: 2843 21 00 00

Code	Capacity
S3062-0-1001	1.0 L

1ml = 0.1699 g AgNO<sub>3</sub>

## SILVER SULFATE



Synonyms: Sulfuric acid silver salt

- Ag<sub>2</sub>SO<sub>4</sub>
- M = 311.79 g/mol
- CAS [10294-26-5]
- EC number: 233-653-7

**Physical data:**  
- Spec. density: 5.45 g/mol  
- Bulk density: ~ 1200 kg/m<sup>3</sup>

- Solub. in water (25 °C): 8 g/l
- Melting point: 655 °C
- pH (5 g/l H<sub>2</sub>O, 25 °C) ~ 5 - 6

**Toxicological data:**  
- LD 50 (oral, rat): ~ 5000 mg/kg  
- MAK: 0.01 mg/m<sup>3</sup>  
- WGK: 3

**Safety:**  
- R: 41  
- S: 22-26-39  
- Poison class CH (Swiss): 5

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 27

### S3068-1 Silver fulfate, reagent grade

HS-No: 2843 29 00 00

Assay (argentometric) .....	min. 99.5%	Lead (Pb) .....	max. 0.001%
Nitrates (NO <sub>3</sub> ) .....	max. 0.001%	Nickel (Ni) .....	max. 0.001%
Chloride (Cl) .....	max. 0.001%	Zinc (Zn) .....	max. 0.0001%
Copper (Cu) .....	max. 0.0001%	Insoluble in water and silver chloride	max. 0.02%
Iron (Fe) .....	max. 0.0001%	Non precipitable in HCL .....	max. 0.01%

Code	Capacity
S3068-1-0100	100 g
S3068-1-0250	250 g

### S3068-3 Silver fulfate, extra pure

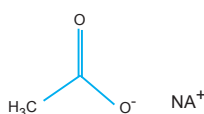
HS-No: 2843 29 00 00

Assay .....	min 99.0%	Identification B .....	passes test
Solubility in water .....	passes test	Nitrate (NO <sub>3</sub> ) .....	max. 0.01 %
Substances not precipitated by HCL	max. 0.1%	Chloride (Cl) .....	max. 0.01 %
Total Nitrogen (as N) .....	max. 0.01%	Copper (Cu) .....	max. 0.001 %
Appearance .....	white crystal or	Iron (Fe) .....	max. 0.003 %
ntification A .....	crystalline powder	Lead (Pb) .....	max. 0.005 %
	passes test	Nickel (Ni) .....	max. 0.002 %

Code	Capacity
S3068-3-0100	100 g
S3068-3-0250	250 g

## SODIUM ACETATE ANHYDROUS

Synonyms: Acetic acid sodium salt



- CH<sub>3</sub>COONa
- M = 82.03 g/mol
- CAS [127-09-3]
- EC number: 204-823-8

**Physical data:**  
- Spec. density: 1.52 g/cm<sup>3</sup>  
- Bulk density: ~ 320 - 470 kg/m<sup>3</sup>

- Solub. in water (20 °C): 365 g/l
- Melting point: 324 °C (decomposes)
- Boiling point: > 400 °C (decomposes)
- Flash point: > 250 °C
- Ignition temp.: 607 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 7.5 - 9.0

**Toxicological data:**  
- LD 50 (oral, rat): 3530 mg/kg  
- WGK: 1

**Safety:**  
- Poison class CH (Swiss): 5

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 14

**S5013-1 Sodium acetate anhydrous, reagent grade**

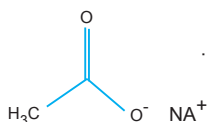
HS-No: 2915 22 00 00

Assay (titr. With HClO <sub>4</sub> )	min. 99%	Aluminium (Al)	max. 0.001%
Appearance of solution (10% in water)	passes test	Calcium (Ca)	max. 0.001%
Insoluble in water	max. 0.01%	Copper (Cu)	max. 0.0003%
pH (5%, H <sub>2</sub> O)	7.5 - 9.2	Heavy metals (as Pb)	max. 0.001%
Chloride (Cl)	max. 0.001%	Iron (Fe)	max. 0.0005%
Phosphates (PO <sub>4</sub> )	max. 0.0005%	Magnesium (Mg)	max. 0.0005%
Sulfates (SO <sub>4</sub> )	max. 0.003%	Potassium (K)	max. 0.02%

Code	Capacity
S5013-1-0500	500 g
S5013-1-1000	1 kg

**SODIUM ACETATE TRIHYDRATE**

Synonyms:



- CH<sub>3</sub>COONa·3H<sub>2</sub>O
- M = 136.08 g/mol
- CAS [6131-90-4]
- EC number: 204-823-8

**Physical data:**

- Spec. density: 1.42 g/cm<sup>3</sup>
- Bulk density: ~ 900 kg/m<sup>3</sup>
- Solub. in water (20 °C): 613 g/l
- Melting point: 58 °C

- Boiling point: > 400 °C (anhydrous substance) (decomposes)
- Flash point: > 250 °C (anhydrous substance)
- Ignition temp.: 607 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 7.5 - 9.2

**Toxicological data:**

- LD 50 (oral, rat): 3530 mg/kg (anhydrous substance)

- WGK: 1

**Safety:**

- Poison class CH (Swiss): 5

**Transport/storage:**

- LGK: 10-13  
- Disposal: 14

**S5022-1 Sodium acetate trihydrate, reagent grade**

HS-No: 2915 22 00 00

Assay (titr. With HClO <sub>4</sub> )	min. 99.5%	Cadmium (Cd)	max. 0.0005%
Appearance of solution (10% in water)	passes test	Calcium (Ca)	max. 0.001%
Insoluble in water	max. 0.005%	Copper (Cu)	max. 0.0003%
pH (5%, H <sub>2</sub> O)	7.5 - 9.0	Iron (Fe)	max. 0.0005%
Chloride (Cl)	max. 0.0005%	Heavy metals (as Pb)	max. 0.0005%
Phosphates (PO <sub>4</sub> )	max. 0.0002%	Lead (Pb)	max. 0.0005%
Sulfates (SO <sub>4</sub> )	max. 0.002%	Magnesium (Mg)	max. 0.0005%
Total N	max. 0.001%	Potassium (K)	max. 0.005%
Aluminium (Al)	max. 0.00002%	Zinc (Zn)	max. 0.0005%
Arsenic (As)	max. 0.0001%	KMnO <sub>4</sub> red. matter (as HCOOH)	max. 0.005%

Code	Capacity
S5022-1-0500	500 g
S5022-1-1000	1 kg

**S5022-4 Sodium acetate trihydrate, HPLC grade**

HS-No: 2915 22 00 00

See specification in Solvents Specification - 50

Code	Capacity
S5022-4-0500	500 g
S5022-4-1000	1 kg

S

**SODIUM BROMIDE**

Synonyms: Bromo sodium

- NaBr
- M = 102.90 g/mol
- CAS [7647-15-6]
- EC number: 231-599-9

**Physical data:**

- Spec. density: 3.20 g/cm<sup>3</sup>
- Bulk density: ~ 1400 kg/m<sup>3</sup>

- Solub. in water (20 °C): soluble
- Melting point: 755 °C
- Boiling point: 1393 °C
- Vapour pressure: (806 °C) 1.3 hPa
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 5.4

**Toxicological data:**

- LD 50 (oral, rat): 3500 mg/kg
- WGK: 1

**Safety:**

- Poison class CH (Swiss): 3

**Transport/storage:**

- LGK: 10-13  
- Disposal: 14

**S5029-1 Sodium bromide, reagent grade**

HS-No: 2827 51 00 00

Assay (argentometric)	min. 99.5 %	Lithium (Li)	max. 0.00001 %
Aluminium (Al)	max. 0.000005 %	Magnesium (Mg)	max. 0.000005 %
Barium (Ba)	max. 0.0005 %	Manganese (Mn)	max. 0.000005 %
Calcium (Ca)	max. 0.000005 %	Nickel (Ni)	max. 0.000001 %
Copper (Cu)	max. 0.000005 %	Potassium (K)	max. 0.0005 %
Iron (Fe)	max. 0.000005 %	Thallium (Tl)	max. 0.000005 %
Lead (Pb)	max. 0.000005 %	Zinc (Zn)	max. 0.000005 %

Code	Capacity
S5029-1-0500	500 g

**S5029-3 Sodium bromide, extra pure**

HS-No: 2827 51 00 00

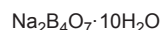
Assay (argentometric)	min. 99.5 %	Barium (Ba)	max. 0.001 %
Appearance of solution	passes test	Calcium (Ca)	max. 0.005 %
Acidly or alkalinely reacting or alkalinely reacting impurities	passes test	Heavy metals (as Pb)	max. 0.001 %
Bromates (BrO <sub>3</sub> )	max. 0.001 %	Iron (Fe)	max. 0.001 %
Chloride (Cl)	max. 0.2 %	Magnesium (Mg)	max. 0.001 %
Iodides (I)	max. 0.02 %	Magnesium and earth alkali metals (as Ca)	max. 0.02 %
Sulfates (SO <sub>4</sub> )	max. 0.005 %	Loss on drying (105 °C)	max. 3 %
Arsenic (As)	max. 0.0002 %	Residual solvents (Ph Eur/ICH)	excluded by production process

Code	Capacity
S5029-3-0500	500 g

## SODIUM BORATE DECAHYDRATE



Synonyms:



- $\text{B}_4\text{Na}_2\text{O}_7 \cdot 10\text{H}_2\text{O}$
- M = 381.37 g/mol
- CAS [1303-96-4]
- EC number: 215-540-4

**Physical data:**

- Form: Crystals
- Spec. density: 1.72 g/cm<sup>3</sup>

- Bulk density: ~ 750 kg/m<sup>3</sup>
- Solub. in water (20 °C): 51.4 g/l
- Melting point: 75 °C
- Boiling point: 1575 °C (anhydrous)
- Vapour pressure: (20 °C) 0.213 hPa
- pH (47 g/l H<sub>2</sub>O, 20 °C) 9.2

**Safety:**

- S: 24/25
- Poison class CH (Swiss): 5

**Transport/storage:**

- LGK: 10-13
- Disposal: 28

**Toxicological data:**

- LD 50 (oral, rat): 2660 mg/kg
- WGK: 1

### S5030-1 Sodium borate decahydrate, reagent grade

HS-No: 2840 19 90 00

Assay (acidimetric) .....	99.5 - 103.0 %	Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %
Identity .....	passes test	Manganese (Mn) .....	max. 0.0005 %
Appearance of solution .....	clear	Calcium (Ca) .....	max. 0.005 %
Insoluble in water .....	max. 0.005 %	Copper (Cu) .....	max. 0.0005 %
pH (0.01 M, H <sub>2</sub> O) .....	9.15 - 9.20	Heavy metals (as Pb) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.001 %	Iron (Fe) .....	max. 0.0005 %
Phosphate (PO <sub>4</sub> ) .....	max. 0.001 %	Lead (Pb) .....	max. 0.0005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %		

Code	Capacity
S5030-1-1000	1 kg

## SODIUM BOROHYDRIDE



Synonyms: Sodium tetrahydroborate

- NaBH<sub>4</sub>
- M = 37.83 g/mol
- CAS [16940-66-2]
- EC number: 241-004-4

**Physical data:**

- Form: Solid
- Spec. density: 1.07 g/cm<sup>3</sup>
- Bulk density: 350 - 500 kg/m<sup>3</sup>
- Solub. in water (25 °C): 550 g/l (decomposes slowly)
- Melting point: 400 °C (decomposes slowly)

- Flash point: 69 °C
- Ignition temp. ~ 220 °C
- Expl. limit (upper): 3.02 Vol%
- pH (10 g/l H<sub>2</sub>O, 20 °C) ~ 11

**Toxicological data:**

- LD 50 (oral, rat): 891 mg/kg
- WGK: 2

**Safety:**

- R: 15-25-34

- S: 14.2-26-36/37/39-43.6-45
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 4.3 W2 | UN 1426
- IMDG: 4.3 | UN 1426
- IATA/ICAO: 4.3 | UN 1426
- PAX: F
- CAO: 412
- LGK: 4.3
- Disposal: 26

**Applications:** Reducing agent, synthesis of organic product.

### S5032-1 Sodium borohydride, reagent grade

HS-No: 2850 00 20 90

Assay (Oxidimetric) .....	min. 96.0 %	Arsenic (As) .....	max. 0.001 %
Identity .....	passes test	Bismuth (Bi) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.5 %	Iron (Fe) .....	max. 0.005 %
Sulphate (SO <sub>4</sub> ) .....	max. 0.005 %	Mercury (Hg) .....	max. 0.001 %
Heavy metals (as Pb) .....	max. 0.005 %		

Code	Capacity
S5032-1-0101	100 g

## SODIUM CARBONATE ANHYDROUS



Synonyms: Anhydrous Soda

- Na<sub>2</sub>CO<sub>3</sub>
- M = 105.99 g/mol
- CAS [497-19-8]
- EC number: 207-838-8

**Physical data:**

- > Spec. density: 2.53 g/cm<sup>3</sup>
- > Bulk density: ~ 1100 kg/m<sup>3</sup>
- > Solub. in water (20 °C): 220 g/l

- Melting point: 854 °C
- Boiling point: 1600 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 25 °C) 11.5

**Toxicological data:**

- LD 50 (oral, rat): 4090 mg/kg
- MAK: 1.5 mg/m<sup>3</sup>
- WGK: 1

**Safety:**

- EC Index no.: 011-005-00-2
- R: 36
- S: 22-26
- Poison class CH (Swiss): 5

**Transport/storage:**

- LGK: 10-13
- Disposal: 14

### S5039-1 Sodium carbonate anhydrous, reagent grade

HS-No: 2836 20 00 00

Assay .....	min. 99.9 %	Calcium (Ca) .....	max. 0.005 %
Chlorides (Cl) .....	max. 0.001 %	Iron (Fe) .....	max. 0.0005 %
Silicate (SiO <sub>2</sub> ) .....	max. 0.002 %	Lead (Pb) .....	max. 0.0005 %
Phosphate (PO <sub>4</sub> ) .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.0005 %
Total S (as SO <sub>4</sub> ) .....	max. 0.003 %	Potassium (K) .....	max. 0.005 %
Total N .....	max. 0.001 %	Zinc (Zn) .....	max. 0.0005 %
Heavy metals (as Pb) .....	max. 0.0005 %	Loss on drying (300 °C) .....	max. 0.5 %
Aluminium (Al) .....	max. 0.001 %		

Code	Capacity
S5039-1-0500	500 g

## SODIUM CARBONATE DECAHYDRATE



Synonyms: Soda decahydrate

- Na<sub>2</sub>CO<sub>3</sub>·10H<sub>2</sub>O  
- M = 286.14 g/mol  
- CAS [6132-02-1]  
- EC number: 207-838-8

**Physical data:**  
- Spec. density: 1.44 g/cm<sup>3</sup>  
- Bulk density: ~ 700 - 900 kg/m<sup>3</sup>

- Solub. in water (20 °C): ~ 210 g/l  
- Melting point: 33 °C  
- pH (50 g/l H<sub>2</sub>O, 25 °C) 11 - 12

**Toxicological data:**  
- LD 50 (oral, rat): 4090 mg/kg  
(anhydrous substance)  
- WGK: 1

**Safety:**  
- EC Index no.: 011-005-00-2  
- R: 36  
- S: 22-26  
- Poison class CH (Swiss): 5

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 14

### S5046-1 Sodium carbonate decahydrate, reagent grade

HS-No: 2836 20 00 00

Assay (acidimetric) .....	min. 99.5 %	Copper (Cu) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.0005 %	Heavy metals (as Pb) .....	max. 0.0005 %
Phosphates, Silicate (as SiO <sub>2</sub> ) .....	max. 0.001 %	Iron (Fe) .....	max. 0.0002 %
Total N .....	max. 0.0005 %	Lead (Pb) .....	max. 0.0002 %
Total S (as SO <sub>4</sub> ) .....	max. 0.002 %	Magnesium (Mg) .....	max. 0.0002 %
Aluminium (Al) .....	max. 0.0005 %	Potassium (K) .....	max. 0.005 %
Arsenic (As) .....	max. 0.00001 %	Zinc (Zn) .....	max. 0.0005 %
Calcium (Ca) .....	max. 0.002 %		

Code	Capacity
S5046-1-0500	500 g
S5046-1-1000	1 kg

## SODIUM CARBONATE, VOLUMETRIC SOLUTIONS

### S5048-0 Sodium carbonate, solution 0.05 mol/l (0.1 N)

Synonyms:

- Na<sub>2</sub>CO<sub>3</sub>  
- M = 105.99 g/mol  
- CAS [497-19-8]  
- EC number: 207-838-8

**Physical data:**  
- Density: ~ 1.1 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 1

**Safety:**  
- EC Index no.: 011-005-00-2  
- Poison class CH (Swiss): F

**Transport/storage:**  
- LGK: 10-13

1 ml = 0.005299 g Na<sub>2</sub>CO<sub>3</sub>

HS-No: 2836 20 00 00

Code	Capacity
S5048-0-1000	1.0 L

### S5049-0 Sodium carbonate, solution 0.5 mol/l (1 N)

Synonyms:

- Na<sub>2</sub>CO<sub>3</sub>  
- M = 105.99 g/mol  
- CAS [497-19-8]  
- EC number: 207-838-8

**Toxicological data:**  
- WGK: 1

**Safety:**  
- EC Index no.: 011-005-00-2  
- Poison class CH (Swiss): F

**Transport/storage:**  
- LGK: 10-13

1 ml = 0.05299 g Na<sub>2</sub>CO<sub>3</sub>

HS-No: 2836 20 00 00

Code	Capacity
S5049-0-1000	1.0 L

## SODIUM CHLORIDE

Synonyms: Salt, Common salt, Rock Salt, Sea salt

- NaCl  
- M = 58.44 g/mol  
- CAS [7647-14-5]  
- EC number: 231-598-3

**Physical data:**  
- Spec. density: 2.17 g/cm<sup>3</sup>

- Bulk density: ~ 1140 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 358 g/l  
- Melting point: 801 °C  
- Boiling point: 1461 °C  
- Vapour pressure: (865 °C) 1.3 hPa  
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~ 4.5 - 7.0

**Toxicological data:**  
- LD 50 (oral, rat): 3000 mg/kg  
- WGK: 1

**Safety:**  
- Poison class CH (Swiss): F

**Transport/storage:**  
- LGK: 10-13

### S5065-0 Sodium chloride, solution 0.1 mol/l (0.1 N)

HS-No: 2836 20 00 00

- NaCl  
- M = 58.44 g/mol  
- CAS [7647-14-5]  
- EC number: 231-598-3

**Physical data:**  
- Form: Liquid  
- Density: 1.004 g/m<sup>3</sup>

**Toxicological data:**  
- WGK: 0

**Safety:**  
- Poison class CH (Swiss): F

**Transport/storage:**  
- LGK: 10-13

1 ml = 0.005844 g NaCl

Code	Capacity
S5065-0-1000	1.0 L

### S5068-1 Sodium chloride, reagent grade

HS-No: 2501 00 10 00

Assay .....	min. 99.8%	Arsenic (As) .....	max. 0.00004%
Insoluble in water .....	max. 0.005%	Barium (Ba) .....	max. 0.001%
pH (5%, H <sub>2</sub> O) .....	5 - 8	Calcium (Ca) .....	max. 0.002%
Bromides (Br) .....	max. 0.005%	Copper (Cu) .....	max. 0.0002%
Chlorates and Nitrates (as NO <sub>3</sub> ) .....	max. 0.003%	Heavy metals (as Pb) .....	max. 0.0003%
Hexacyanoferrate (II) (Fe(CN) <sub>6</sub> ) .....	max. 0.0001%	Iron (Fe) .....	max. 0.0001%
Iodides (I) .....	max. 0.001%	Magnesium (Mg) .....	max. 0.0005%
Phosphates (PO <sub>4</sub> ) .....	max. 0.0005%	Nickel (Ni) .....	max. 0.0005%
Sulfates (SO <sub>4</sub> ) .....	max. 0.001%	Potassium (K) .....	max. 0.005%
Total N .....	max. 0.0005%		

Code	Capacity
S5068-1-0500	500 g
S5068-1-1000	1 kg

**S5068-3 Sodium chloride, extra pure**

HS-No: 2501 00 10 00

Assay (argentometric) .....	min. 99.5 %	Aluminium (Al) .....	max. 0.00002 %
Appearance of solution .....	clear and colourless	Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	5.0 - 7.5	Arsenic (As) .....	max. 0.0001 %
Free acid (a HCl) .....	max. 0.001 %	Barium (Ba) .....	max. 0.001 %
Free alkali (as NaOH) .....	max. 0.002 %	Calcium (Ca) .....	max. 0.002 %
Bromides (Br) .....	max. 0.005 %	Heavy metals (as Pb) .....	max. 0.0005 %
Hexacyanoferrate [Fe(Cn) <sub>6</sub> ] .....	max. 0.0001 %	Iron (Fe) .....	max. 0.0001 %
Iodides (I) .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.001 %
Nitrites (absorbance of an aqueous) solution 10% at 354 nm .....	max. 0.01 A.U.	Potassium (K) .....	max. 0.01 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.001 %	Loss on drying (130 °C) .....	max. 0.3 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Residual solvents (Ph Eur/ICH) .....	excluded by production process

Code	Capacity
S5068-3-0500	500 g
S5068-3-1000	1 kg

**SODIUM CHROMATE, ANHYDROUS**

## Synonyms:

- Na<sub>2</sub>CrO<sub>4</sub>
- M = 161.97 g/mol
- CAS [7775-11-3]
- EC number: 231-889-5
- Melting point: ~ 792 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 8.5 - 10

- S: 53-24-37-45-60-61
- Poison class CH (Swiss): 3

**Physical data:**

- Spec. density: 2.72 g/cm<sup>3</sup>
- Bulk density: ~ 1000 kg/m<sup>3</sup>
- Solub. in water (30 °C): 873 g/l

**Toxicological data:**

- WGK: 3

**Safety:**

- EC Index no.: 024-017-00-8
- R: 49-43-50/53

**Transport/storage:**

- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- PAX: 911
- CAO: 911
- LGK: 6.1 B
- Disposal: 15

**S5069-1 Sodium chromate anhydrous, reagent grade**

HS-No: 2841 50 00 00

Assay (iodometric) .....	min. 99.5 %	Calcium (Ca) .....	max. 0.005 %
pH (5%, H <sub>2</sub> O) .....	8.5 - 10.0	Copper (Cu) .....	max. 0.001 %
Chloride (Cl) .....	max. 0.005 %	Iron (Fe) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %		

Code	Capacity
S5069-1-0500	500 g

**SODIUM CHROMATE TETRAHYDRATE**

## Synonyms:

- Na<sub>2</sub>CrO<sub>4</sub>·4H<sub>2</sub>O
- Na<sub>2</sub>CrO<sub>4</sub>·4H<sub>2</sub>O
- M = 234.03 g/mol
- CAS [10034-82-9]
- EC number: 231-889-5
- Solub. in water (20 °C): 443 g/l
- Melting point: ~ 792 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 8.5 - 10

- S: 53-45-60-61
- Poison class CH (Swiss): 3

**Physical data:**

- Form: Solid
- Spec. density: 2.73 g/cm<sup>3</sup>
- Bulk density: 800 ~ 900 kg/m<sup>3</sup>

**Toxicological data:**

- WGK: 3

**Safety:**

- EC Index no.: 024-018-00-3
- R: 45-46-60-61-E25-E26-34-42/43-E48/23-50/53

**Transport/storage:**

- ADR: 6.1 TC4 I UN 3290
- IMDG: 6.1 I UN 3290
- IATA/ICAO: 6.1 I UN 3290
- PAX: 606
- CAO: 607
- LGK: 6.1 B
- Disposal: 15

**S5070-3 Sodium chromate tetrahydrate, extra pure**

HS-No: 2841 50 00 00

Assay (iodometric) .....	min. 99.5 %	Calcium (Ca) .....	max. 0.005 %
pH (5%, H <sub>2</sub> O) .....	8.5 - 10.0	Copper (Cu) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.01 %	Iron (Fe) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %		

Code	Capacity
S5070-3-0500	500 g

**SODIUM DICHROMATE DIHYDRATE**

## Synonyms: Sodium bichromate, Sodium pyrochromate

- Na<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>·2H<sub>2</sub>O
- M = 298.00 g/mol
- CAS [7789-12-0]
- EC number: 234-190-3
- Boiling point: 400 °C (decomposes)
- pH (100 g/l H<sub>2</sub>O, 20 °C) 3.5

- S: 53-36/37-45-60-61
- Poison class CH (Swiss): 3

**Physical data:**

- Spec. density: 2.52 g/cm<sup>3</sup>  
(anhydrous substance)
- Bulk density: ~ 1200 kg/m<sup>3</sup>
- Solub. in water (20 °C): 731.8 g/l
- Melting point: 356.7 °C  
(anhydrous substance)

**Toxicological data:**

- LD 50 (oral, rat): 50 mg/kg
- WGK: 3

**Safety:**

- EC Index no.: 024-004-01-4
- R: 49-46-E21-E25-E26-37/38-41-43-50/53

**Transport/storage:**

- ADR: 6.1 T5 III UN 3288
- IMDG: 6.1 III UN 3288
- IATA/ICAO: 6.1 III UN 3288
- PAX: 619
- CAO: 619
- LGK: 6.1 B
- Disposal: 15



**S5087-1 Sodium dichromate dihydrate, reagent grade**

Assay (iodometric) .....	min. 99.5 %	Calcium (Ca) .....	max. 0.002 %
Insoluble matter and precipitable by ammonium hydroxide .....	max. 0.005 %	Copper (Cu) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.001 %	Iron (Fe) .....	max. 0.002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Lead (Pb) .....	max. 0.002 %
Aluminium (Al) .....	max. 0.002 %	Potassium (K) .....	max. 0.01 %

HS-No: 2841 30 00 00

Code	Capacity
S5087-1-0500	500 g
S5087-1-1000	1 kg

**S5087-3 Sodium dichromate dihydrate, extra pure**

Assay (iodometric) .....	min. 99.0%
Chloride (Cl) .....	min. 0.1%
Sulphate (SO <sub>4</sub> ) .....	min. 0.5%

HS-No: 2841 30 00 00

Code	Capacity
S5087-3-1000	1 kg

**SODIUM DIHYDROGEN PHOSPHATE ANHYDROUS**

Synonyms: Sodium biphosphate, Sodium phosphate monobasic

- NaH <sub>2</sub> PO <sub>4</sub>	- Solub. in water (20 °C): 850 g/l
- M = 120.0 g/mol	- Melting point: 200 °C
- CAS [7558-80-7]	- pH (50 g/l H <sub>2</sub> O, 20 °C) ~ 4.5
- EC number: 231-449-2	

**Safety:**

- Poison class CH (Swiss): 5

**Transport/storage:**- LGK: 10-13  
- Disposal: 14**Physical data:**- Bulk density: ~ 940 kg/m<sup>3</sup>**Toxicological data:**- LD 50 (oral, rat): 8290 mg/kg  
- WGK: 1**S5092-1 Sodium dihydrogen phosphate anhydrous, reagent grade**

Assay (acidimetric) .....	min. 99.0%	Cobalt (Co) .....	max. 0.005%
pH-value(5%, water at 25 °C) .....	4.0 - 4.5	Iron (Fe) .....	max. 0.005%
Chloride (Cl) .....	max. 0.01%	Potassium (K) .....	max. 0.03%
Sulphate (SO <sub>4</sub> ) .....	max. 0.05%	Nickel (Ni) .....	max. 0.005%
Calcium (Ca) .....	max. 0.02%	Lead (Pb) .....	max. 0.005%
Copper (Cu) .....	max. 0.005%	Zinc (Zn) .....	max. 0.005%
Cadmium (Cd) .....	max. 0.005%		

HS-No: 2835 22 00 00

Code	Capacity
S5092-1-0500	500 g
S5092-1-1000	1 kg

**S5092-3 Sodium dihydrogen phosphate anhydrous, extra pure**

Assay (acidimetric) .....	min. 99 %	Arsenic (As) .....	max. 0.0002 %
Insoluble in water .....	max. 0.005 %	Heavy metals (as Pb) .....	max. 0.001 %
pH (5%, H <sub>2</sub> O) .....	4.2 - 4.5	Iron (Fe) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.005 %	Organic volatile impurities .....	passes test
Sulfates (SO <sub>4</sub> ) .....	max. 0.03 %	Loss on drying (130 °C) .....	max. 1 %
aluminium, calcium and related elements .....	passes test		

HS-No: 2835 22 00 00

Code	Capacity
S5092-3-1000	1 kg

S

**SODIUM DIHYDROGEN PHOSPHATE DIHYDRATE**

Synonyms: Sodium biphosphate, mono-Sodium orthophosphate, Sodium phosphate monobasic

- NaH <sub>2</sub> PO <sub>4</sub> ·2H <sub>2</sub> O	- Solub. in water (20 °C): 850 g/l
- M = 156.01 g/mol	- Melting point: 60 °C
- CAS [13472-35-0]	- pH (50 g/l H <sub>2</sub> O, 20 °C) ~ 4.2 - 4.5
- EC number: 231-449-2	

**Safety:**

- Poison class CH (Swiss): 5

**Transport/storage:**- LGK: 10-13  
- Disposal: 14**Physical data:**- Spec. density: 1.92 g/cm<sup>3</sup>  
- Bulk density: ~ 1000 kg/m<sup>3</sup>**Toxicological data:**- LD 50 (oral, rat): 8290 mg/kg  
(anhydrous substance)  
- WGK: 1**S5099-1 Sodium dihydrogen phosphate dihydrate, reagent grade**

Assay (acidimetric) .....	min. 99 %	Calcium (Ca) .....	max. 0.005 %
Insoluble in water .....	max. 0.005 %	Copper (Cu) .....	max. 0.0002 %
pH (5%, H <sub>2</sub> O) .....	4.2 - 4.5	Heavy metals (as Pb) .....	max. 0.0005 %
N compounds (as N) .....	max. 0.001 %	Iron (Fe) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.0005 %	Lead (Pb) .....	max. 0.0002 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.003 %	Magnesium (Mg) .....	max. 0.005 %
Arsenic (As) .....	max. 0.0002 %	Nickel (Ni) .....	max. 0.001 %

HS-No: 2835 22 00 00

Code	Capacity
S5099-1-0500	500 g
S5099-1-1000	1 kg

**SODIUM DIHYDROGEN PHOSPHATE MONOHYDRATE**

Synonyms: Sodium biphosphate, Monosodium orthophosphate, Primary sodium phosphate, Sodium phosphate monobasic

- NaH <sub>2</sub> PO <sub>4</sub> ·H <sub>2</sub> O	- Solub. in water (20 °C): 850 g/l
- M = 137.99 g/mol	- Melting point: ~ 100 °C (decomposes)
- CAS [10049-21-5]	- pH (50 g/l H <sub>2</sub> O, 20 °C) 4.1 - 4.5
- EC number: 231-449-2	

**Safety:**

- Poison class CH (Swiss): 5

**Transport/storage:**- LGK: 10-13  
- Disposal: 14**Physical data:**- Spec. density: 2.04 g/cm<sup>3</sup>  
- Bulk density: ~ 880 kg/m<sup>3</sup>**Toxicological data:**- LD 50 (oral, rat): 8290 mg/kg  
(anhydrous substance)  
- WGK: 1**S5108-1 Sodium dihydrogen phosphate monohydrate, reagent grade**

Assay .....	min. 98 %	Arsenic (As) .....	max. 0.0002 %
Insoluble in water .....	max. 0.005 %	Calcium (Ca) .....	max. 0.01 %
pH (5%, H <sub>2</sub> O) .....	4.2 - 4.5	Heavy metals (as Pb) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.014 %	Iron (Fe) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.03 %	Potassium (K) .....	max. 0.01 %
Total N .....	max. 0.005 %		

HS-No: 2835 22 00 00

Code	Capacity
S5108-1-0250	250 g
S5108-1-0500	500 g
S5108-1-1000	1 kg



## SODIUM DISULFITE



Synonyms: Sodium metabisulfite, Sodium pyrosulfite

- Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub>  
- M = 190.10 g/mol  
- CAS [7681-57-4]  
- EC number: 231-673-0

- Bulk density: ~ 1100 - 1200 kg/m<sup>3</sup>  
- Solub. in water (20 °C): ~ 650 g/l  
- Melting point: ~ 150 °C (decomposes)  
- pH (50 g/l H<sub>2</sub>O, 20 °C) 3.5 - 5.0

**Safety:**  
- R: 22-31-37-41  
- S: 26-39-46  
- Poison class CH (Swiss): 3

**Physical data:**  
- Form: Powder  
- Spec. density: 1.48 g/cm<sup>3</sup>

**Toxicological data:**  
- LD 50 (oral, rat): 1540 mg/kg  
- WGK: 1

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 14

### S5110-1 Sodium disulfite, reagent grade

HS-No: 2832 10 00 00

Assay (Iodometric) ..... min. 98.0 %  
Identity ..... passes test  
Appearance of solution ..... passes test  
Insoluble in water ..... max. 0.005 %  
pH (5%, H<sub>2</sub>O) ..... 3.5 - 5.0  
Chlorides (Cl) ..... max. 0.005 %  
Thiosulfates (S<sub>2</sub>O<sub>3</sub>) ..... max. 0.05 %

Arsenic (As) ..... max. 0.0005 %  
Copper (Cu) ..... max. 0.0005 %  
Heavy metals (as Pb) ..... max. 0.001 %  
Iron (Fe) ..... max. 0.0005 %  
Lead (Pb) ..... max. 0.0005 %  
Zinc (Zn) ..... max. 0.001 %

**Code Capacity**  
S5110-1-0500 500 g

### S5110-3 Sodium disulfite, extra pure

HS-No: 2832 10 00 00

Assay (Iodometric) ..... min. 97 %  
Appearance of solution ..... passes test  
pH (5%, H<sub>2</sub>O) ..... 3.5 - 5.0  
Chlorides (Cl) ..... max. 0.01 %  
Thiosulfates (S<sub>2</sub>O<sub>3</sub>) ..... max. 0.02 %  
Arsenic (As) ..... max. 0.0002 %  
Copper (Cu) ..... max. 0.01 %

Iron (Fe) ..... max. 0.001 %  
Lead (Pb) ..... max. 0.0005 %  
Mercury (Hg) ..... max. 0.0001 %  
Selenium (Se) ..... max. 0.0006 %  
Zinc (Zn) ..... max. 0.001 %  
Residual solvents (Ph Eur/ICH) ..... excluded by production process

**Code Capacity**  
S5110-3-0500 500 g  
S5110-3-1000 1 kg

## SODIUM FLUORIDE



Synonyms: Chemifluor, Ossalin, Ossin, Zymafluor

- NaF  
- M = 41.99 g/mol  
- CAS [7681-49-4]  
- EC number: 231-667-8

- Boiling point: 1704 °C  
- Vopour pressure: (1077 °C) 1 hPa  
- pH (40 g/l H<sub>2</sub>O, 20 °C) ~ 10.2

- S: 22-36-45  
- Poison class CH (Swiss): 3

**Physical data:**  
- Spec. density: 2.8 g/cm<sup>3</sup>  
- Bulk density: ~ 800 kg/m<sup>3</sup>  
- Solub. in water (20 °C): 42 g/l  
- Melting point: 933 °C

**Toxicological data:**  
- LD 50 (oral, rat): 52 mg/kg  
- MAK: 2.5 mg/m<sup>3</sup>  
- WGK: 1

**Safety:**  
- EC Index no.: 009-004-0-7  
- R: 25-32-36/38

**Transport/storage:**  
- ADR: 6.1 T5 III UN 1690  
- IMDG: 6.1 III UN 1690  
- IATA/ICAO: 6.1 III UN 1690  
- PAX: 619  
- CAO: 619  
- LGK: 6.1 B  
- Disposal: 23

### S5115-1 Sodium fluoride, reagent grade

HS-No: 2826 11 00 00

Assay ..... min. 99%  
Loss on drying (150 °C) ..... max. 0.2%  
Free acid (as HF) ..... max. 0.1%  
Free alkali (as NaOH) ..... max. 0.1%  
Fe ..... max. 0.003%

Sodium hexafluorosilicate (Na<sub>2</sub>SiF<sub>6</sub>) ..... max. 0.1%  
Heavy metals (as Pb) ..... max. 0.001%  
Chloride (Cl) ..... max. 0.02%  
Sulfate (SO<sub>4</sub>) ..... max. 0.02%

**Code Capacity**  
S5115-1-0500 500 g  
S5115-1-1000 1 kg

### S5115-3 Sodium fluoride, extra pure

HS-No: 2826 11 00 00

Assay (complexometric) ..... min. 98.5 %  
Appearance of solution ..... clear and colourless  
Free acid (as HF) ..... max. 0.2 %  
Free alkali (as NaOH) ..... max. 0.1 %  
Chlorides (Cl) ..... max. 0.001 %  
Phosphates (PO<sub>4</sub>) ..... max. 0.002 %  
Sodium Hexafluorosilicate (Na<sub>2</sub>SiF<sub>6</sub>) ..... max. 0.1 %  
Sulfates (SO<sub>4</sub>) ..... max. 0.01 %

Copper (Cu) ..... max. 0.002 %  
Heavy metals (as Pb) ..... max. 0.002 %  
Iron (Fe) ..... max. 0.005 %  
Lead (Pb) ..... max. 0.002 %  
Nickel (Ni) ..... max. 0.002 %  
Loss on drying (150 °C) ..... max. 0.5 %  
Organic volatile impurities ..... passes test  
Residual solvents (Ph Eur/ICH) ..... excluded by production process

**Code Capacity**  
S5115-3-0500 500 g  
S5115-3-1000 1 kg

## SODIUM HEXAMETAPHOSPHATE

Synonyms: Sodium polyphosphate, Graham's salt

- (NaPO<sub>3</sub>)<sub>n</sub>  
- CAS [10124-56-8]  
- EC number: 233-782-9

- Solub. in water (20 °C): soluble  
- Melting point: 628 °C  
- pH (10 g/l H<sub>2</sub>O, 20 °C) ~ 5.7

**Safety:**  
- Poison class CH (Swiss): 4

**Physical data:**  
- Spec. density: 2.48 g/cm<sup>3</sup>  
- Bulk density: ~ 900 kg/m<sup>3</sup>

**Toxicological data:**  
- LD 50 (oral, rat): 5000 mg/kg  
- WGK: 1

**Transport/storage:**  
- LGK: 10-13

### S5124-1 Sodium hexametaphosphate, reagent grade

HS-No: 2835 39 00 00

Assay (as P<sub>2</sub>O<sub>5</sub>) ..... 65.0% ~ 70.0%  
Insoluble matter in water ..... max. 0.01%  
Chlorides (Cl) ..... max. 0.005%  
Sulfates (SO<sub>4</sub>) ..... max. 0.01%  
Iron (Fe) ..... max. 0.005%

Phosphate (PO<sub>4</sub>) ..... passes test  
Arsenic (As) ..... max. 0.0002%  
Heavy metals (as Pb) ..... max. 0.002%  
Reduced permanganate  
potassium material ..... passes test

**Code Capacity**  
S5124-1-1000 1 kg

**S5124-3 Sodium hexametaphosphate, extra pure**

HS-No: 2835 39 00 00

Assay (in P <sub>2</sub> O <sub>5</sub> ) (acidimetric) .....	min. 67 %	Copper (Cu) .....	max. 0.0025 %
Insoluble in water .....	max. 0.01 %	Iron (Fe) .....	max. 0.01 %
Chlorides (Cl) .....	max. 0.03 %	Lead (Pb) .....	max. 0.0025 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.1 %	Nickel (Ni) .....	max. 0.0025 %
Arsenic (As) .....	max. 0.0002 %		

Code	Capacity
S5124-3-1000	1 kg

**SODIUM HYDROGEN CARBONATE**

Synonyms: Sodium bicarbonate

- NaHCO<sub>3</sub>
- M = 84.01 g/mol
- CAS [144-55-8]
- EC number: 205-633-8
- Melting point: 270 °C (decomposes)
- Vapour pressure: (30 °C) 8.3 hPa
- pH (50 g/l H<sub>2</sub>O, 20 °C) ≤ 8.6

**Safety:**  
- Poison class CH (Swiss): 5

- Physical data:**
- Spec. density: 2.22 g/cm<sup>3</sup>
  - Bulk density: ~ 1000 kg/m<sup>3</sup>
  - Solub. in water (20 °C): 95.5 g/l

- Toxicological data:**
- LD 50 (oral, rat): 4220 mg/kg
  - WGK: 1

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 14

**S5135-1 Sodium hydrogen carbonate, reagent grade**

HS-No: 2836 30 00 00

Assay (acidimetric) .....	min. 99.7%	Copper (Cu) .....	max. 0.0002%
Insoluble in water .....	max. 0.015%	Heavy metals (as Pb) .....	max. 0.005%
Chlorides (Cl) .....	max. 0.001%	Iron (Fe) .....	max. 0.0005%
Phosphates (PO <sub>4</sub> ) .....	max. 0.001%	Lead (Pb) .....	max. 0.0005%
Phosphates and silicates (as SiO <sub>2</sub> )	max. 0.005%	Magnesium (Mg) .....	max. 0.005%
S compounds as (SO <sub>4</sub> ) .....	max. 0.003%	Potassium (K) .....	max. 0.005%
Total N .....	max. 0.0005%	Zinc (Zn) .....	max. 0.0005%
Ammonium (NH <sub>4</sub> ) .....	max. 0.0005%	I red. matter (as SO <sub>2</sub> ) .....	max. 0.005%
Calcium (Ca) .....	max. 0.005%	Loss on drying (silica gel) .....	max. 0.2%
Cadmium (Cd) .....	max. 0.0005%		

Code	Capacity
S5135-1-0500	500 g
S5135-1-1000	1 kg

**SODIUM HYDROGEN SULFATE MONOHYDRATE****S**

Synonyms:

- NaHSO<sub>4</sub>·H<sub>2</sub>O
- M = 138.07 g/mol
- CAS [10034-88-5]
- EC number: 231-665-7

**Toxicological data:**  
- WGK: 1

**Transport/storage:**  
- LGK: 8B  
- Packing-cat: E  
- Disposal: 14  
- Road/Rail: 8/16  
- IMDG-Code: 8/III UN 3260  
- IATA/DGR: 8 III UN 3260  
- CAO: 823  
- PAX: 882

- Physical data:**
- Spec. density: 2.12 g/cm<sup>3</sup> (20 °C)
  - Solub. in water 670 g/l (20 °C)
  - pH value -1 (50 g/l H<sub>2</sub>O, 20 °C)
  - Melting point - 58.2 °C
  - Bulk density 900 - 970 kg/m<sup>3</sup>

**Safety:**  
- Irritant  
- R: 41  
- S: 24-26  
- Poison class (CH) 3  
- EC Index no.: 016-046-00-X

**S5122-1 Sodium hydrogen sulfate monohydrate, reagent grade**

HS-No: 2833 19 00 00

Assay .....	min. 99 %	Arsenic (As) .....	max. 0.0005 %
Substances insoluble in water .....	max. 0.005 %	Aluminium (Al) .....	max. 0.001 %
Nitrate (NO <sub>3</sub> ) .....	max. 0.00025 %	Magnesium (Mg) .....	max. 0.0004 %
Chloride (Cl) .....	max. 0.001 %	Potassium (K) .....	max. 0.002 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0005 %	Calcium (Ca) .....	max. 0.001 %
Heavy metals (as Pb) .....	max. 0.0005 %	Iron (Fe) .....	max. 0.0005 %

Code	Capacity
S5122-1-0500	500 g

**SODIUM HYDROSULFITE**

Synonyms:

- Na<sub>2</sub>S<sub>2</sub>O<sub>4</sub>
- M = 174.11 g/mol
- CAS [7775-14-6]
- EC number: 231-890-0
- Bulk density ~1250 kg/m<sup>3</sup>
- Ignition temp. > 200 °C

- Poison class (CH) 3  
- EC Index no.: 016-028-00-1

- Physical data:**
- Spec. density: 2.38 g/cm<sup>3</sup> (20 °C)
  - Solub. in water ~ 250 g/l (20 °C) (decomposes)
  - pH value ~7 - 9 (50 g/l H<sub>2</sub>O, 20 °C)
  - Melting point ~ 100 °C (decomposes)

**Toxicological data:**  
- WGK: 1  
- LD 50 (oral, rat) ~ 2500 mg/kg

**Transport/storage:**  
- LGK: 42  
- Packing-cat: E  
- Disposal: 14  
- Road/Rail: 4.2/13b  
- IMDG-Code: 4.2/II UN 1384  
- IATA/DGR: 4.2 II UN 1384  
- CAO: 418  
- PAX: 416

**Safety:**  
- Harmful  
- R: 7-22-31  
- S: 7/8-26-28.1-43.6

**S5123-3 Sodium hydrosulfite, reagent grade**

HS-No: 2826 11 00 00

Assay (iodometric) .....	min. 87 %	Chlorides (Cl) .....	max. 0.01 %
Identity .....	passes test	Iron (Fe) .....	max. 0.002 %

Code	Capacity
S5123-3-0500	500 g

## Sodium bicarbonate

### Synonyms:

- Formula: NaHCO<sub>3</sub>
- F.W.: 84.01
- CAS: 144-55-8

### Physical Data:

- Vapour pressure : 972 hPa( 100 °)
- Density (g/ml, 22 °C): 2.22
- Melting point (°C): 270
- Solubility of water (% ,20°C): 96 g/l

### Transport/storage:

- No Dangerous good

### S5135-4 Sodium bicarbonate, HPLC Grade

See specification in Solvents Specification - 50

HS-No: 2836 30 00

Code	Capacity
S5135-4-1001	1.0 L
S5135-4-4001	4.0 L



## SODIUM HYDROXIDE

### Synonyms: Caustic soda

- NaOH
- M = 40.00 g/mol
- CAS [1310-73-2]
- EC number: 215-185-5

### Physical data:

- Form: Solid
- Spec. density: 2.13 g/cm<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: 323 °C

- Boiling point: 1390 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 14

### Toxicological data:

- MAK: 2 mg/m<sup>3</sup>
- WGk: 1

### Safety:

- EC Index no.: 011-002-00-6
- R: 35
- S: 26-36/37/39-45

- Poison class CH (Swiss): 2

### Transport/storage:

- ADR: 8 C6 II UN 1823
- IMDG: 8 II UN 1823
- IATA/ICAO: 8 II UN 1823
- PAX: 814
- CAO: 816
- LGK: 8 B
- Disposal: 13

### S5158-1 Sodium hydroxide pellets, reagent grade

HS-No: 2815 11 00 00

Assay (acidimetric) .....	min. 99%	Calcium (Ca) .....	max. 0.0005%
Carbonate (as potassium carbonate) .....	max. 1%	Copper (Cu) .....	max. 0.0005%
Chloride (Cl) .....	max. 0.0005%	Iron (Fe) .....	max. 0.0005%
Phosphate (PO <sub>4</sub> ) .....	max. 0.0005%	Lead (Pb) .....	max. 0.0002%
Sulphate (SO <sub>4</sub> ) .....	max. 0.0005%	Manganese (Mn) .....	max. 0.0005%
Silicates (SiO <sub>2</sub> ) .....	max. 0.001%	Mercury (Hg) .....	max. 0.000005%
Total nitrogen (N) .....	max. 0.0003%	Nickel (Ni) .....	max. 0.0005%
Heavy metals (as Pb) .....	max. 0.0005%	Potassium (K) .....	max. 0.02%
Aluminium (Al) .....	max. 0.0005%	Zinc (Zn) .....	max. 0.0005%
Arsenic (As) .....	max. 0.0001%		

Code	Capacity
S5158-1-1000	1 kg
S5158-1-5000	5 kg

### S5158-3 Sodium hydroxide pellets, extra pure

HS-No: 2815 11 00 00

Assay (acidimetric) .....	min. 98.0 - 100.5%	Copper (Cu) .....	max. 0.0005%
Carbonate (as Na <sub>2</sub> CO <sub>3</sub> ) .....	max. 1%	Iron (Fe) .....	max. 0.001%
Chloride (Cl) .....	max. 0.005%	Mercury (Hg) .....	max. 0.00001%
Phosphate (PO <sub>4</sub> ) .....	max. 0.002%	Lead (Pb) .....	max. 0.0005%
Sulphate (SO <sub>4</sub> ) .....	max. 0.003%	Potassium (K) .....	max. 0.10%
Silicates (SiO <sub>2</sub> ) .....	max. 0.01%	Zinc (Zn) .....	max. 0.0025%
Total nitrogen (N) .....	max. 0.0005%	Identity .....	passes test
Heavy metals (as Pb) .....	max. 0.0005%	Appearance of solution .....	passes test
Aluminium (Al) .....	max. 0.001%	Insoluble substances and	
Arsenic (As) .....	max. 0.0003%	organic matter .....	passes test

Code	Capacity
S5158-3-9050	50 kg



## SODIUM HYDROXIDE 50%

### Synonyms:

- NaOH
- M = 40.00 g/mol
- CAS [1310-73-2]
- EC number: 215-185-5

### Physical data:

- Form: Liquid
- Density: 1.4 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: 12 °C
- Boiling point: 143 °C

- Vapour pressure: (20 °C) 2 hPa
- pH (20 °C) >14

### Toxicological data:

- WGk: 1

### Safety:

- EC Index no.: 011-002-00-6
- R: 35
- S: 23.2-51-26-36/37/39-45

### Transport/storage:

- ADR: 8 C5 II UN 1824
- IMDG: 8 II UN 1824
- IATA/ICAO: 8 II UN 1824
- PAX: 809
- CAO: 813
- LGK: 8 B

### S5159-1 Sodium hydroxide 50%, reagent grade

HS-No: 2815 12 00 00

Assay .....	min. 50.0 %	Copper (Cu) .....	max. 1 ppm
Colour .....	max. 10 Hazen	Iron (Fe) .....	max. 3 ppm
Silicates (SiO <sub>2</sub> ) .....	max. 10 ppm	Lead (Pb) .....	max. 2 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 1 ppm	Magnesium (Mg) .....	max. 0.5 ppm
Aluminium (Al) .....	max. 5 ppm	Mercury (Hg) .....	max. 0.2 ppm
Cadmium (Cd) .....	max. 1 ppm	Nickel (Ni) .....	max. 3 ppm
Chromium (Cr) .....	max. 1 ppm	Potassium (K) .....	max. 200 ppm
Calcium (Ca) .....	max. 3 ppm		

Code	Capacity
S5159-1-9025	25 kg
S5159-1-930E	300 kg

**S5159-10 Sodium hydroxide 50%, Selective grade**

HS-No: 2815 12 00 00

Assay .....	min. 49.0 %	Sulfate (SO <sub>4</sub> ) .....	max. 5 ppm
Sodium carbonate (Na <sub>2</sub> CO <sub>3</sub> ) .....	max. 0.05 %	Aluminium (Al) .....	max. 5 ppm
Colour .....	max. 10 Hazen	Calcium (Ca) .....	max. 3 ppm
Insoluble matter .....	max. 20 ppm	Copper (Cu) .....	max. 1 ppm
Chloride (Cl) .....	max. 10 ppm	Iron (Fe) .....	max. 3 ppm
Heavy metals (as Ag) .....	max. 2 ppm	Lead (Pb) .....	max. 2 ppm
Nitrogen compounds (as N) .....	max. 1 ppm	Magnesium (Mg) .....	max. 1 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 1 ppm	Mercury (Hg) .....	max. 2 ppm
Potassium (K) .....	max. 200 ppm	Nickel (Ni) .....	max. 3 ppm

Code	Capacity
S5159-10-930E	300 kg

**S5159-6 Sodium hydroxide 50%, LE**

HS-No: 2815 12 00 00

Assay .....	min. 50.0 %	Copper (Cu) .....	max. 1 ppm
Colour .....	max. 10 Hazen	Iron (Fe) .....	max. 3 ppm
Silicates (SiO <sub>2</sub> ) .....	max. 10 ppm	Lead (Pb) .....	max. 2 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 1 ppm	Magnesium (Mg) .....	max. 0.5 ppm
Aluminium (Al) .....	max. 5 ppm	Mercury (Hg) .....	max. 0.2 ppm
Cadmium (Cd) .....	max. 1 ppm	Nickel (Ni) .....	max. 3 ppm
Chromium (Cr) .....	max. 1 ppm	Potassium (K) .....	max. 200 ppm
Calcium (Ca) .....	max. 3 ppm		

Code	Capacity
S5159-6-9025	25 kg

**S5159-6 Sodium hydroxide 50%, EC-100 (EL Grade)**

HS-No: 2815 12 00 00

Assay .....	min. 49.0 %	Calcium (Ca) .....	max. 1000 ppb
Colour .....	max. 10 Hazen	Copper (Cu) .....	max. 500 ppb
Chloride (Cl) .....	max. 10 ppm	Iron (Fe) .....	max. 1000 ppb
Silicates (SiO <sub>2</sub> ) .....	max. 10 ppm	Lead (Pb) .....	max. 1000 ppb
Phosphate (PO <sub>4</sub> ) .....	max. 1 ppm	Magnesium (Mg) .....	max. 500 ppb
Aluminium (Al) .....	max. 500 ppb	Nickel (Ni) .....	max. 500 ppb
Chromium (Cr) .....	max. 500 ppb	Zinc (Zn) .....	max. 500 ppb

Code	Capacity
S5159-6-930E	300 kg

**S5159-8 Sodium hydroxide 50%, CMOS grade**

HS-No: 2815 12 00 00

Assay .....	50.0 - 52.0 %	Aluminium (Al) .....	max. 100 ppb
Colour .....	max. 10 APHA	Calcium (Ca) .....	max. 1500 ppb
Insoluble matter .....	max. 30 ppm	Chromium (Cr) .....	max. 500 ppb
Sodium carbonate (Na <sub>2</sub> CO <sub>3</sub> ) .....	max. 0.05 %	Copper (Cu) .....	max. 50 ppb
Ammonium hydroxide precipitate.....	max. 0.005 %	Iron (Fe) .....	max. 600 ppb
Chloride (Cl) .....	max. 20 ppm	Lead (Pb) .....	max. 250 ppb
Heavy metals (as Ag) .....	max. 2 ppm	Magnesium (Mg) .....	max. 300 ppb
Nitrogen compounds (as N) .....	max. 1 ppm	Mercury (Hg) .....	max. 50 ppb
Phosphate (PO <sub>4</sub> ) .....	max. 1 ppm	Nickel (Ni) .....	max. 100 ppb
Potassium (K) .....	max. 50 ppm	Silicon (Si) .....	max. 1000 ppb
Sulfate (SO <sub>4</sub> ) .....	max. 5 ppm	Zinc (Zn) .....	max. 250 ppb

Code	Capacity
S5159-8-920E	200 kg

**SODIUM HYDROXIDE, VOLUMETRIC SOLUTIONS****S5161-0 Sodium hydroxide, solution 0.01 mol/l (0.01 N)**

Synonyms:

- NaOH
- M = 40.00 g/mol
- CAS [1310-73-2]
- EC number: 215-185-5

**Toxicological data:**

- MAK: 2 mg/m<sup>3</sup>
- (pure substance)
- WGK: 0

**Transport/storage:**

- LGK: 8 B

HS-No: 2815 12 00 00

**Physical data:**

- Density: 1.00 g/cm<sup>3</sup>
- pH (20 °C) ~12.5

**Safety:**

- EC Index no.: 011-002-00-6
- Poison class CH (Swiss): 4

1ml = 0.000400 g NaOH

Code	Capacity
S5161-0-1000	1.0 L

**S5165-0 Sodium hydroxide, solution 0.02 mol/l (0.02 N)**

Synonyms:

- NaOH
- M = 40.00 g/mol
- CAS [1310-73-2]
- EC number: 215-185-5

**Physical data:**

- Density: 1.00 g/cm<sup>3</sup>
- pH (20 °C) ~ 12.5

**Safety:**

- EC Index no.: 011-002-00-6
- Poison class CH (Swiss): 4

HS-No: 2815 12 00 00

**Toxicological data:**

- WGK: 0

**Transport/storage:**

- LGK: 8 B

1ml = 0.00080 g NaOH

Code	Capacity
S5165-0-1000	1.0 L

**S5166-0 Sodium hydroxide, solution 0.025 mol/l (0.025 N)**

Synonyms:

- NaOH
- M = 40.00 g/mol
- CAS [1310-73-2]
- EC number: 215-185-5

**Toxicological data:**

- WGK: 0

**Transport/storage:**

- ADR: 8 C5 III UN 1824
- IMDG: 8 III UN 1824
- IATA/ICAO: 8 III UN 1824
- PAX: 819
- CAO: 821
- LGK: 8 B

HS-No: 2815 12 00 00

**Physical data:**

- Density: 1.00 g/cm<sup>3</sup>

**Safety:**

- EC Index no.: 011-002-00-6
- Poison class CH (Swiss): 4

1ml = 0.0010 g NaOH

Code	Capacity
S5166-0-1000	1.0 L

**S5166-0 Sodium hydroxide, solution 0.025 mol/l (0.025 N)**

Synonyms:

- NaOH  
- M = 40.00 g/mol  
- CAS [1310-73-2]  
- EC number: 215-185-5

**Physical data:**  
- Density: 1.00 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 0

**Safety:**  
- EC Index no.: 011-002-00-6  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- ADR: 8 C5 III UN 1824  
- IMDG: 8 III UN 1824  
- IATA/ICAO: 8 III UN 1824  
- PAX: 819  
- CAO: 821  
- LGK: 8 B

HS-No: 2815 12 00 00

Code	Capacity
S5166-0-1000	1.0 L

1ml = 0.0010 g NaOH

**S5167-0 Sodium hydroxide, solution 0.05 mol/l (0.05 N)**

Synonyms:

- NaOH  
- M = 40.00 g/mol  
- CAS [1310-73-2]  
- EC number: 215-185-5

**Physical data:**  
- Density: 1.003 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 0

**Safety:**  
- EC Index no.: 011-002-00-6  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- LGK: 8 B

1ml = 0.0020 g NaOH

HS-No: 2815 12 00 00

Code	Capacity
S5167-0-1000	1.0 L

**S5168-0 Sodium hydroxide, solution 0.1 mol/l (0.1 N)**

Synonyms:

- NaOH  
- M = 40.00 g/mol  
- CAS [1310-73-2]  
- EC number: 215-185-5

**Physical data:**  
- Density: 1.00 g/cm<sup>3</sup>  
- pH (20 °C) ~12.7

**Toxicological data:**  
- MAK: 2 mg/m<sup>3</sup>  
(pure substance)  
- WGK: 0

**Safety:**  
- EC Index no.: 011-002-00-6  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- LGK: 8 B

1ml = 0.00400 g NaOH

HS-No: 2815 12 00 00

Code	Capacity
S5168-0-1000	1.0 L

**S5171-0 Sodium hydroxide, solution 0.2 mol/l (0.2 N)**

Synonyms:

- NaOH  
- M = 40.00 g/mol  
- CAS [1310-73-2]  
- EC number: 215-185-5

**Physical data:**  
- Density: 1.01 g/cm<sup>3</sup>  
- pH (20 °C) ~ 13

**Toxicological data:**  
- MAK: 2 mg/m<sup>3</sup>  
(pure substance)  
- WGK: 0

**Safety:**  
- EC Index no.: 011-002-00-6  
- R: 36/38  
- S: 26-37  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- ADR: 8 C5 III UN 1824  
- IMDG: 8 III UN 1824  
- IATA/ICAO: 8 III UN 1824  
- PAX: 819  
- CAO: 813  
- LGK: 8 B

1ml = 0.008002 g NaOH

HS-No: 2815 12 00 00

Code	Capacity
S5171-0-1000	1.0 L

**S5172-0 Sodium hydroxide, solution 0.25 mol/l (0.25 N)**

Synonyms:

- NaOH  
- M = 40.00 g/mol  
- CAS [1310-73-2]  
- EC number: 215-185-5

**Physical data:**  
- Density: 1.01 g/cm<sup>3</sup>  
- pH (20 °C) ~ 13.5

**Toxicological data:**  
- MAK: 2 mg/m<sup>3</sup>  
(pure substance)  
- WGK: 0

**Safety:**  
- EC Index no.: 011-002-00-6  
- R: 36/38  
- S: 26-37  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- ADR: 8 C5 III UN 1824  
- IMDG: 8 III UN 1824  
- IATA/ICAO: 8 III UN 1824  
- PAX: 819  
- CAO: 813  
- LGK: 8 B

1ml = 0.0100 g NaOH

HS-No: 2815 12 00 00

Code	Capacity
S5172-0-1000	1.0 L

**S5175-0 Sodium hydroxide, solution 0.4 mol/l (0.4 N)**

Synonyms:

- NaOH  
- M = 40.00 g/mol  
- CAS [1310-73-2]  
- EC number: 215-185-5

**Physical data:**  
- Density: 1.02 g/cm<sup>3</sup>  
- pH (20 °C) ~ 13.5

**Toxicological data:**  
- WGK: 0

**Safety:**  
- EC Index no.: 011-002-00-6  
- R: 36/38  
- S: 26-37  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- ADR: 8 C5 III UN 1824  
- IMDG: 8 III UN 1824  
- IATA/ICAO: 8 III UN 1824  
- PAX: 819  
- CAO: 813  
- LGK: 8 B

1ml = 0.01600 g NaOH

HS-No: 2815 12 00 00

Code	Capacity
S5175-0-1000	1.0 L



**S5176-0 Sodium hydroxide, solution 0.5 mol/l (0.5 N)**

Synonyms:

- NaOH  
- M = 40.00 g/mol  
- CAS [1310-73-2]  
- EC number: 215-185-5

**Physical data:**  
- Density: 1.02 g/cm<sup>3</sup>  
- pH (20 °C) ~ 13.5

**Toxicological data:**  
- MAK: 2 mg/m<sup>3</sup>  
(pure substance)  
- WGK: 0

**Safety:**  
- EC Index no.: 011-002-00-6  
- R: 34  
- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- ADR: 8 C5 III UN 1824  
- IMDG: 8 III UN 1824  
- IATA/ICAO: 8 III UN 1824  
- PAX: 819  
- CAO: 813  
- LGK: 8 B

HS-No: 2815 12 00 00

Code	Capacity
S5176-0-1000	1.0 L

1ml = 0.02000 g NaOH

**S5179-0 Sodium hydroxide, solution 1 mol/l (1 N)**

Synonyms:

- NaOH  
- CAS [1310-73-2]  
- EC number: 215-185-5

**Physical data:**  
- Density: 1.05 g/cm<sup>3</sup>  
- pH (20 °C) ~ 13.7

**Toxicological data:**  
- MAK: 2 mg/m<sup>3</sup>  
(pure substance)  
- WGK: 1

**Safety:**  
- R: 34  
- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- ADR: 8 C5 III UN 1824  
- IMDG: 8 III UN 1824  
- IATA/ICAO: 8 III UN 1824  
- PAX: 819  
- CAO: 813  
- LGK: 8 B

HS-No: 2815 12 00 00

Code	Capacity
S5179-0-1000	1.0 L

1ml = 0.0400 g NaOH

**S5186-0 Sodium hydroxide, solution 2 mol/l (2 N)**

Synonyms:

- NaOH  
- M = 40.00 g/mol  
- CAS [1310-73-2]  
- EC number: 215-185-5

**Physical data:**  
- Density: 1.09 g/cm<sup>3</sup>  
- pH (20 °C) ~ 13.8

**Toxicological data:**  
- MAK: 2 mg/m<sup>3</sup>  
(pure substance)  
- WGK: 1

**Safety:**  
- EC Index no.: 011-002-00-6  
- R: 35  
- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 2

**Transport/storage:**  
- ADR: 8 C5 III UN 1824  
- IMDG: 8 III UN 1824  
- IATA/ICAO: 8 III UN 1824  
- PAX: 819  
- CAO: 813  
- LGK: 8 B

HS-No: 2815 12 00 00

Code	Capacity
S5186-0-1000	1.0 L

1ml = 0.080 g NaOH

**S5199-0 Sodium hydroxide, solution 5 mol/l (5 N)**

Synonyms:

- NaOH  
- M = 40.00 g/mol  
- CAS [1310-73-2]  
- EC number: 215-185-5

**Physical data:**  
- Density: ~1.18 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 1

**Safety:**  
- EC Index no.: 011-002-00-6  
- R: 35  
- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 2

**Transport/storage:**  
- ADR: 8 C5 III UN 1824  
- IMDG: 8 III UN 1824  
- IATA/ICAO: 8 III UN 1824  
- PAX: 819  
- CAO: 813  
- LGK: 8 B

HS-No: 2815 12 00 00

Code	Capacity
S5199-0-1000	1.0 L

1ml = 0.2000 g NaOH

**S5201-0 Sodium hydroxide, solution 6 mol/l (6 N)**

Synonyms:

- NaOH  
- M = 40.00 g/mol  
- CAS [1310-73-2]  
- EC number: 215-185-5

**Physical data:**  
- Density: ~1.23 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 1

**Safety:**  
- EC Index no.: 011-002-00-6  
- R: 35  
- S: 23.2-51-26-36/37/39-45  
- Poison class CH (Swiss): 2

**Transport/storage:**  
- ADR: 8 C5 III UN 1824  
- IMDG: 8 III UN 1824  
- IATA/ICAO: 8 III UN 1824  
- PAX: 819  
- CAO: 813  
- LGK: 8 B

HS-No: 2815 12 00 00

Code	Capacity
S5201-0-1000	1.0 L

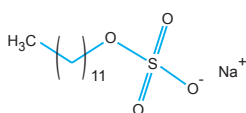
1ml = 0.24 g NaOH



## SODIUM LAURYL SULPHATE



Synonyms: Dodecyl sulfate sodium salt, SDS



- C<sub>12</sub>H<sub>25</sub>NaO<sub>4</sub>S
- M = 288.38 g/mol
- CAS [151-21-3]
- EC number: 205-788-1

- Solub. in water (20 °C): ~ 150 g/l
- Melting point: 204 - 207 °C
- Flash point: > 100 °C
- pH (10 g/l H<sub>2</sub>O, 20 °C) 7.5 - 9.0

### Safety:

- R: 22-36/38
- S: 46
- Poison class CH (Swiss): 4

### Physical data:

- Form: Powder
- Spec. density: 1.1 g/cm<sup>3</sup>
- Bulk density: ~ 490 - 560 kg/m<sup>3</sup>

### Toxicological data:

- LD 50 (oral, rat): 1288 mg/kg
- WGK: 2

### Transport/storage:

- LGK: 10-13

### S5200-3 Sodium lauryl sulphate, purity grade

Assay .....	min. 99.5 %	Chloride (Cl) .....	0.2 %
pH (1%, H <sub>2</sub> O) .....	6.0 - 7.5	Lead (Pb) .....	2 ppm
C <sub>12</sub> content .....	min. 99 %	A <sub>200</sub> (3%, H <sub>2</sub> O) .....	0.4
Water .....	1.0 %	A <sub>200</sub> (3%, H <sub>2</sub> O) .....	0.1
Phosphate (PO <sub>4</sub> ) .....	1 ppm		

HS-No: 2920 90 10 90

Code	Capacity
S5200-3-0100	100 g
S5200-3-0500	500 g
S5200-3-1000	1 kg

## SODIUM HYPOCHLORITE SOLUTION 5%



Synonyms: Clorox

- NaClO
- M = 74.44 g/mol
- CAS [7681-52-9]
- EC number: 231-668-3

### Toxicological data:

- WGK: 2

### Transport/storage:

- ADR: 8 C9 III UN 1791
- IMDG: 8 III UN 1791
- IATA/ICAO: 8 III UN 1791
- PAX: 819
- CAO: 821
- LGK: 8

### Physical data:

- Form: Liquid
- Density: 1.094 g/cm<sup>3</sup>

### Safety:

- EC Index no.: 017-011-00-1
- R: 31-36/38
- S: 23.2-51-26-28.1-36/37/39-45-50-1
- Poison class CH (Swiss): 3

### S5203-3 Sodium hypochlorite 5%, extra pure

Assay (Iodometric) ..... approx. 5 %

HS-No: 2828 90 00 00

Code	Capacity
S5203-3-1000	1.0 L
S5203-3-4000	4.0 L

## SODIUM HYPOCHLORITE 10%



Synonyms: Clorox

- NaClO
- ClNaO
- M = 74.44 g/mol
- CAS [7681-52-9]
- EC number: 231-853-9

- Density: 1.22 - 1.25 g/cm<sup>3</sup>

### Toxicological data:

- WGK: 2

### Transport/storage:

- ADR: 8 C9 III UN 1791
- IMDG: 8 III UN 1791
- IATA/ICAO: 8 III UN 1791
- PAX: 819
- CAO: 821
- LGK: 8

### Physical data:

- Form: Liquid

### Safety:

- EC Index no.: 017-011-00-1
- R: 15-25-34
- S: 26-28.1-36/37/39-45-50-1

### S5204-3 Sodium hypochlorite 10%, extra pure

Assay (Iodometric) ..... approx. 10 %

HS-No: 2828 90 00 00

Code	Capacity
S5204-3-4000	4.0 L

## SODIUM IODIDE

Synonyms: NaI

- NaI
- M = 149.89 g/mol
- CAS [7681-82-5]
- EC number: 231-679-3

- Solub. in water (20 °C): soluble
- Melting point: 662 °C
- Boiling point: 1304 °C
- Vapour pressure: (767 °C) 1.3 hPa
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 6 - 9

### Safety:

- Poison class CH (Swiss): 4

### Physical data:

- Form: Powder
- Spec. density: 3.67 g/cm<sup>3</sup>
- Bulk density: ~ 1500 - 2000 kg/m<sup>3</sup>

### Toxicological data:

- LD 50 (oral, rat): 4340 mg/kg
- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### S5211-1 Sodium iodide, reagent grade

Assay (argentometric) .....	min. 99.5 %	Calcium (Ca) .....	max. 0.001 %
Insoluble in water .....	max. 0.01 %	Copper (Cu) .....	max. 0.0001 %
pH (5%, H <sub>2</sub> O) .....	6.0 - 9.0	Heavy metals (as Pb) .....	max. 0.0005 %
Chlorides, bromides (as Cl) .....	max. 0.01 %	Iron (Fe) .....	max. 0.0005 %
Iodates (IO <sub>3</sub> ) .....	max. 0.0002 %	Lead (Pb) .....	max. 0.0001 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %	Nickel (Ni) .....	max. 0.00001 %
Total N .....	max. 0.002 %	Potassium (K) .....	max. 0.01 %
Barium (Ba) .....	max. 0.002 %	Loss on drying (105 °C) .....	max. 0.5 %

HS-No: 2827 60 00 90

Code	Capacity
S5211-1-0500	500 g

## SODIUM HYPOPHOSPHITE MONOHYDRATE

### Synonyms:

- NaH<sub>2</sub>PO<sub>2</sub>·H<sub>2</sub>O
- M = 105.99 g/mol
- CAS [10039-56-2]
- EC number: 231-669-9

### Physical data:

- Form: Crystals
- Bulk density: ~ 800 - 1000 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: > 90 °C (decomposes)
- pH (100 g/l H<sub>2</sub>O, 20 °C) 5.5 - 7.0

### Toxicological data:

- WGK: 3\*

### Safety:

- Poison class CH (Swiss): 4

### Transport/storage:

- LGK: 10-13

### S5220-1 Sodium hypophosphite monohydrate, reagent grade

HS-No: 2835 10 00 00

Assay (bromometric) .....	min. 99 %	Sulfates (SO <sub>4</sub> ) .....	max. 0.02 %
Appearance of solution .....	passes test	Arsenic (As) .....	max. 0.0002 %
Acidly reacting impurities .....	passes test	Calcium (Ca) .....	max. 0.02 %
Chlorides (Cl) .....	max. 0.02 %	Heavy metals (as Pb) .....	max. 0.0005 %
Phosphates, phosphates .....	passes test	Iron (Fe) .....	max. 0.0005 %

Code	Capacity
S5220-1-0500	500 g

## SODIUM PERSULFATE



### Synonyms: Sodium peroxodisulfate, Peroxydisulfuric acid disodium salt

- Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>
- M = 238.09 g/mol
- CAS [7775-27-1]
- EC number: 231-892-1

### Physical data:

- Spec. density: 1.10 g/cm<sup>3</sup>
- Bulk density: ~ 1150 kg/m<sup>3</sup>
- Solub. in water (20 °C): 545 g/l
- pH (100 g/l H<sub>2</sub>O, 20 °C) 3.5 - 3.8

### Toxicological data:

- LD 50 (oral, rat): 920 mg/kg
- WGK: 1

### Safety:

- R: 8-22-36/37/38-42/43
- S: 22-24-26-37-45
- Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 5.1 O2 III UN 1505
- IMDG: 5.1 III UN 1505
- IATA/ICAO: 5.1 III UN 1505
- PAX: 516
- CAO: 518
- LGK: 5.1B
- Disposal: 22

### S5230-1 Sodium persulfate, reagent grade

HS-No: 2833 40 00 10

Assay (Iodometric) .....	min. 98.0%	Iron (Fe) .....	max. 0.0003%
Chlorides (Cl) .....	max. 0.005%	Identity .....	passes test
Heavy metal (as Pb) .....	max. 0.003%	Appearance of solution (10 °C; water)	passes test
Ammonium (NH <sub>4</sub> ) .....	max. 0.05%		

Code	Capacity
S5230-1-0500	500 g

### S5230-3 Sodium persulfate, extra pure

HS-No: 2833 40 00 10

Assay (iodometric) .....	min. 98 %	Copper (Cu) .....	max. 0.002 %
Insoluble in water .....	max. 0.05 %	Iron (Fe) .....	max. 0.002 %
Chlorides compounds (as Cl) .....	max. 0.05 %	Lead (Pb) .....	max. 0.002 %
Nitrogen compounds (as N) .....	max. 0.05 %	Magnesium (Mg) .....	max. 0.01 %
Calcium (Ca) .....	max. 0.01 %	Nickel (Ni) .....	max. 0.001 %

Code	Capacity
S5230-3-1000	1 kg

## SODIUM METAPERIODATE



### Synonyms: Sodium periodate

- NaIO<sub>4</sub>
- M = 213.89 g/mol
- CAS [7790-28-5]
- EC number: 232-197-6

- Solub. in water (20 °C): 91 g/l
- Melting point: 300 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 5.2

### Physical data:

- Form: Crystals
- Spec. density: 3.87 g/cm<sup>3</sup>
- Bulk density: 2000 - 2400 kg/m<sup>3</sup>

### Toxicological data:

- WGK: 1

### Safety:

- R: 8
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 5.1 O2 I UN 1479
- IMDG: 5.1 I UN 1479
- IATA/ICAO: 5.1 I UN 1479
- PAX: 509
- CAO: 512
- LGK: 5.1 A
- Disposal: 22

### S5233-1 Sodium metaperiodate, reagent grade

HS-No: 2829 90 80 00

Assay (argentometric) .....	99.8 - 100.3 %	Nitrates (NO <sub>3</sub> ) .....	max. 0.01 %
pH (5%, H <sub>2</sub> O) .....	4.0 - 4.5	Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %
Iodides (I) .....	max. 0.001 %	Manganese (Mn) .....	max. 0.0001 %
Other halogens (as Cl) .....	max. 0.01 %		

Code	Capacity
S5233-1-0101	100 g
S5233-1-0251	250 g

## SODIUM MOLYBDATE DIHYDRATE

### Synonyms:

- Na<sub>2</sub>MoO<sub>4</sub>·2H<sub>2</sub>O
- M = 241.95 g/mol
- CAS [10102-40-6]
- EC number: 231-551-7

- Spec. density: 3.6 g/cm<sup>3</sup>
- Bulk density: ~ 1000 kg/m<sup>3</sup>
- Solub. in water (25 °C): 840 g/l
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 7.9 - 10.3

### Physical data:

- Form: Crystals

### Toxicological data:

- LD 50 (oral, rat): 98 mg/kg
- MAK: 5 mg/m<sup>3</sup>

- WGK: 1

### Safety:

- Poison class CH (Swiss): 4

### Transport/storage:

- LGK: 10-13
- Disposal: 15

**S5237-3 Sodium molybdate dihydrate, extra pure**

HS-No: 2814 70 00 00

Assay .....	min. 99 %	Heavy metals (as Pb) .....	max. 0.001 %
Appearance of solution .....	passes test	Iron (Fe) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.005 %	Lead (Pb) .....	max. 0.001 %
Phosphates, arseniates, silicates (as PO <sub>4</sub> ) .....	max. 0.05 %	Loss on drying (140 °C, 3h) .....	14 - 16 %
Silicates (as PO <sub>4</sub> ) .....	max. 0.001 %	Residual solvents (Ph Eur/USP) .....	excluded by production process
Ammonium (NH <sub>4</sub> ) .....	max. 0.001 %		

Code	Capacity
S5237-3-1000	1 kg

**SODIUM NITRATE**

Synonyms: Nitric acid sodium salt

- NaNO<sub>3</sub>
- M = 84.99 g/mol
- CAS [7631-99-4]
- EC number: 231-554-3
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5.5 - 8.3

**Physical data:**

- Spec. density: 2.26 g/cm<sup>3</sup>
- Bulk density: ~ 1200 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: 308 °C

**Toxicological data:**

- LD 50 (oral, rat): 1267 mg/kg
- WGK: 1

**Safety:**

- R: 8-22-36
- S: 22-24-41-46
- Poison class CH (Swiss): 4

**Transport/storage:**

- ADR: 5.1 O2 III UN 1498
- IMDG: 5.1 III UN 1498
- IATA/ICAO: 5.1 III UN 1498
- PAX: 516
- CAO: 518
- LGK: 5.1 B
- Disposal: 14

**S5248-1 Sodium nitrate, reagent grade**

HS-No: 3102 50 90 00

Assay (acidimetric) .....	min. 99.5 %	Cadmium (Cd) .....	max. 0.0005 %
Insoluble in water .....	max. 0.005 %	Calcium (Ca) .....	max. 0.002 %
pH (5%, H <sub>2</sub> O) .....	5.5 - 8.0	Copper (Cu) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.0005 %	Heavy metals (as Pb) .....	max. 0.0005 %
Iodates (IO <sub>3</sub> ) .....	max. 0.0005 %	Iron (Fe) .....	max. 0.0002 %
Nitrites (NO <sub>2</sub> ) .....	max. 0.001 %	Lead (Pb) .....	max. 0.0005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0002 %	Magnesium (Mg) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.003 %	Potassium (K) .....	max. 0.005 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.002 %	Zinc (Zn) .....	max. 0.0005 %

Code	Capacity
S5248-1-1000	1 kg

**SODIUM NITRITE**

Synonyms:

- NaNO<sub>2</sub>
- M = 69.00 g/mol
- CAS [7632-00-0]
- EC number: 231-555-9
- Ignition temp.: 489 °C
- pH (100 g/l H<sub>2</sub>O, 20 °C) 9

**Physical data:**

- Spec. density: 2.1 g/cm<sup>3</sup>
- Bulk density: ~ 1200 kg/m<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: 280 °C (decomposes)

**Toxicological data:**

- LD 50 (oral, rat): 85 mg/kg
- WGK: 2

**Safety:**

- EC Index no.: 007-010-00-4
- R: 8-25-50

- S: 45-61
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 5.1 OT2 III UN 1500
- IMDG: 5.1 III UN 1500
- IATA/ICAO: 5.1 III UN 1500
- PAX: 516
- CAO: 518
- LGK: 5.1 B
- Disposal: 28

**S5252-1 Sodium nitrite, reagent grade**

HS-No: 2834 10 00 00

Assay (iodometric) .....	min. 99 %	Calcium (Ca) .....	max. 0.002 %
Insoluble in water .....	max. 0.01 %	Heavy metals (as Pb) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.005 %	Iron (Fe) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Magnesium (Mg) .....	max. 0.005 %

Code	Capacity
S5252-1-1000	1 kg

**SODIUM SILICATE**

Synonyms:

- Na<sub>2</sub>SiO<sub>3</sub>
- M = 122.07 g/mol
- CAS [1344-09-8]
- EC number: 215-687-4
- Solub. in water (20 °C): miscible
- pH (50 g/l H<sub>2</sub>O, 20 °C) 11 - 11.5

**Physical data:**

- Density: 1.37 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 1

**Safety:**

- R: 36/37/38
- S: 26-37

**Transport/storage:**

- LGK: 10-13

**S5272-1 Sodium silicate, reagent grade**

HS-No: 2839 10 00 90

Total Solid Content .....	37.8 - 39.5 % wt	Alkaline (as Na <sub>2</sub> O) .....	8.8 - 9.4 % wt
Special Gravity (at 20 °C, O, ° Be') ..	41.1 - 44.2	Silica (as SiO <sub>2</sub> ) .....	29.0 - 30.1 % wt
Weight Ratio (SiO <sub>2</sub> : Na <sub>2</sub> O) .....	3.20 - 3.30	Viscosity (at 20 °C), cP .....	400 - 1200

Code	Capacity
S5272-1-1000	1 kg

## SODIUM SULFATE ANHYDROUS

Synonyms: Sulfuric acid sodium salt

- Na<sub>2</sub>SO<sub>4</sub>
- M = 142.04 g/mol
- CAS [7757-82-6]
- EC number: 231-820-9
- Solub. in water (20 °C): 160 g/l
- Melting point: 888 °C
- Boiling point: > 890 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5 - 8

**Safety:**  
- Poison class CH (Swiss): 5

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 14

- Physical data:**
- Spec. density: 2.70 g/cm<sup>3</sup>
  - Bulk density: ~ 1400 - 1600 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 1

### S5281-1 Sodium sulfate anhydrous, reagent grade

HS-No: 2833 11 00 00

Assay .....	min. 99 %	Calcium (Ca) .....	max. 0.005 %
Free acid (as H <sub>2</sub> SO <sub>4</sub> ) .....	max. 0.05 %	Heavy metals (as Pb) .....	max. 0.0005 %
Free alkali (as NaOH) .....	max. 0.03 %	Iron (Fe) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	5.2 - 8.0	Magnesium (Mg) .....	max. 0.001 %
Total N .....	max. 0.0005 %	Potassium (K) .....	max. 0.01 %
Chlorides (Cl) .....	max. 0.001 %	Zinc (Zn) .....	max. 0.01 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.002 %	Loss on drying (800 °C) .....	max. 0.5 %
Arsenic (As) .....	max. 0.0001 %		

Code	Capacity
S5281-1-0500	500 g
S5281-1-1000	1 kg

### S5281-3 Sodium sulfate anhydrous, extra pure

HS-No: 2833 11 00 00

Assay .....	min. 99 %	Calcium (Ca) .....	max. 0.045 %
pH (5%, H <sub>2</sub> O) .....	5.5 - 7.5	Heavy metals (as Pb) .....	max. 0.0045 %
Free acid (as H <sub>2</sub> SO <sub>4</sub> ) .....	max. 0.05 %	Iron (Fe) .....	max. 0.009 %
Free alkali (as NaOH) .....	max. 0.04 %	Magnesium (Mg) .....	max. 0.02 %
Chlorides (Cl) .....	max. 0.05 %	Zinc (Zn) .....	max. 0.01 %
Arsenic (As) .....	max. 0.005 %	Loss on drying (130 °C) .....	max. 0.5 %

Code	Capacity
S5281-3-1000	1 kg

### S5281-11 Sodium sulfate anhydrous, Pesticide grade

HS-No: 2833 11 00 00

See specification in Solvents Specification - 30

Code	Capacity
S5281-11-0500	500 g
S5281-11-1000	1 Kg

## SODIUM SULFITE

Synonyms:

- Na<sub>2</sub>SO<sub>3</sub>
- M = 126.04 g/mol
- CAS [7757-83-7]
- EC number: 231-821-4
- Solub. in water (20 °C): 220 g/l
- Melting point: > 500 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 8.8 - 10

**Safety:**  
- Poison class CH (Swiss): 3

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 28

- Physical data:**
- Spec. density: 2.63 g/cm<sup>3</sup>
  - Bulk density: ~ 1480 kg/m<sup>3</sup>

**Toxicological data:**  
- LD 50 (oral, rat): 2610 mg/kg  
- WGK: 1

### S5303-1 Sodium sulfite, reagent grade

HS-No: 2832 10 00 00

Assay (Iodometric) .....	min. 98 %	Copper (Cu) .....	max. 0.0005 %
Insoluble in water .....	max. 0.005 %	Heavy Metals (as Pb) .....	max. 0.001 %
Free Acid .....	passes test	Iron (Fe) .....	max. 0.001 %
Free Alkali (a Na <sub>2</sub> CO <sub>3</sub> ) .....	max. 0.15 %	Lead (Pb) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.02 %	Zinc (Zn) .....	max. 0.001 %
Arsenic (As) .....	max. 0.0001 %		

Code	Capacity
S5303-1-0500	500 g
S5303-1-1000	1 kg

## SODIUM THIOSULFATE ANHYDROUS

Synonyms: Antichlor

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>
- M = 158.10 g/mol
- CAS [77772-98-7]
- EC number: 231-867-5
- Spec. density: 1.667 g/cm<sup>3</sup>
- Bulk density: ~ 1350 kg/m<sup>3</sup>
- Solub. in water (20 °C): 500 g/l
- Melting point: 48 °C
- Boiling point: 100 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 6.0 - 8.5

**Toxicological data:**  
- WGK: 1

**Safety:**  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- LGK: 10-13

### S5314-1 Sodium thiosulfate anhydrous, reagent grade

HS-No: 2832 30 00 00

Assay (Iodometri, on dried substance) .....	min. 98.0 %	Copper (Cu) .....	max. 0.001 %
Insoluble in water .....	max. 0.01 %	Heavy metals (as Pb) .....	max. 0.005 %
pH (sol 5%, H <sub>2</sub> O) .....	6.0 - 8.5	Iron (Fe) .....	max. 0.005 %
Chlorides (Cl) .....	max. 0.15 %	Lead (Pb) .....	max. 0.001 %
Sulfates and sulfites (as SO <sub>4</sub> ) .....	max. 0.2 %	Nickel (Ni) .....	max. 0.001 %
Sulfides (S) .....	max. 0.0005 %	Potassium (K) .....	max. 0.01 %
Calcium (Ca) .....	max. 0.004 %	Zinc (Zn) .....	max. 0.001 %
Cadmium (Cd) .....	max. 0.001 %	Loss on drying .....	max. 0.5 %
Cobalt (Co) .....	max. 0.001 %		

Code	Capacity
S5314-1-0500	500 g

## SODIUM THIOSULFATE PENTAHYDRATE

### Synonyms:

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O  
 - M = 248.18 g/mol  
 - CAS [10102-17-7]  
 - EC number: 231-867-5

- Solub. in water (20 °C): 680 g/l  
 - Melting point: 48.5 °C  
 - pH (100 g/l H<sub>2</sub>O, 20 °C) 6.0 - 8.4

### Safety:

- Poison class CH (Swiss): 4

### Physical data:

- Spec. density: 1.73 g/cm<sup>3</sup>  
 - Bulk density: ~ 1000 kg/m

### Toxicological data:

- WGK: 1

### Transport/storage:

- LGK: 10-13  
 - Disposal: 28

### S5316-1 Sodium thiosulfate pentahydrate, reagent grade

HS-No: 2832 30 00 00

Assay (Iodometric) .....	min. 99.5 %	Calcium (Ca) .....	max. 0.002 %
Insoluble in water .....	max. 0.005 %	Copper (Cu) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	6.0 - 8.4	Iron (Fe) .....	max. 0.0005 %
Total N .....	max. 0.002 %	Lead (Pb) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.008 %	Magnesium (Mg) .....	max. 0.001 %
Sulfates, sulfites (as SO <sub>4</sub> ) .....	max. 0.1 %	Potassium (K) .....	max. 0.001 %
Sulfides (S) .....	max. 0.0001 %		

Code	Capacity
S5316-1-0500	500 g
S5316-1-1000	1 kg

## SODIUM THIOSULFATE, VOLUMETRIC SOLUTIONS

### S5320-0 Sodium thiosulfate, solution 0.002 mol/l (0.02 N)

#### Synonyms: Antichlor

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O  
 - M = 248.18 g/mol  
 - CAS [10102-17-7]  
 - EC number: 231-867-5

### Physical data:

- Density: 1.00 g/cm<sup>3</sup>

### Safety:

- Poison class CH (Swiss): F

HS-No: 2832 30 00 00

### Toxicological data:

- WGK: 0

### Transport/storage:

- LGK: 10-13

Code	Capacity
S5320-0-2501	2.5 L

1ml = 0.00496 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O

### S5321-0 Sodium thiosulfate, solution 0.002 mol/l (0.002 N)

#### Synonyms: Antichlor

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O  
 - M = 248.18 g/mol  
 - CAS [10102-17-7]  
 - EC number: 231-867-5

### Physical data:

- Density: 1.00 g/cm<sup>3</sup>

### Safety:

- Poison class CH (Swiss): F

HS-No: 2832 30 00 00

### Toxicological data:

- WGK: 0

### Transport/storage:

- LGK: 10-13

Code	Capacity
S5321-0-1000	1.0 L

1ml = 0.0004964 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O

### S5322-0 Sodium thiosulfate, solution 0.01 mol/l (0.01 N)

#### Synonyms: Antichlor

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O  
 - M = 248.18 g/mol  
 - CAS [10102-17-7]  
 - EC number: 231-867-5

### Physical data:

- Density: 1.00 g/cm<sup>3</sup>

### Safety:

- Poison class CH (Swiss): F

HS-No: 2832 30 00 00

### Toxicological data:

- WGK: 0

### Transport/storage:

- LGK: 10-13

Code	Capacity
S5322-0-1000	1.0 L

1ml = 0.002482 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O

### S5323-0 Sodium thiosulfate, solution 0.05 mol/l (0.05 N)

#### Synonyms: Antichlor

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O  
 - M = 248.18 g/mol  
 - CAS [10102-17-7]  
 - EC number: 231-867-5

### Physical data:

- Density: 1.00 g/cm<sup>3</sup>

### Safety:

- Poison class CH (Swiss): F

HS-No: 2832 30 00 00

### Toxicological data:

- WGK: 0

### Transport/storage:

- LGK: 10-13

Code	Capacity
S5323-0-1000	1.0 L

1ml = 0.01241 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O

### S5326-0 Sodium thiosulfate, solution 0.1 mol/l (0.1 N)

#### Synonyms: Antichlor

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O  
 - M = 248.18 g/mol  
 - CAS [10102-17-7]  
 - EC number: 231-867-5

### Physical data:

- Density: 1.01 g/cm<sup>3</sup>  
 - pH (20 °C) ~ 9 - 10

### Safety:

- Poison class CH (Swiss): F

HS-No: 2832 30 00 00

### Toxicological data:

- WGK: 1

### Transport/storage:

- LGK: 10-13

Code	Capacity
S5326-0-1000	1.0 L

1ml = 0.0248 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O

### S5329-0 Sodium thiosulfate, solution 0.282 mol/l (0.282 N)

Synonyms: Antichlor

HS-No: 2832 30 00 00

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O
- M = 248.18 g/mol
- CAS [10102-17-7]
- EC number: 231-867-5

**Physical data:**  
- Density: 1.03 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 1

**Safety:**  
- Poison class CH (Swiss): F

**Transport/storage:**  
- LGK: 10-13

Code	Capacity
S5329-0-1000	1.0 L

1ml = 0.06999 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O

### S5332-0 Sodium thiosulfate, solution 0.5 mol/l (0.5 N)

Synonyms: Antichlor

HS-No: 2832 30 00 00

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O
- M = 248.18 g/mol
- CAS [10102-17-7]
- EC number: 231-867-5

**Physical data:**  
- Density: 1.06 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 1

**Safety:**  
- Poison class CH (Swiss): F

**Transport/storage:**  
- LGK: 10-13

Code	Capacity
S5332-0-1000	1.0 L

1ml = 0.1241 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O

### S5333-0 Sodium thiosulfate, solution 1 mol/l (1 N)

Synonyms: Antichlor

HS-No: 2832 30 00 00

- Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O
- M = 248.18 g/mol
- CAS [10102-17-7]
- EC number: 231-867-5

**Physical data:**  
- Density: 1.12 g/cm<sup>3</sup>

**Toxicological data:**  
- WGK: 1

**Safety:**  
- Poison class CH (Swiss): F

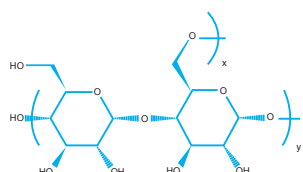
**Transport/storage:**  
- LGK: 10-13

Code	Capacity
S5333-0-1000	1.0 L

1ml = 0.2482 g Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O

## STARCH

Synonyms: Amylum, Potato starch



- (C<sub>6</sub>H<sub>10</sub>O<sub>5</sub>)<sub>n</sub>
- CAS [9005-84-9]
- EC number: 232-686-4

**Physical data:**  
- Bulk density: ~ 300 kg/m<sup>3</sup>

- Solub. in water (90 °C): 50 g/l
- pH (20 g/l H<sub>2</sub>O, 25 °C) 6.0 - 7.5

**Toxicological data:**  
- WGK: 0

**Safety:**  
- Poison class CH (Swiss): F

**Transport/storage:**  
- LGK: 10-13

### S7003-1 Starch soluble, reagent grade

HS-No: 3505 10 90 00

pH (2%, H <sub>2</sub> O) .....	5.0 - 7.0
Sensitivity to iodine .....	passes test
Loss on drying .....	10 - 20 %
Sulfated ash .....	0.1 - 1.0 %

Code	Capacity
S7003-1-0500	500 g

## STRONTIUM CHLORIDE HEXAHYDRATE

Synonyms:

- SrCl<sub>2</sub>·6H<sub>2</sub>O
- M = 266.62 g/mol
- CAS [10025-70-4]
- EC number: 233-971-6

**Physical data:**  
- Spec. density: 1.95 g/cm<sup>3</sup> (20 °C)  
- Solub. in water 1062 g/l (20 °C)

- pH value ~ 5 - 7 (50 g/l, H<sub>2</sub>O, 20 °C)
  - Melting point: 61 °C
  - Bulk density: ~ 1050 kg/m<sup>3</sup>
  - Boiling point: 100 °C
  - Water absorption hygroscopic
- LD 50 (oral, rat) 2250 mg/kg (anhydrous substance)

**Safety:**  
- Poison class CH 3

**Toxicological data:**  
- WGK: 1

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 14

### S7005-1 Strontium chloride hexahydrate, reagent grade

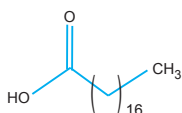
Assay .....	min. 99.5 %	Calcium .....	max. 0.03 %
pH value .....	4.6 - 6.5	Iron (Fe) .....	max. 0.0001 %
Clarity of solution .....	passes test	Barium (Ba) .....	max. 0.02 %
Insoluble matter in water .....	max. 0.003 %	Heavy metals (as Pb) .....	max. 0.0002 %
Nitrate (NO <sub>3</sub> ) .....	passes test	Alkali metals and magnesium (as sulfate) .....	max. 0.01 %

Code	Capacity
S7005-1-0100	100 g
S7005-1-0500	500 g



## STERIC ACID

Synonyms: Octadecanoic acid



- C<sub>18</sub>H<sub>36</sub>O<sub>2</sub>
- M = 284.47 g/mol
- CAS [57-11-4]
- EC number: 200-313-4

**Physical data:**

- Spec. density: 0.94 g/cm<sup>3</sup>
- Bulk density: ~ 400 - 500 kg/m<sup>3</sup>

- Solub. in water (20 °C): insoluble
- Melting point: 67 °C
- Boiling point: (19.95 hPa) 232 °C
- Flash point: 196 °C
- Ignition temp.: 395 °C
- Vapour pressure: (148 °C) 0.13 hPa

**Toxicological data:**

- WGK: 0

**Safety:**

- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13
- Disposal: 4

### S7007-3 Stearic acid, extra pure

HS-No: 2915 70 25 00

**Total content**

(plamitic + stearic acid, G.C) .....	min. 90 %
Appearance (Ph Eur) .....	passes test
Palitic acid (G.C.) .....	min. 40 %
Stearic acid (G.C.) .....	min. 40 %
Mineral acids .....	passes test
Acidity index .....	194 - 212

Iodine index .....	max. 4
Heavy metals (as Pb) .....	max. 0.001 %
Nickel (Ni) .....	max. 0.0001 %
Neutral fat, mineral fat .....	passes test
Organic volatile impurities (NF) .....	passes test
Sulfated ash (600 °C) .....	max. 0.1 %

Code	Capacity
S7007-3-0500	500 g

## SULPHURIC ACID 10%



Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>
- M = 98.08 g/mol
- CAS [7664-93-9]
- EC number: 231-639-5

**Physical data:**

- Form: Liquid

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 016-020-00-8
- R: 36/38
- S: 26-37
- Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- PAX: 809
- CAO: 813
- LGK: 8
- Disposal: 12

**Special regulations:**

- Drug precursor, cat 3

**Applications:** Analytical chemistry, laboratory reagent, neutralising agent

### S7010-1 Sulphuric acid 10%, reagent grade

HS-No: 2837 20 00 00

Assay .....	min. 10 %
Colour .....	max. 10 Hazen
Chloride (Cl) .....	max. 0.1 ppm
Nitrate (NO <sub>3</sub> ) .....	max. 0.2 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 0.5 ppm
Arsenic and Antimony (as As) .....	max. 0.01 ppm
Silver (Ag) .....	max. 0.02 ppm
Aluminium (Al) .....	max. 0.05 ppm
Gold (Au) .....	max. 0.1 ppm
Boron (B) .....	max. 0.05 ppm
Barium (Ba) .....	max. 0.05 ppm
Beryllium (Be) .....	max. 0.02 ppm
Bismuth (Bi) .....	max. 0.1 ppm
Calcium (Ca) .....	max. 0.2 ppm
Cadmium (Cd) .....	max. 0.05 ppm
Cobalt (Co) .....	max. 0.02 ppm
Chromium (Cr) .....	max. 0.02 ppm
Copper (Cu) .....	max. 0.01 ppm
Iron (Fe) .....	max. 0.1 ppm
Gallium (Ga) .....	max. 0.02 ppm
Germanium (Ge) .....	max. 0.1 ppm

Indium (In) .....	max. 0.02 ppm
Potassium (K) .....	max. 0.1 ppm
Lithium (Li) .....	max. 0.02 ppm
Magnesium (Mg) .....	max. 0.1 ppm
Manganese (Mn) .....	max. 0.02 ppm
Molybdenum (Mo) .....	max. 0.05 ppm
Ammonium (NH <sub>4</sub> ) .....	max. 2 ppm
Sodium (Na) .....	max. 0.2 ppm
Nickel (Ni) .....	max. 0.02 ppm
Lead (Pb) .....	max. 0.05 ppm
Platinum (Pt) .....	max. 0.2 ppm
Selen (Se) .....	max. 0.1 ppm
Tin (Sn) .....	max. 0.1 ppm
Strontium (Sr) .....	max. 0.05 ppm
Titanium (Ti) .....	max. 0.1 ppm
Thallium (Tl) .....	max. 0.05 ppm
Vanadium (V) .....	max. 0.05 ppm
Zinc (Zn) .....	max. 0.1 ppm
Zirconium (Zr) .....	max. 0.1 ppm
KMnO <sub>4</sub> reducing substances (as SO <sub>2</sub> ) .....	max. 2 ppm
Residue after ignition .....	max. 3 ppm

Code	Capacity
S7010-1-2501	2.5 L

**S7020-1 Sulphuric acid 20%, reagent grade**

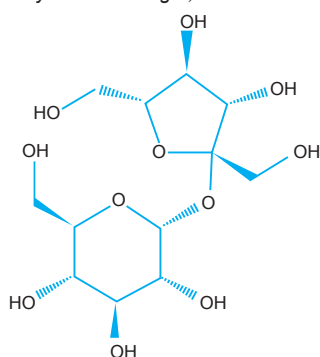
HS-No: 2837 20 00 00

Assay .....	min. 20 %	Indium (In) .....	max. 0.02 ppm
Colour .....	max. 10 Hazen	Potassium (K) .....	max. 0.1 ppm
Chloride (Cl) .....	max. 0.1 ppm	Lithium (Li) .....	max. 0.02 ppm
Nitrate (NO <sub>3</sub> ) .....	max. 0.2 ppm	Magnesium (Mg) .....	max. 0.1 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 0.5 ppm	Manganese (Mn) .....	max. 0.02 ppm
Arsenic and Antimony (as As) .....	max. 0.01 ppm	Molybdenum (Mo) .....	max. 0.05 ppm
Silver (Ag) .....	max. 0.02 ppm	Ammonium (NH <sub>4</sub> ) .....	max. 2 ppm
Aluminium (Al) .....	max. 0.05 ppm	Sodium (Na) .....	max. 0.2 ppm
Gold (Au) .....	max. 0.1 ppm	Nickel (Ni) .....	max. 0.02 ppm
Boron (B) .....	max. 0.05 ppm	Lead (Pb) .....	max. 0.05 ppm
Barium (Ba) .....	max. 0.05 ppm	Platinum (Pt) .....	max. 0.2 ppm
Beryllium (Be) .....	max. 0.02 ppm	Selen (Se) .....	max. 0.1 ppm
Bismuth (Bi) .....	max. 0.1 ppm	Tin (Sn) .....	max. 0.1 ppm
Calcium (Ca) .....	max. 0.2 ppm	Strontium (Sr) .....	max. 0.05 ppm
Cadmium (Cd) .....	max. 0.05 ppm	Titanium (Ti) .....	max. 0.1 ppm
Cobalt (Co) .....	max. 0.02 ppm	Thallium (Tl) .....	max. 0.05 ppm
Chromium (Cr) .....	max. 0.02 ppm	Vanadium (V) .....	max. 0.05 ppm
Copper (Cu) .....	max. 0.01 ppm	Zinc (Zn) .....	max. 0.1 ppm
Iron (Fe) .....	max. 0.1 ppm	Zirconium (Zr) .....	max. 0.1 ppm
Gallium (Ga) .....	max. 0.02 ppm	KMnO <sub>4</sub> reducing substances (as SO <sub>2</sub> )	max. 2 ppm
Germanium (Ge) .....	max. 0.1 ppm	Residue after ignition .....	max. 3 ppm

Code	Capacity
S7020-1-2501	2.5 L

**D(+)-SUCROSE**

Synonyms: Cane sugar, Saccharose



- C<sub>12</sub>H<sub>22</sub>O<sub>11</sub>  
 - M = 342.30 g/mol  
 - CAS [57-50-1]  
 - EC number: 200-334-9

**Physical data:**  
 - Bulk density: ~ 800 - 950 kg/m<sup>3</sup>  
 - Solub. in water (20 °C): freely soluble  
 - Melting point: 169 - 170 °C  
 - pH (100 g/l H<sub>2</sub>O, 20 °C) ~ 7

**Toxicological data:**  
 - LD 50 (oral, rat): 29700 mg/kg  
 - WGK: 0

**Safety:**  
 - Poison class CH (Swiss): F

Transport/storage:  
 - LGK: 10-13

S

**S7030-1 D(+)-Sucrose, reagent grade**

HS-No: 1701 99 10 80

Special rotation (@25 °C) .....	+66.3 - +66.8°	Glucose, invert sugar .....	passes test
Identity IR spectrum .....	passes test	Iron (Fe) .....	max. 0.001 %
Acidity of Alkalinity reacting impurities .....	passes test	Sulfite (SO <sub>3</sub> ) .....	max. 0.001 %
Barium (Ba) .....	passes test	Sulfated ash .....	max. 0.01 %
Dextines .....	passes test	TCL-test .....	passes test
Dye stuffs .....	passes test	Water .....	max. 0.01 %

Code	Capacity
S7030-1-0500	500 g

**SULPHAMIC ACID**

Synonyms: Amidosulfonic acid, Sulfaminic acid, Sulfamidic acid, Sulfamic acid, Aminosulfonic acid

- NH<sub>2</sub>SO<sub>3</sub>H  
 - M = 97.09 g/mol  
 - CAS [5329-14-6]  
 - EC number: 226-218-8

- pH (10 g/l H<sub>2</sub>O, 25 °C) 1.18  
 - Poison class CH (Swiss): 3

**Physical data:**  
 - Spec. density: 2.13 g/cm<sup>3</sup>  
 - Bulk density: ~ 600 kg/m<sup>3</sup>  
 - Solub. in water (20 °C): 213 g/l  
 - Melting point: 205 °C (demomposes)

**Toxicological data:**  
 - LD 50 (oral, rat): 3160 mg/kg  
 - WGK: 1

**Safety:**  
 - EC Index no.: 016-026-00-0  
 - R: 36/38-52/53  
 - S: 26-28.1-61

**Transport/storage:**  
 - ADR: 8 C2 III UN 2967  
 - IMDG: 8 III UN 2967  
 - IATA/ICAO: 8 III UN 2967  
 - PAX: 822  
 - CAO: 823  
 - LGK: 8 B  
 - Disposal: 14

**S7034-1 Sulphamic acid, reagent grade**

HS-No: 2811 19 80 10

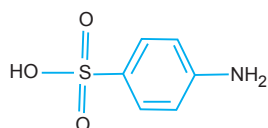
Assay (dried basis) .....	min. 99 %	Sulphate (SO <sub>4</sub> ) .....	max. 0.05 %
Insoluble in water .....	max. 0.01 %	Heavy metals (as Pb) .....	max. 0.001 %
Residue After Ignition .....	max. 0.01 %	Iron (Fe) .....	max. 5 ppm
Chlorid (Cl) .....	max. 0.0001 %		

Code	Capacity
S7034-1-1000	1 kg

## SULFANILIC ACID



Synonyms: 4-Aminobenzenesulfonic acid, Aniline-4-sulfonic acid, p-Anilinesulfonic acid



- C<sub>6</sub>H<sub>7</sub>NO<sub>3</sub>S
- M = 173.19 g/mol
- CAS [121-57-3]
- EC number: 204-482-5
- Bulk density: ~ 620 kg/m<sup>3</sup>
- Solub. in water (20 °C): 10 g/l
- Melting point: 288 °C (decomposes)
- pH (10 g/l H<sub>2</sub>O, 20 °C) ~ 2

- Safety:**
- EC Index no.: 612-014-00-X
  - R: 36/38-43
  - S: 24-37
  - Poison class CH (Swiss): 4

- Physical data:**
- Form: Solid
  - Spec. density: 1.48 g/cm<sup>3</sup>

- Toxicological data:**
- LD 50 (oral, rat): 12300 mg/kg
  - WGK: 1

- Transport/storage:**
- LGK: 10-13
  - Disposal: 14

**Applications:** Analytical chemistry, laboratory reagent, for determination of: synthesis of organic products, manufacture of dyes, antibacterian.

### S7037-1 Sulfanilic acid, reagent grade

Assay (acidimetric) .....	min. 99 %	Sulphate (SO <sub>4</sub> ) .....	max. 0.005 %
Insoluble in sol. of Na <sub>2</sub> CO <sub>3</sub> .....	max. 0.01 %	Heavy metals (as Pb) .....	max. 0.001 %
TCL test .....	passes test	Sulfated ash .....	max. 0.01 %
Chloride (Cl) .....	max. 0.002 %	Water .....	max. 0.3 %
Nitrites (NO <sub>2</sub> ) .....	max. 0.00005 %		

HS-No: 2811 19 80 10

Code	Capacity
S7037-1-0100	100 g

## SULPHURIC ACID 50%



Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>
- M = 98.08 g/mol
- CAS [7664-93-9]
- EC number: 231-639-5

- Toxicological data:**
- MAK: 0.1 mg/m<sup>3</sup>
  - WGK: 1

- S: 26-30-36/37/39-45
- Poison class CH (Swiss): 2

- Physical data:**
- Density: 1.28 g/cm<sup>3</sup>
  - Solub. in water (20 °C): miscible

- Safety:**
- EC Index no.: 016-020-00-8
  - R: 35

- Transport/storage:**
- ADR: 8 C1 II UN 2796
  - IMDG: 8 II UN 2796
  - IATA/ICAO: 8 II UN 2796
  - LGK: 8 B
  - Disposal: 12

S

### S7050-1 Sulphuric acid 50%, reagent grade

Assay (acidimetric) .....	min. 50%	Iron (Fe) .....	max. 0.00001%
Colour .....	max. 10 Hazen	Lead (Pb) .....	max. 0.000002%
Chlorides (Cl) .....	max. 0.00001%	Magnesium (Mg) .....	max. 0.000005%
Phosphates (PO <sub>4</sub> ) .....	max. 0.00005%	Manganese (Mn) .....	max. 0.000001%
Cadmium (Cd) .....	max. 0.000002%	Nickel (Ni) .....	max. 0.000002%
Calcium (Ca) .....	max. 0.00002%	Potassium (K) .....	max. 0.00001%
Cobalt (Co) .....	max. 0.000001%	Sodium (Na) .....	max. 0.00005%
Copper (Cu) .....	max. 0.000001%	Zinc (Zn) .....	max. 0.000005%

HS-No: 2807 00 10 00

Code	Capacity
S7050-1-2500	2.5 L
S7050-1-9200	200 L

### S7050-6 Sulphuric acid 50%, EC-100

Assay (acidimetric) .....	min. 50 %	Lithium (Li) .....	max. 0.02 ppm
Colour .....	max. 10 Hazen	Magnesium (Mg) .....	max. 0.01 ppm
Nitrate (NO <sub>3</sub> ) .....	max. 0.2 ppm	Manganese (Mn) .....	max. 0.01 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 0.5 ppm	Molybdenum (Mo) .....	max. 0.05 ppm
Ammonium (NH <sub>4</sub> ) .....	max. 1.0 ppm	Nickel (Ni) .....	max. 1.0 ppm
Aluminium (Al) .....	max. 0.05 ppm	Potassium (K) .....	max. 1.0 ppm
Arsenic (As) .....	max. 0.01 ppm	Silver (Ag) .....	max. 0.02 ppm
Barium (Ba) .....	max. 0.1 ppm	Sodium (Na) .....	max. 0.1 ppm
Beryllium (Be) .....	max. 0.02 ppm	Titanium (Ti) .....	max. 0.1 ppm
Bismuth (Bi) .....	max. 0.1 ppm	Thallium (Tl) .....	max. 0.05 ppm
Cadmium (Cd) .....	max. 0.05 ppm	Vanadium (V) .....	max. 0.05 ppm
Calcium (Ca) .....	max. 0.2 ppm	Zinc (Zn) .....	max. 0.1 ppm
Cobalt (Co) .....	max. 0.02 ppm	Zirconium (Zr) .....	max. 0.1 ppm
Copper (Cu) .....	max. 0.01 ppm	Substances reducing potassium	
Germanium (Ge) .....	max. 0.1 ppm	permanganate (a SO <sub>2</sub> ) .....	max. 2 ppm
Iron (Fe) .....	max. 1.0 ppm	Residue after ignition .....	max. 3 ppm
Lead (Pb) .....	max. 1.0 ppm		

HS-No: 2807 00 10 00

Code	Capacity
S7050-6-930E	300 kg

# SULPHURIC ACID 95 - 97%



Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>  
 - M = 98.08 g/mol  
 - CAS [7664-93-9]  
 - EC number: 231-639-5

**Physical data:**

- Density: 1.84 g/cm<sup>3</sup>  
 - Solub. in water (20 °C): miscible  
 - Melting point: ~ -15 °C  
 - Boiling point: ~ 310 °C  
 - Vapour pressure: (100 °C) ~ 0.0001 hPa

- pH (49 g/l H<sub>2</sub>O, 25 °C) 0.3

**Toxicological data:**

- LD 50 (oral, rat): 2140 mg/kg  
 - MAK: 0.1 mg/m<sup>3</sup>  
 - WGK: 1

**Safety:**

- EC Index no.: 016-020-00-8  
 - R: 35

- S: 26-30-36/37/39-45  
 - Poison class CH (Swiss): 2

**Transport/storage:**

- ADR: 8 C1 II UN 1830  
 - IMDG: 8 II UN 1830  
 - IATA/ICAO: 8 II UN 1830  
 - PAX: 809  
 - CAO: 813  
 - LGK: 8 B  
 - Disposal: 12

## S7061-0 Sulphuric acid 96%, CP Grade

H <sub>2</sub> SO <sub>4</sub> % by mass	min. 96.0 %
Specific Gravity (as 25 °C)	1.83 - 1.84
Free Chloride (as Cl)	max. 5 ppm
Nitrate (NO <sub>3</sub> )	max. 5 ppm
Ammonium (as NH <sub>4</sub> )	max. 5 ppm

Arsenic (as As)	max. 0.4 ppm
Manganese (as Mn)	max. 0.5 ppm
Copper (as Cu)	max. 10 ppm
Iron (as Fe)	max. 20 ppm
Zinc (as Zn)	max. 5 ppm

HS-No: 2807 00 10 00

Code	Capacity
S7061-0-2500	2.5 L

## S7061-1 Sulphuric acid 95 - 97%, reagent grade

Assay	min. 95-97%
Colour	max. 10 Hazen
Chloride (Cl)	max. 0.1 ppm
Nitrate (NO <sub>3</sub> )	max. 0.2 ppm
Phosphate (PO <sub>4</sub> )	max. 0.5 ppm
Arsenic and Antimony (as As)	max. 0.01 ppm
Silver (Ag)	max. 0.02 ppm
Aluminium (Al)	max. 0.05 ppm
Gold (Au)	max. 0.1 ppm
Boron (B)	max. 0.05 ppm
Barium (Ba)	max. 0.05 ppm
Beryllium (Be)	max. 0.02 ppm
Bismuth (Bi)	max. 0.1 ppm
Calcium (Ca)	max. 0.2 ppm
Cadmium (Cd)	max. 0.05 ppm
Cobalt (Co)	max. 0.02 ppm
Chromium (Cr)	max. 0.02 ppm
Copper (Cu)	max. 0.01 ppm
Iron (Fe)	max. 0.1 ppm
Gallium (Ga)	max. 0.02 ppm
Germanium (Ge)	max. 0.1 ppm
Indium (In)	max. 0.02 ppm

Potassium (K)	max. 0.1 ppm
Lithium (Li)	max. 0.02 ppm
Magnesium (Mg)	max. 0.1 ppm
Manganese (Mn)	max. 0.02 ppm
Molybdenum (Mo)	max. 0.05 ppm
Ammonium (NH <sub>4</sub> )	max. 2 ppm
Sodium (Na)	max. 0.2 ppm
Nickel (Ni)	max. 0.02 ppm
Lead (Pb)	max. 0.05 ppm
Platinum (Pt)	max. 0.2 ppm
Selen (Se)	max. 0.1 ppm
Tin (Sn)	max. 0.1 ppm
Strontium (Sr)	max. 0.05 ppm
Titanium (Ti)	max. 0.1 ppm
Thallium (Tl)	max. 0.05 ppm
Vanadium (V)	max. 0.05 ppm
Zinc (Zn)	max. 0.1 ppm
Zirconium (Zr)	max. 0.1 ppm
KMnO <sub>4</sub> - reducing substances (as SO <sub>2</sub> )	max. 2 ppm
Residue after ignition	max. 3 ppm

HS-No: 2807 00 10 00

Code	Capacity
S7061-1-1000	1.0 L
S7061-1-2500	2.5 L
S7061-1-2501	2.5 L

## S7061-6 Sulphuric acid 95 - 97%, EC-100

Assay	96.0 - 97.0 %
Color (Hazen)	max. 10 Hazen
Residue after ignition	max. 2000 ppb
Reducing agent (KmNO <sub>4</sub> )	max. 2000 ppb
Chloride (Cl)	max. 100 ppb
Phosphate (PO <sub>4</sub> )	max. 500 ppb
Ammonium (NH <sub>4</sub> )	max. 2000 ppb
Nitrate (NO <sub>3</sub> )	max. 200 ppb
Aluminium (Al)	max. 50 ppb
Arsenic (As)	max. 20 ppb
Barium (Ba)	max. 50 ppb
Boron (B)	max. 50 ppb
Cadmium (Cd)	max. 50 ppb
Calcium (Ca)	max. 200 ppb
Cobalt (Co)	max. 20 ppb

Copper (Cu)	max. 10 ppb
Chromium (Cr)	max. 20 ppb
Iron (Fe)	max. 100 ppb
Magnesium (Mg)	max. 100 ppb
Manganese (Mn)	max. 20 ppb
Molybdenum (Mo)	max. 50 ppb
Nickel (Ni)	max. 20 ppb
Lead (Pb)	max. 50 ppb
Lead (Pb)	max. 100 ppb
Tin (Sn)	max. 100 ppb
Titanium (Ti)	max. 100 ppb
Vanadium (V)	max. 50 ppb
Zinc (Zn)	max. 100 ppb
Zirconium (Zr)	max. 100 ppb

HS-No: 2807 00 10 00

Code	Capacity
S7061-6-2500	2.5 L
S7061-6-9025	25 kg

## S7061-7 Sulphuric acid 95 - 97%, EC-10

Assay	96.0 - 97.0 %
Color (Hazen)	max. 10 Hazen
Residue after ignition	max. 3 ppm
Reducing agent (KmNO <sub>4</sub> )	max. 1 ppm
Chloride (Cl)	max. 0.1 ppm
Phosphate (PO <sub>4</sub> )	max. 0.2 ppm
Ammonium (NH <sub>4</sub> )	max. 0.5 ppm
Nitrate (NO <sub>3</sub> )	max. 0.2 ppm
Aluminium (Al)	max. 0.02 ppm
Arsenic (As)	max. 0.005 ppm
Barium (Ba)	max. 0.01 ppm
Boron (B)	max. 0.01 ppm
Cadmium (Cd)	max. 0.01 ppm
Calcium (Ca)	max. 0.05 ppm

Cobalt (Co)	max. 0.01 ppm
Copper (Cu)	max. 0.01 ppm
Chromium (Cr)	max. 0.01 ppm
Iron (Fe)	max. 0.05 ppm
Magnesium (Mg)	max. 0.02 ppm
Manganese (Mn)	max. 0.01 ppm
Molybdenum (Mo)	max. 0.01 ppm
Nickel (Ni)	max. 0.01 ppm
Lead (Pb)	max. 0.01 ppm
Tin (Sn)	max. 0.02 ppm
Titanium (Ti)	max. 0.01 ppm
Vanadium (V)	max. 0.01 ppm
Zinc (Zn)	max. 0.05 ppm
Zirconium (Zr)	max. 0.01 ppm

HS-No: 2807 00 10 00

Code	Capacity
S7061-7-2500	2.5 L

**S7064-1 Sulphuric acid 98%, reagent grade**

HS-No: 2807 00 10 00

Assay (Acidimetric) .....	min. 98%	Lithium (Li) .....	max. 0.01 ppm
Colour .....	max. 10 Hazen	Magnesium (Mg) .....	max. 0.5 ppm
Free Chloride (Cl) .....	max. 2 ppm	Manganese (Mn) .....	max. 0.2 ppm
Nitrate (NO <sub>3</sub> ) .....	max. 2 ppm	Molybdenum (Mo) .....	max. 0.01 ppm
Phosphate (PO <sub>4</sub> ) .....	max. 2 ppm	Ammonium (NH <sub>4</sub> ) .....	max. 1 ppm
Arsenic and Antimony (as As) .....	max. 1 ppm	Sodium (Na) .....	max. 0.2 ppm
Aluminium (Al) .....	max. 0.02 ppm	Nickel (Ni) .....	max. 0.05 ppm
Calcium (Ca) .....	max. 1 ppm	Zinc (Zn) .....	max. 1 ppm
Chromium (Cr) .....	max. 1 ppm	Zirconium (Zr) .....	max. 1 ppm
Iron (Fe) .....	max. 2 ppm	Specific Gravity (as 25 °C) .....	1.80 - 1.88
Potassium (K) .....	max. 0.1 ppm		

Code	Capacity
S7064-1-2500	2.5 L

**SULPHURIC ACID, VOLUMETRIC SOLUTIONS****S7079-0 Sulphuric acid, solution 0.01 mol/l (0.02 N)**

HS-No: 2807 00 10 00

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>
- M = 98.08 g/mol
- CAS [7664-93-9]
- EC number: 231-639-5

**Physical data:**

- Density: 1.00 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 0

**Safety:**

- EC Index no.: 016-020-00-8
- Poison class CH (Swiss): 5

1ml = 0.0009808 g H<sub>2</sub>SO<sub>4</sub>

Code	Capacity
S7079-0-1000	1.0 L

**S7080-0 Sulphuric acid, solution 0.025 mol/l (0.05 N)**

HS-No: 2807 00 10 00

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>
- M = 98.08 g/mol
- CAS [7664-93-9]
- EC number: 231-639-5

**Physical data:**

- Density: 1.00 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 0

**Safety:**

- EC Index no.: 016-020-00-8
- Poison class CH (Swiss): 4

**Transport/storage:**

- LGK: 8 B

1ml = 0.002452 g H<sub>2</sub>SO<sub>4</sub>

Code	Capacity
S7080-0-1000	1.0 L

**S7081-0 Sulphuric acid, solution 0.05 mol/l (0.1 N)**

HS-No: 2807 00 10 00

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>
- M = 98.08 g/mol
- CAS [7664-93-9]
- EC number: 231-639-5

**Physical data:**

- Density: ~1.00 g/cm<sup>3</sup>
- pH (20 °C) ~ 1.3

**Toxicological data:**

- LD 50 (oral, rat): 2140 mg/kg
- WGK: 0

**Safety:**

- EC Index no.: 016-020-00-8
- Poison class CH (Swiss): 5

**Transport/storage:**

- LGK: 8 B

1ml = 0.004904 g H<sub>2</sub>SO<sub>4</sub>

Code	Capacity
S7081-0-1000	1.0 L

**S7084-0 Sulphuric acid, solution 0.1 mol/l (0.2 N)**

HS-No: 2807 00 10 00

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>
- M = 98.08 g/mol
- CAS [7664-93-9]
- EC number: 231-639-5

**Physical data:**

- Density: ~1.00 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 0

**Safety:**

- EC Index no.: 016-020-00-8
- Poison class CH (Swiss): 4

1ml = 0.0098808 g H<sub>2</sub>SO<sub>4</sub>

Code	Capacity
S7084-0-1000	1.0 L

**S7085-0 Sulphuric acid, solution 0.125 mol/l (0.25 N)**

HS-No: 2807 00 10 00

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>
- M = 98.08 g/mol
- CAS [7664-93-9]
- EC number: 231-639-5

**Physical data:**

- Density: 1.01 g/cm<sup>3</sup>

**Toxicological data:**

- WGK: 0

**Safety:**

- EC Index no.: 016-020-00-8
- Poison class CH (Swiss): 4

1ml = 0.01226 g H<sub>2</sub>SO<sub>4</sub>

Code	Capacity
S7085-0-1000	1.0 L

**S7088-0 Sulphuric acid, solution 0.13 mol/l (0.26 N)**

HS-No: 2807 00 10 00

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>
- M = 98.08 g/mol
- CAS [7664-93-9]
- EC number: 231-639-5

**Toxicological data:**

- WGK: 0

**Safety:**

- EC Index no.: 016-020-00-8
- Poison class CH (Swiss): 5

**Transport/storage:**

- LGK: 8

1ml = 0.0127504 g H<sub>2</sub>SO<sub>4</sub>

Code	Capacity
S7088-0-1000	1.0 L

**S7091-0 Sulphuric acid, solution 0.25 mol/l (0.5 N)**

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>  
 - M = 98.08 g/mol  
 - CAS [7664-93-9]  
 - EC number: 231-639-5

**Physical data:**  
 - Density: 1.02 g/cm<sup>3</sup>  
 - pH (20 °C) ~ 1.0

**Toxicological data:**  
 - LD 50 (oral,rat): 2140 mg/kg  
 - MAK: 0.1 mg/m<sup>3</sup>  
 - WGK: 0

**Safety:**  
 - EC Index no.: 016-020-00-8  
 - Poison class CH (Swiss): 4

**Transport/storage:**  
 - LGK: 8B

1ml = 0.02452 g H<sub>2</sub>SO<sub>4</sub>

HS-No: 2807 00 10 00

Code	Capacity
S7091-0-1000	1.0 L

**S7092-0 Sulphuric acid, solution 0.5 mol/l (1 N)**

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>  
 - M = 98.08 g/mol  
 - CAS [7664-93-9]  
 - EC number: 231-639-5

**Physical data:**  
 - Density: 1.03 g/cm<sup>3</sup>  
 - pH (20 °C) ~ 0.6

**Toxicological data:**  
 - LD 50 (oral,rat): 2140 mg/kg  
 (pure substance)  
 - MAK: 0.1 mg/m<sup>3</sup>  
 - WGK: 1

**Safety:**  
 - EC Index no.: 016-020-00-8  
 - Poison class CH (Swiss): 3

**Transport/storage:**  
 - LGK: 8B

1ml = 0.04904 g H<sub>2</sub>SO<sub>4</sub>

HS-No: 2807 00 10 00

Code	Capacity
S7092-0-1000	1.0 L

**S7095-0 Sulphuric acid, solution 1 mol/l (2 N)**

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>  
 - M = 98.08 g/mol  
 - CAS [7664-93-9]  
 - EC number: 231-639-5

**Physical data:**  
 - Density: 1.06 g/cm<sup>3</sup>

**Toxicological data:**  
 - WGK: 1

**Safety:**  
 - EC Index no.: 016-020-00-8  
 - R: 36/38  
 - S: 26-30-37  
 - Poison class CH (Swiss): 2

**Transport/storage:**  
 - ADR: 8 C1 II UN 2796  
 - IMDG: 8 II UN 2796  
 - IATA/ICAO: 8 II UN 2796  
 - PAX: 809  
 - CAO: 813

1ml = 0.09808 g H<sub>2</sub>SO<sub>4</sub>

HS-No: 2807 00 10 00

Code	Capacity
S7095-0-1000	1.0 L

S

**S7097-0 Sulphuric acid, solution 2.5 mol/l (5 N)**

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>  
 - M = 98.08 g/mol  
 - CAS [7664-93-9]  
 - EC number: 231-639-5

**Physical data:**  
 - Density: 1.15 g/cm<sup>3</sup>  
 - Boiling pont: ~ 103 °C

**Toxicological data:**  
 - WGK: 1

**Safety:**  
 - EC Index no.: 016-020-00-8  
 - R: 35  
 - S: 26-30-36/37/39-45  
 - Poison class CH (Swiss): 2

**Transport/storage:**  
 - ADR: 8 C1 II UN 2796  
 - IMDG: 8 II UN 2796  
 - IATA/ICAO: 8 II UN 2796  
 - PAX: 809  
 - CAO: 813

1ml = 0.2452 g H<sub>2</sub>SO<sub>4</sub>

HS-No: 2807 00 10 00

Code	Capacity
S7097-0-1000	1.0 L

**S7098-0 Sulphuric acid, solution 4 mol/l (8 N)**

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>  
 - M = 98.08 g/mol  
 - CAS [7664-93-9]  
 - EC number: 231-639-5

**Physical data:**  
 - Density: ~1.23 g/cm<sup>3</sup>

**Toxicological data:**  
 - WGK: 1

**Safety:**  
 - EC Index no.: 016-020-00-8  
 - R: 35  
 - S: 26-30-36/37/39-45

**Transport/storage:**  
 - ADR: 8 C1 II UN 2796  
 - IMDG: 8 II UN 2796  
 - IATA/ICAO: 8 II UN 2796  
 - LGK: 8 B  
 - Disposal: 12

1ml = 0.39232 g H<sub>2</sub>SO<sub>4</sub>

HS-No: 2807 00 10 00

Code	Capacity
S7098-0-1000	1.0 L

**S7099-0 Sulphuric acid, solution 5 mol/l (10 N)**

Synonyms: Sulphuric acid

- H<sub>2</sub>SO<sub>4</sub>  
 - M = 98.08 g/mol  
 - CAS [7664-93-9]  
 - EC number: 231-639-5

**Physical data:**  
 - Density: 1.28 g/cm<sup>3</sup>

**Toxicological data:**  
 - MAK: 1 mg/m<sup>3</sup>  
 - WGK: 1

**Safety:**  
 - EC Index no.: 016-020-00-8  
 - R: 35  
 - S: 26-30-36/37/39-45  
 - Poison class CH (Swiss): 2

**Transport/storage:**  
 - ADR: 8 C1 II UN 2796  
 - IMDG: 8 II UN 2796  
 - IATA/ICAO: 8 II UN 2796  
 - LGK: 8 B

1ml = 0.4904 g H<sub>2</sub>SO<sub>4</sub>

HS-No: 2807 00 10 00

Code	Capacity
S7099-0-1000	1.0 L





# Chemical list : T

## THINNER

Synonyms:

- C<sub>6</sub>H<sub>14</sub>O<sub>+</sub>
- M = 142 g/mol
- CAS [Mixed]

### T1001-1 Thinner LM20, reagent grade

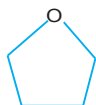
Appearance .....	liquid	Colour .....	max. 20 Hazen
Assay .....	min. 98.0 % wt	Evaporation Residue .....	max. 0.1 % wt
Specific Gravity (20 °C) .....	0.63 - 0.68	Water .....	max. 0.2 % wt

Code	Capacity
T1001-1-9020	20 kg



## TETRAHYDROFURAN

Synonyms: THF, Tetramethylene oxide, Oxolane



- C<sub>4</sub>H<sub>8</sub>O
- M = 72.11 g/mol
- CAS [109-99-9]
- EC number: 203-726-8

#### Physical data:

- Form: Liquid
- Density: 0.89 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- Melting point: -108.5 °C
- Boiling point: 65 - 66 °C
- Flash point: -21.5 °C
- Ignition temp.: 215 °C
- Vapour pressure: (20 °C) 173 hPa

- Refraction index: (n 20 °C/D) 1.407
- Viscosity: (20 °C) 0.47 mPas
- Dipolar moment: (20 °C) 1.63 Debye
- Dielectric const: (20 °C) 7.4
- Saturation conc.: (20 °C) 557 g/m<sup>3</sup>
- Expl. limit (upper): 12.4 Vol%
- Expl. limit (lower): 1.5 Vol%
- pH (200 g/l H<sub>2</sub>O, 20 °C) 7 - 8

#### Toxicological data:

- LD 50 (oral, rat): 1650 mg/kg
- MAK: 50 ml/m<sup>3</sup>, 150 mg/m<sup>3</sup>
- WGK: 1

#### Safety:

- EC Index no.: 603-025-00-0
- R: 11-19-36/37
- S: 16-29-33
- VbF class: B
- Poison class CH (Swiss): 3

#### Transport/storage:

- ADR: 3 F1 II UN 2056
- IMDG: 3 II UN 2056
- IATA/ICAO: 3 II UN 2056
- PAX: 305
- CAO: 307
- LGK: 3 A
- Disposal: 1

### T2061-1 Tetrahydrofuran, reagent grade

Purity (GC) .....	min. 99.5%	Cadmium (Cd) .....	max. 0.05 ppm
Identity (IR) .....	conforms	Cobalt (Co) .....	max. 0.02 ppm
Colour .....	max. 10 Hazen	Chromium (Cr) .....	max. 0.02 ppm
Acidity .....	max. 0.0005 meq/g	Copper (Cu) .....	max. 0.02 ppm
Alkalinity .....	max. 0.0002 meq/g	Iron (Fe) .....	max. 0.1 ppm
Peroxide (as H <sub>2</sub> O <sub>2</sub> ) .....	max. 0.005%	Magnesium (Mg) .....	max. 0.02 ppm
Evaporation residue .....	max. 0.001%	Manganese (Mn) .....	max. 0.02 ppm
Water .....	max. 0.05%	Nickel (Ni) .....	max. 0.02 ppm
Aluminium (Al) .....	max. 0.5 ppm	Lead (Pb) .....	max. 0.1 ppm
Boron (B) .....	max. 0.02 ppm	Tin (Sn) .....	max. 0.1 ppm
Barium (Ba) .....	max. 0.1 ppm	Zinc (Zn) .....	max. 0.1 ppm
Calcium (Ca) .....	max. 0.5 ppm		

HS-No: 2932 11 00 90

Code	Capacity
T2061-1-2500	2.5 L
T2061-1-2501	2.5 L
T2061-1-9025	25 L

### T2061-4 Tetrahydrofuran, HPLC grade

See specification in Solvents Specification - 30

HS-No: 2932 11 00 90

Code	Capacity
T2061-4-1001	1.0 L
T2061-4-2001	2.5 L
T2061-4-4001	4.0 L

### T2061-4 Tetrahydrofuran (Stabilized with BHT), HPLC Grade

See specification in Solvents Specification - 51

HS-No: 2932 11 00 90

Code	Capacity
T2061-4-1001	1.0 L
T2061-4-4001	4.0 L

### T2061-14 Tetrahydrofuran, HPLC grade

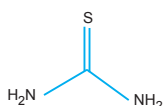
See specification in Solvents Specification - 58

HS-No: 2932 11 00 90

Code	Capacity
T2061-14-1001	1.0 L
T2061-14-4001	4.0 L

## THIOUREA

Synonyms: Thiocarbamide



- CH<sub>4</sub>N<sub>2</sub>S
- M = 76.11 g/mol
- CAS [62-56-6]
- EC number: 200-543-5

#### Physical data:

- Spec. density: 1.405 g/cm<sup>3</sup>
- Bulk density: 640 kg/m<sup>3</sup>
- Solub. in water (20 °C): 137 g/l
- Melting point: 171 - 184 °C

- Ignition temp.: 440 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5 - 7

#### Toxicological data:

- LD 50 (oral, rat): 1750 mg/kg
- WGK: 2

#### Safety:

- EC Index no.: 612-082-00-0
- R: 22-40-51/53-63

- S: 36/37-46-61
- Poison class CH (Swiss): 3

#### Transport/storage:

- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- LGK: 10-13
- Disposal: 3

### T3017-1 Thiourea, reagent grade

Assay (argentometric) .....	min. 99 %	Sensitivity to bismuth .....	passes test
Insoluble in water .....	max. 0.005 %	Sulfated ash .....	max. 0.05 %
Sulphate (SO <sub>4</sub> ) .....	max. 0.01 %	Loss on drying (105 °C) .....	max. 0.5 %
Iron (Fe) .....	max. 0.0005 %		

HS-No: 2930 90 70 90

Code	Capacity
T3017-1-0500	500 g

## TIN (II) CHLORIDE DIHYDRATE



Synonyms: Hydrochloric acid tin (II)-salt dihydrae, Stannic chloride, Stanno chlor

-  $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$   
- M = 225.63 g/mol  
- CAS [10025-69-1]  
- EC number: 231-868-0

**Physical data:**  
- Spec. density: 2.71 g/cm<sup>3</sup>  
- Bulk density: ~ 1250 kg/m<sup>3</sup>

- Solub. in water (20 °C): soluble  
- Melting point: 37.7 °C  
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~ 1 - 2

**Toxicological data:**  
- LD 50 (oral, rat): 700 mg/kg  
(anhydrous substance)  
- MAK: 2 mg/m<sup>3</sup>  
- WGK: 1

**Safety:**  
- R: 22-36/37/38  
- S: 26-46  
- Poison class CH (Swiss): 2

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 15

### T3032-1 Tin (II) chloride dihydrate, reagent grade

HS-No: 2827 39 10 00

Assay (iodometric) .....	min. 98%	Lead (Pb) .....	max. 0.005%
Insoluble in HCl .....	max. 0.005%	Magnesium (Mg) .....	max. 0.005%
Sulfates (SO <sub>4</sub> ) .....	max. 0.002%	Manganese (Mn) .....	max. 0.0005%
Ammonium (NH <sub>4</sub> ) .....	max. 0.002%	Nickel (Ni) .....	max. 0.0005%
Arsenic (As) .....	max. 0.0001%	Other metals (as Pb) .....	max. 0.01%
Calcium (Ca) .....	max. 0.005%	Potassium (K) .....	max. 0.005%
Copper (Cu) .....	max. 0.001%	Sodium (Na) .....	max. 0.005%
Iron (Fe) .....	max. 0.002%		

Code	Capacity
T3032-1-0500	500 g

## TIN (IV) OXIDE

Synonyms: Tin dioxide, Stannic (IV) oxide

- SnO<sub>2</sub>  
- M = 150.70 g/mol  
- CAS [18282-10-5]  
- EC number: 242-159-0

**Physical data:**  
- Spec. density: 6.95 g/cm<sup>3</sup>  
- Bulk density: ~ 500 - 600 kg/m<sup>3</sup>

- Solub. in water (20 °C): insoluble  
- Melting point: 1630 °C  
- pH (50 g/l H<sub>2</sub>O, 20 °C) 4 - 5

**Toxicological data:**  
- LD 50 (oral, rat): > 20000 mg/kg  
- WGK: 0

**Safety:**  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- LGK: 10-13

### T3042-3 Tin (IV) oxide, extra pure

HS-No: 2825 90 30 00

Assay (gravimetric) .....	min. 99 %	Loss on calcinations (900 °C) .....	max. 0.2 %
Chlorides (Cl) .....	max. 0.05 %	Iron (Fe) .....	max. 0.01 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.05 %	Soluble in acid .....	max. 0.2 %

Code	Capacity
T3042-3-0500	500 g

## TIN

Synonyms:

- Sn  
- M = 118.69 g/mol  
- CAS [7440-31-5]  
- EC number: 231-141-8

**Physical data:**  
- Bulk density: ~ 4000 kg/m<sup>3</sup>

- Solub. in water (20 °C): insoluble  
- Melting point: 232 °C  
- Boiling point: 2362 °C

**Toxicological data:**  
- WGK: 0

**Safety:**  
- Poison class CH (Swiss): F

**Transport/storage:**  
- LGK: 10-13  
- Disposal: 15

### T3044-3 Tin, extra pure

HS-No: 8005 00 00 00

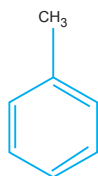
Antimony (Sb) .....	max. 0.0002 %	Copper (Cu) .....	max. 0.005 %
Arsenic (As) .....	max. 0.01 %	Iron (Fe) .....	max. 0.02 %
Bismuth (Bi) .....	max. 0.01 %	Lead (Pb) .....	max. 0.01 %

Code	Capacity
T3044-3-0500	500 g

## TOLUENE



Synonyms: Methylbenzene, Phenylmethane



- C<sub>7</sub>H<sub>8</sub>  
- M = 92.14 g/mol  
- CAS [108-88-3]  
- EC number: 203-625-9

**Physical data:**  
- Density: 0.87 g/cm<sup>3</sup>  
- Solub. in water (20 °C): 0.52 g/l  
- Melting point: -95 °C  
- Boiling point: 111 °C  
- Flash point: 4 °C  
- Ignition temp.: 535 °C  
- Vapour pressure: (20 °C) 29 hPa  
- Viscosity: (20 °C) 0.58 mPa

- Dipolar moment: (20 °C) 0.36 Debye  
- Dielectric const.: (25 °C) 2.3  
- Saturation conc.: (20 °C) 110 g/m<sup>3</sup>  
- Expl. limit (upper): 8 Vol%  
- Expl. limit (lower): 1.2 Vol%

**Toxicological data:**  
- LD 50 (oral, rat): 636 mg/kg  
- MAK: 50 ml/m<sup>3</sup>, 190 mg/m<sup>3</sup>  
- WGK: 2

**Safety:**  
- EC Index no.: 601-021-00-3

- R: 11-20  
- S: 16-25-29-33  
- VbF class: A1  
- Poison class CH (Swiss): 4

**Transport/storage:**  
- ADR: 3 F1 II UN 1294  
- IMDG: 3 II UN 1294  
- IATA/ICAO: 3 II UN 1294  
- PAX: 305  
- CAO: 307  
- LGK: 3 A  
- Disposal: 1

**T5031-1 Toluene, reagent grade**

HS-No: 2902 30 00 00

Assay (G.C.) .....	min. 99.5%	Cadmium (Cd) .....	max. 0.000005 %
Colour (Hazen) .....	max. 10 Hazen	Calcium (Ca) .....	max. 0.00005 %
Acidity .....	max. 0.0003 meq/g	Cobalt (Co) .....	max. 0.000002 %
Alkalinity .....	max. 0.0006 meq/g	Copper (Cu) .....	max. 0.000002 %
Benzene (GC) .....	max. 0.005 %	Chromium (Cr) .....	max. 0.000002 %
Thiophene .....	max. 0.0001 %	Iron (Fe) .....	max. 0.00001 %
Sulfur compounds (as S) .....	max. 0.003 %	Tin (Sn) .....	max. 0.00001 %
Evaporation residue .....	max. 0.001 %	Magnesium (Mg) .....	max. 0.00001 %
Water .....	max. 0.03 %	Manganese (Mn) .....	max. 0.000002 %
Aluminium (Al) .....	max. 0.00005 %	Nickel (Ni) .....	max. 0.000002 %
Barium (Ba) .....	max. 0.00001 %	Lead (Pb) .....	max. 0.00001 %
Boron (B) .....	max. 0.000002 %	Zinc (Zn) .....	max. 0.00001 %

Code	Capacity
T5031-1-1001	1.0 L
T5031-1-2501	2.5 L

**T5031-4 Toluene, HPLC grade**

HS-No: 2902 30 00 00

See specification in Solvents Specification - 52

Code	Capacity
T5031-4-1001	1.0 L
T5031-4-2501	2.5 L
T5031-4-4001	4.0 L

**T5031-11 Toluene, Pesticide grade**

HS-No: 2902 30 00 00

See specification in Solvents Specification - 52

Code	Capacity
T5031-11-1001	1.0 L
T5031-11-4001	4.0 L

**T5031-12 Toluene, Ultimate grade**

HS-No: 2902 30 00 00

See specification in Solvents Specification - 18

Code	Capacity
T5031-12-1001	1.0 L
T5031-12-4001	4.0 L

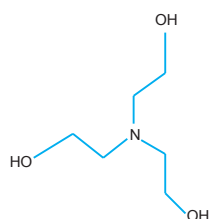
**T5031-15 Toluene, Ultimate grade**

HS-No: 2902 30 00 00

See specification in Solvents Specification - 64

Code	Capacity
T5031-15-1001	1.0 L
T5031-15-4001	4.0 L

T

**TRIETHANOLAMINE**Synonyms: *Tris (2-hydroxyethyl) amine, 2,2',2''-Trihydroxytriethylamine, TEA*

-  $C_6H_{15}NO_3$   
 - M = 149.19 g/mol  
 - CAS [102-71-6]  
 - EC number: 203-049-8

**Physical data:**  
 - Density: 1.12 g/cm<sup>3</sup>  
 - Solub. in water (20 °C): miscible  
 - Melting point: 21.2 °C

- Boiling point: (hPa) 208 °C  
 - Flash point: 190 °C  
 - Ignition temp.: 325 °C  
 - Vapour pressure: (20 °C) 0.01 hPa  
 - Expl. limit (upper): 7.2 Vol%  
 - Expl. limit (lower): 3.6 Vol%  
 - pH (15 g/l H<sub>2</sub>O, 20 °C) 10.5

**Toxicological data:**  
 - LD 50 (oral, rat): 8000 mg/kg  
 - WGK: 1

**Safety:**  
 - Poison class CH (Swiss): 5

**Transport/storage:**  
 - LGK: 10-13  
 - Disposal: 1

**T6025-2 Triethanolamine, synthesis grade**

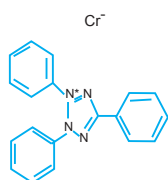
HS-No: 2922 13 10 00

Assay (GC) .....	min. 98 %
Mono + diethanolamine (G.C) .....	max. 2 %
Sulfated ash .....	max. 0.1 %
Water .....	max. 1 %

Code	Capacity
T6025-2-1000	1.0 L
T6025-2-2500	2.5 L

**2,3,5-TRIPHENYL TETRAZOLIUM CHLORIDE**

Synonyms:



-  $C_{19}H_{15}ClN_4$   
 - M = 334.81 g/mol  
 - CAS [298-96-4]  
 - EC number: 206-071-6

**Physical data:**  
 - Solub. in water ~ 150 g/l (20 °C)  
 - pH value ~ 3.7 (10 g/l, H<sub>2</sub>O, 20 °C)  
 - Melting point: 243 °C  
 (decomposes)  
 - Bulk density ~ 230 kg/m<sup>3</sup>

**Safety:**  
 - Poison class (CH) NK

**Transport/storage:**  
 - LGK: 10-13

**T6030-1 2,3,5-Triphenyl tetrazolium chloride, reagent grade**

HS-No: 2933 90 95 00

Molar absorptivity (L/cm-mol) .....	min. $2.0 \times 10^4$	Heavy metals (as Pb) .....	max. 0.001 %
Sensitivity test .....	passes test	Iron (Fe) .....	max. 0.001 %
Solubility test .....	passes test	Residue after ignition (as sulfate) ....	max. 0.5 %
Loss on drying .....	max. 3.0 %		

Code	Capacity
T6030-1-0010	10 g

## Triethylamine



### Synonyms:

- Formula: (C<sub>2</sub>H<sub>5</sub>)<sub>3</sub>N
- F.W.: 101.19
- CAS: 121-44-8

### Physical Data:

- Density (g/ml, 25 °C): 0.73
- Boiling point (°C): 88.8
- Refractive index (25 °C): 1.4

### Transport/storage:

- ADR : 3(8). II UN 1296
- IMDG : 3(8). II UN 1296
- IATA/ICAO : 3(8). II UN 1296

### T6035-14 Triethylamine, Bio Grade

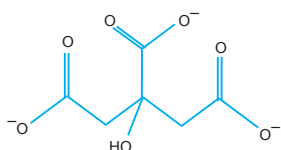
HS-No: 2921 19 10

See specification in Solvents Specification - 59

Code	Capacity
T6035-14-1001	1.0 L
T6045-14-4001	4.0 L

## TRI-SODIUM CITRATE DIHYDRATE

### Synonyms:



- C<sub>6</sub>H<sub>5</sub>Na<sub>3</sub>O<sub>7</sub>·2H<sub>2</sub>O
- M = 294.10 g/mol
- CAS [6132-04-3]
- EC number: 200-675-3

### Physical data:

- Spec. density: 1.76 g/cm<sup>3</sup>
- Bulk density: ~ 600 kg/m<sup>3</sup>

- Solub. in water (25 °C): 425 g/l
- Melting point: 150 °C (anhydrous substance)
- pH (50 g/l H<sub>2</sub>O, 20 °C) 7.5 - 9.5

### Toxicological data:

- WGK: 1

### Safety:

- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### T6066-1 Tris-sodium citrate dihydrate, reagent grade

HS-No: 2918 15 00 00

Assay (titr. with HClO <sub>4</sub> )	min. 99.5 %	Ammonium (NH <sub>4</sub> )	max. 0.003 %
Insoluble in water	max. 0.005 %	Calcium (Ca)	max. 0.005 %
pH (5%, H <sub>2</sub> O)	7.5 - 9.0	Copper (Cu)	max. 0.0005 %
Chlorides (Cl)	max. 0.001 %	Heavy metals (as Pb)	max. 0.0005 %
Oxalate (C <sub>2</sub> O <sub>4</sub> )	max. 0.02 %	Iron (Fe)	max. 0.0005 %
Phosphates (PO <sub>4</sub> )	max. 0.002 %	Lead (Pb)	max. 0.0002 %
Sulfates (SO <sub>4</sub> )	max. 0.001 %	Zinc (Zn)	max. 0.0005 %
Total N	max. 0.001 %	Water	11 - 13 %

Code	Capacity
T6066-1-0250	250 g
T6066-1-0500	500 g

## TRI-SODIUM PHOSPHATE DODECAHYDRATE



### Synonyms: Trisodium phosphate, Sodium phosphate tribasic

- Na<sub>3</sub>PO<sub>4</sub>·12H<sub>2</sub>O
- M = 380.12 g/mol
- CAS [10101-89-0]
- EC number: 231-509-8

### Physical data:

- Spec. density: 1.62 g/cm<sup>3</sup>
- Bulk density: ~620 kg/m<sup>3</sup>

- Solub. in water (20 °C): 285 g/l
- Melting point: 75 °C
- pH (10 g/l H<sub>2</sub>O, 20 °C) ~ 12

### Toxicological data:

- LD 50 (oral, rat): 7400 mg/kg
- WGK: 1

### Safety:

- R: 36/38
- Poison class CH (Swiss): 5

### Transport/storage:

- LGK: 10-13
- Disposal: 14

### T6072-1 Tri-Sodium phosphate dodecahydrate, reagent grade

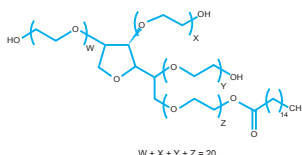
HS-No: 2835 23 00 00

Assay (acidimetric)	min. 98 %	Sulfates (SO <sub>4</sub> )	max. 0.005 %
Insoluble in water	max. 0.01 %	Total N	max. 0.001 %
Free alkali (as NaOH)	max. 2.5 %	Arsenic (As)	max. 0.0001 %
Chlorides (Cl)	max. 0.0005 %	Heavy metals (as Pb)	max. 0.001 %
Fluorides (F)	max. 0.0005 %	Iron (Fe)	max. 0.001 %

Code	Capacity
T6072-1-0500	500 g
T6072-1-1000	1 kg

## TWEEN® 20

### Synonyms: Polyoxyethylene sorbitan monostearate



- C<sub>54</sub>H<sub>114</sub>O<sub>26</sub>
- CAS [9005-65-4]

### Physical data:

- Form: Thick liquid
- Density: 1.11 g/cm<sup>3</sup>
- Solub. in water (25 °C): 100 g/l

- Boiling point: > 1000 °C
- Flash point: > 150 °C
- Vapour pressure: (20 °C) < 1.4 hPa
- pH (50 g/l H<sub>2</sub>O, 20 °C) 6 - 8

### Toxicological data:

- LD 50 (oral, rat): 38000 mg/kg

### Safety:

- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13
- Disposal: 28

### T8000-2 Tween® 20, synthesis grade

HS-No: 3402 13 00 00

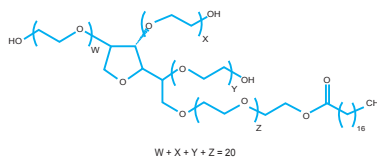
Identity (IR-spectrum)	passes test	Saponificatin index	40 - 50
Acidity index	3	Sulfated ash	max. 0.5 %
Hydroxyl number	96 - 108		

Code	Capacity
T8000-2-1000	1.0 L



## TWEEN® 60

Synonyms: Polyoxyethylene sorbitan monostearate



- C<sub>64</sub>H<sub>126</sub>O<sub>26</sub>  
- CAS [9005-67-8]

**Physical data:**

- Density: 1.08 g/cm<sup>3</sup>  
- Solub. in water (25 °C): miscible  
- Boiling point: > 100 °C

- Flash point: > 149 °C  
- Vapour pressure: (20 °C) < 14 hPa  
- Viscosity: (25 °C) ~ 600 mPas  
- pH ~ 7

**Toxicological data:**

- LD 50 (oral, rat): > 38000 mg/kg  
- WGK: 1

**Safety:**

- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13  
- Disposal: 28

### T8007-2 Tween® 60, synthesis grade

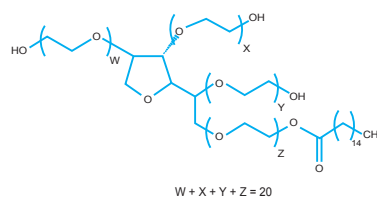
Hydroxyl number ..... 81 - 95  
Saponification index ..... 45 - 55

HS-No: 3402 13 00 00

Code	Capacity
T8007-2-1000	1.0 L

## TWEEN® 80

Synonyms: Polyoxyethylene sorbitan monooleate



- C<sub>64</sub>H<sub>124</sub>O<sub>26</sub>  
- CAS [9005-65-6]

**Physical data:**

- Density: 1.07 g/cm<sup>3</sup>  
- Solub. in water (25 °C): miscible  
- Boiling point: > 100 °C  
- Flash point: > 149 °C

- Ignition temp.: > 180 °C  
- Vapour pressure: (20 °C) < 1.33 hPa  
- Viscosity: (25 °C) 375 - 480 mPas  
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5 - 7

**Toxicological data:**

- LD 50 (oral, rat): > 38000 mg/kg  
- WGK: 1

**Safety:**

- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13  
- Disposal: 28

### T8009-2 Tween® 80, synthesis grade

Arsenic (As) .....	max. 0.0001 %	Iodine index .....	18 - 24
Heavy metals (as Pb) .....	max. 0.001 %	Saponificatin index .....	45 - 55
Acidity index .....	3	Sulfated ash .....	max. 0.5 %
Hydroxyl number .....	65 - 80		

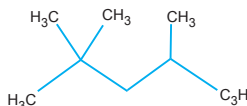
HS-No: 3402 13 00 00

Code	Capacity
T8009-2-1000	1.0 L

T

## 2,2,4-TRIMETHYLPENTANE

Synonyms: Isooctane, Isobutyltrimethylmethane, Iso-Octane



- C<sub>8</sub>H<sub>18</sub>  
- M = 114.26 g/mol  
- CAS [540-84-1]  
- EC number: 208-759-1

**Physical data:**

- Form: Liquid  
- Density: 0.69 g/cm<sup>3</sup>  
- Solub. in water (20 °C): 0.56 mg/l  
- Melting point: -170 °C  
- Boiling point: 99 °C  
- Flash point: -12 °C  
- Ignition temp.: 410 °C  
- Vapour pressure: (20 °C) 51 hPa  
- Viscosity: (22 °C) 0.51 mPas

- Dielectric const.: (20 °C) 1.9  
- Evap. heat: (99 °C) 344 kJ/kg  
- Saturation conc.: (20 °C) 239 g/m<sup>3</sup>  
- Expl. limit (upper): 6 Vol%  
- Expl. limit (lower): 1 Vol%  
- pH ~ 7

**Toxicological data:**

- LD 50 (oral, rat): > 2000 mg/kg  
- MAK: 500 ml/m<sup>3</sup>, 2400 mg/m<sup>3</sup>  
- WGK: 1

**Safety:**

- EC Index no.: 603-009-00-8  
- R: 11-38-50/53-65-67



- S: 9-16-29-33-46-60-61-62  
- VbF class: A1  
- Poison class CH (Swiss): 5

**Transport/storage:**

- ADR: 3 F1 II UN 1262  
- IMDG: 3 II UN 1262  
- IATA/ICAO: 3 II UN 1262  
- PAX: 305  
- CAO: 307  
- LGK: 3 A  
- Disposal: 1

**Special regulations:**

- Product submitted to special taxes law

### TR105-1 2,2,4-Trimethylpentane, reagent grade

Assay .....	min. 99.5%	Iron (Fe) .....	max. 0.00001%
Colour .....	max. 10 Hazen	Magnesium (Mg) .....	max. 0.00001%
Acidity .....	max. 0.0003 meq/g	Manganese (Mn) .....	max. 0.000002%
Aluminium (Al) .....	max. 0.00005%	Nickel (Ni) .....	max. 0.000002%
Barium (Ba) .....	max. 0.00001%	Lead (Pb) .....	max. 0.00001%
Boron (B) .....	max. 0.000002%	Tin (Sn) .....	max. 0.00001%
Cadmium (Cd) .....	max. 0.000005%	Zinc (Zn) .....	max. 0.00001%
Calcium (Ca) .....	max. 0.00005%	Sulphur compounds (as S) .....	max. 0.005%
Chromium (Cr) .....	max. 0.000002%	Substances Darkened by H <sub>2</sub> SO <sub>4</sub> ....	passes test
Cobalt (Co) .....	max. 0.000002%	Non-volatile matter .....	max. 0.0005%
Copper (Cu) .....	max. 0.000002%	Water .....	max. 0.01%

HS-No: 2901 10 00 00

Code	Capacity
TR105-1-2501	2.5 L

### TR105-3 2,2,4-Trimethylpentane, extra pure

Assay .....	min. 99 %	Lead (Pb) .....	max. 0.00002 %
Acidity .....	max. 0.005 meq/g	Nickel (Ni) .....	max. 0.00002 %
Sulphur compounds (as S) .....	max. 0.002 %	Non-volatile matter .....	max. 0.001 %
Copper (Cu) .....	max. 0.00002 %	Water .....	max. 0.02 %
Iron (Fe) .....	max. 0.00005 %		

HS-No: 2901 10 00 00

Code	Capacity
TR105-3-2501	2.5 L

---

**TR105-4 2,2,4-Trimethylpentane (Isooctane), spectroscopy grade**

HS-No: 2901 10 00 00

See specification in Solvents Specification - 43

<b>Code</b>	<b>Capacity</b>
TR105-4-1001	1.0 L
TR105-4-4001	4.0 L

---

**TR105-5 2,2,4-Trimethylpentane (Isooctane), spectroscopy grade**

HS-No: 2901 10 00 00

Purity (GC) .....	min. 99.8 %	Colour .....	max. 10 Hazen
Evaporation residue .....	max. 0.0005 %	Acidity .....	max. 0.0005 meq/g
Water .....	max. 0.005 %	Alkalinity .....	max. 0.0002 meq/g

<b>Code</b>	<b>Capacity</b>
TR105-5-2501	2.5 L

---

## Fluorescence

- as quinine at 254 nm .....	max. 1 ppb
- as quinine at 365 nm .....	max. 1 ppb

## Transmission

- at 205 nm .....	min. 10 %
- at 215 nm .....	min. 50 %
- at 225 nm .....	min. 80 %
- at 235 nm .....	min. 90 %
- from 255 nm .....	min. 98 %

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**TR105-11 2,2,4-Trimethylpentane (Isooctane), spectroscopy grade**

HS-No: 2901 10 00 00

See specification in Solvents Specification - 24

<b>Code</b>	<b>Capacity</b>
TR105-11-1001	1.0 L
TR105-11-4001	4.0 L

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**TR105-12 2,2,4-Trimethylpentane (Isooctane), spectroscopy grade**

HS-No: 2901 10 00 00

See specification in Solvents Specification - 15

<b>Code</b>	<b>Capacity</b>
TR105-12-1001	1.0 L
TR105-12-4001	4.0 L

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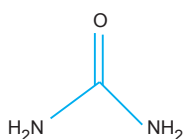


# **Chemical list : U**

# UREA



## Synonyms:



- CH<sub>4</sub>N<sub>2</sub>O  
- M = 60.06 g/mol  
- CAS [57-13-6]  
- EC number: 200-315-5]

- Solub. in water (20 °C): 590 g/l  
- Melting point: 132.5 - 134.5 °C  
- Vapour pressure: (75 °C) ~ 0.002 hPa  
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~ 9.5

## Safety:

- Poison class CH (Swiss): 5

## Transport/storage:

- LGK: 10-13  
- Disposal: 31

## Physical data:

- Spec. density: 1.34 g/cm<sup>3</sup>  
- Bulk density: ~ 750 kg/m<sup>3</sup>

## Toxicological data:

- LD 50 (oral, rat): 8471 mg/kg  
- WGK: 1

## U6006-1 Urea, reagent grade

HS-No: 3102 10 10 00

Assay .....	min. 99.5 %	Sulphate (SO <sub>4</sub> ) .....	max. 0.001 %
Insoluble matter .....	max. 0.01 %	Heavy metals (as Pb) .....	max. 0.001 %
Residue after ignition .....	max. 0.01 %	Iron (Fe) .....	max. 0.001 %
Chloride (Cl) .....	max. 5 ppm		

Code	Capacity
U6006-1-0500	500 g
U6006-1-1000	1 kg

## U6006-8 Urea 99.5%, ultra pure grade

HS-No: 3102 10 10 00

Assay .....	min. 99.5 %	Heavy metals (as Pb) .....	max. 0.001 %
A280 (5M, H <sub>2</sub> O) .....	max. 0.05 %	Iron (Fe) .....	max. 0.001 %
Melting point .....	132 - 135 °C	Cyanate .....	none detected
Chloride (Cl) .....	max. 0.0005 %	Ammonia .....	none detected

Code	Capacity
U6006-8-2500	2.5 kg

# **Chemical list : W**



## WATER

### Synonyms:

- H<sub>2</sub>O
- M = 18.02 g/mol
- CAS [7732-18-5]
- EC number: 231-71-2

### Physical data:

- Density: 1.00 g/cm<sup>3</sup>
- Melting point: 0 °C

- Boiling point: 100 °C
- Vapour pressure: (20 °C) 23 hPa
- Viscosity: (20 °C) 0.95 mPas
- Dipolar moment: (20 °C) 1.85 Debye
- Dielectric const.: (20 °C) 80.2
- Evap. heat: (20 °C) 2253 kJ/kg
- pH (20 °C) 7

### Toxicological data:

- WGK: 0

### Safety:

- Poison class CH (Swiss): F

### Transport/storage:

- LGK: 10-13

### W1001-1 DI Water 17 - 18 Mega ohm

HS-No: 2851 00 10 00

Water .....	17 - 18 mega ohm
Chloride (Cl) .....	max. 0.005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.005 %
Sulphate (SO <sub>4</sub> ) .....	max. 0.005 %

Code	Capacity
W1001-1-2500	2.5 L

### W1001-1 Water deionized, reagent grade

HS-No: 2851 00 10 00

Chloride (Cl) .....	max. 0.005 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.005 %
Sulphates (SO <sub>4</sub> ) .....	max. 0.005 %

Code	Capacity
W1001-1-9020	20 L

### W1001-3 Water, extra pure

HS-No: 2851 00 10 00

Appearance .....	clear, colorless liquid	Nitrite nitrogen .....	passes test
Acidity or alkalinity .....	passes test	Ammonium (NH <sub>4</sub> ) .....	passes test
Chloride (Cl) .....	passes test	Heavy metals (as Pb) .....	passes test
Sulfate (SO <sub>4</sub> ) .....	passes test	Substances reducing permanganate .....	passes test
Nitrate nitrogen .....	passes test	Residue after evaporation .....	max. 0.001 %

Code	Capacity
W1001-3-9020	20 L

### W1001-4 Water, HPLC grade

HS-No: 2851 00 10 00

See specification in Solvents Specification - 52

Code	Capacity
W1001-4-1001	1.0 L
W1001-4-4001	4.0 L

### W1001-13 Water, LC-MS grade

HS-No: 2851 00 10 00

See specification in Solvents Specification - 7

Code	Capacity
W1001-4-1001	1.0 L
W1001-4-4001	4.0 L

## WIJS SOLUTION



### Synonyms:

- ICI

### Physical data:

- Density: 10.6 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible (decomposes)
- Flash point: 40 °C
- pH (20 °C) < 1

### Toxicological data:

- LD 50 (oral, rat): 3310 mg/kg (chief component)
- MAK: 10 ml/m<sup>3</sup>, 25 mg/m<sup>3</sup>
- WGK: 1

### Safety:

- R: 10-35
- S: 23.2-51-26-36/37/39-45

- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 8 CF1 II UN 2920
- IMDG: 5.1 II UN 2920
- IATA/ICAO: 5.1 II UN 2920
- PAX: 809
- CAO: 813
- LGK: 3A

### W3001-0 Wijs solution for determination of the iodine number c(ICI) = 0.1 mol/l (0.1N)

HS-No: 2812 10 99 00

Amount-of-substance concentration ...	c(ICI)=0.1 mol/l±0.2 %
Titer (20 °C) .....	1.000

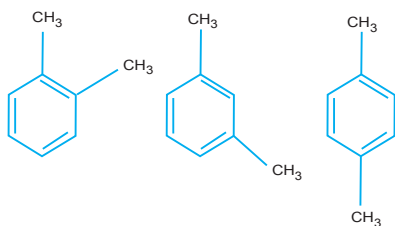
Code	Capacity
W3001-0-2501	2.5 L

**Chemical list : X**

## XYLENE, MIXTURE OF ISOMERS



Synonyms: Dimethylbenzene, Xylol



- C<sub>8</sub>H<sub>10</sub>  
 - M = 106.17 g/mol  
 - CAS [1330-20-7]  
 - EC number: 215-535-7

### Physical data:

- Density: 0.86 g/cm<sup>3</sup>  
 - Solub. in water (25 °C): 0.2 g/l  
 - Melting point: > -34 °C  
 - Boiling point: 137 - 143 °C  
 - Flash point: 25 °C  
 - Ignition temp.: ~ 465 °C

- Vapour pressure: (20 °C) 10 hPa  
 - Dielectric const.: (25 °C) 2.4  
 - Saturation conc.: (20 °C)  
 30 - 38 g/m<sup>3</sup>  
 - Expl. limit (upper): 7.5 Vol%  
 - Expl. limit (lower): 1.7 Vol%

### Toxicological data:

- LD 50 (oral, rat): 4300 mg/kg  
 - MAK: 100 ml/m<sup>3</sup>, 440 mg/m<sup>3</sup>  
 - WGK: 2

### Safety:

- EC Index no.: 601-022-00-9 [4]  
 - R: 10-20/21-38  
 - S: 25-36/37  
 - VbF class: All  
 - Poison class CH (Swiss): 4

### Transport/storage:

- ADR: 3 F1 III UN 1307  
 - IMDG: 3 III UN 1307  
 - IATA/ICAO: 3 III UN 1307  
 - PAX: 309  
 - CAO: 310  
 - LGK: 3 A  
 - Disposal: 1

### X8001-1 Xylene, mixture of isomers, reagent grade

HS-No: 2902 44 00 00

Assay (Xylene isomers +

Ethylbenzene < 25 %) ..... min. 98.5 %  
 Colour ..... max. 10 APHA  
 Residur After Evaporation ..... max. 0.002 %

Substances Darkened by Sulphuric

Acid ..... passes test  
 Sulphur compounds (as S) ..... max. 0.003 %  
 Water ..... max. 0.05 %

Code	Capacity
X8001-1-2501	2.5 L

### X8008-1 Xylenol orange, tetrasodium salt, reagent grade

HS-No: 2902 44 00 00

Absorption maximum a (pH 14.0) ... 582 - 585 nm  
 Absorptivity (A1%/1cm; a max,  
 pH 14.0 on dried material) ..... 600 - 650

Suitability as indicator for metal

titration ..... passes test  
 Loss on drying (110 °C) ..... max. 7%

Code	Capacity
X8008-1-0005	5 g

# Chemical list : Z

## ZINC STANDARD SOLUTION 1000MG/L FOR AA



Synonyms: Zinc nitrate in nitric acid 0.5 mol/l

### Physical data:

- Density: ~ 1.02 g/cm<sup>3</sup>
- Solub. in water (20 °C): miscible
- pH (20 °C) < 1

### Safety:

- R: 36/38
- S: 26-37
- Poison class CH (Swiss): 3

### Transport/storage:

- ADR: 8 C1 III UN 3264
- IMDG: 8 III UN 3264
- IATA/ICAO: 8 III UN 3264
- PAX: 818
- CAO: 820
- LGK: 8 B

### Z1001-0 Zinc standard solution 1000mg/l for AA

HS-No: 3822 00 00 00

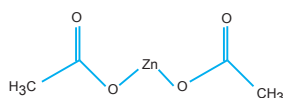
Composition ..... 1000±5 mg/l

Code	Capacity
Z1001-0-0500	500 ml

## ZINC ACETATE DIHYDRATE



Synonyms: Acetic acid zinc salt dihydrate



- Zn(CH<sub>3</sub>COO)<sub>2</sub>·2H<sub>2</sub>O
- M = 219.49 g/mol
- CAS [5970-45-6]
- EC number: 209-170-2

- Solub. in water (20 °C): 430 g/l
- Melting point: ~ 100 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 6 - 8

### Safety:

- R: 22
- S: 25-46
- Poison class CH (Swiss): 3

### Toxicological data:

- LD 50 (oral, rat): 794 mg/kg
- WGK: 1

### Transport/storage:

- LGK: 10-13
- Disposal: 15

### Z3005-1 Zinc acetate dihydrate, reagent grade

HS-No: 2915 29 00 90

Assay (complexometric) .....	min. 99.5 %	Copper (Cu) .....	max. 0.0005 %
Insoluble in (CH <sub>3</sub> COOH) (0.5%) .....	max. 0.005 %	Iron (Fe) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	6 - 7	Lead (Pb) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.0005 %	Magnesium (Mg) .....	max. 0.0005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.005 %	Manganese (Mn) .....	max. 0.0005 %
Total N .....	max. 0.001 %	Potassium (K) .....	max. 0.001 %
Cadmium (Cd) .....	max. 0.0005 %	Sodium (Na) .....	max. 0.001 %
Calcium (Ca) .....	max. 0.001 %		

Code	Capacity
Z3005-1-1000	1 kg

## ZINC CARBONATE

Synonyms:

- CAS [5263-02-5]
- EC number: 226-076-7

- pH value ~ 9.5 (50 g/l, H<sub>2</sub>O, 20 °C) (suspension)
- Melting point: 1970 °C
- Bulk density ~ 400 kg/m<sup>3</sup>

### Safety:

- Poison class CH 4
- WGK: 1

### Physical data:

- Spec. density: 3.5 g/cm<sup>3</sup> (20 °C)
- Solub. in water (20 °C): almost insoluble

### Toxicological data:

- LD 50 (oral, rat) > 10000 mg/kg

### Transport/storage:

- LGK: 10-13

### Z3010-3 Zinc carbonate, extra pure

HS-No: 2836 99 18 00

Assay (complexometric, Zn) .....	min. 58.0 %	Iron (Fe) .....	max. 0.02 %
Chloride (Cl) .....	max. 0.05 %	Lead (Pb) .....	max. 0.002 %
Sulphate (SO <sub>4</sub> ) .....	max. 0.5 %	Residue on ignition .....	70 - 80 %
Arsenic (As) .....	max. 0.0005 %	Bulk density .....	35 - 45 g/100ml
Calcium (Ca) .....	max. 0.5 %		

Code	Capacity
Z3010-3-0500	500 g

## ZINC CHLORIDE



Synonyms:

- ZnCl<sub>2</sub>
- M = 136.28 g/mol
- CAS [7646-85-7]
- EC number: 231-592-0

- Solub. in water (20 °C): soluble
- Melting point: 318 °C
- Boiling point: 730 °C
- pH (100 g/l H<sub>2</sub>O, 20 °C) ~ 5

### Safety:

- R: 22-34-50/53
- S: 28.1-26-36/37/39-45-60-61
- Poison class CH (Swiss): 3

### Physical data:

- Form: Solid
- Spec. density: ~ 2.9 g/cm<sup>3</sup>
- Bulk density: ~ 1400 - 1800 kg/m<sup>3</sup>

### Toxicological data:

- LD 50 (oral, rat): 350 mg/kg
- WGK: 1

### Safety:

- EC Index no.: 030-003-00-2

### Transport/storage:

- ADR: 8 C2 III UN 2331
- IMDG: 8 III UN 2331
- IATA/ICAO: 8 III UN 2331
- PAX: 822
- CAO: 823
- LGK: 8 B
- Disposal: 24

### Z3015-0 Zinc chloride, CP grade

HS-No: 2827 36 00 00

Assay .....	min. 98 %	Lead .....	max. 0.01 %
Sulphate .....	max. 0.03 %	NO <sub>2</sub> .....	max. 0.006 %
Iron .....	max. 0.002 %		

Code	Capacity
Z3015-0-1000	1 kg

**Z3015-1 Zinc chloride, reagent grade**

HS-No: 2827 36 00 00

Assay (complexometric) .....	min. 98 %	Cadmium (Cd) .....	max. 0.0005 %
Insoluble substances .....	max. 0.005 %	Calcium (Ca) .....	max. 0.001 %
Oxichloride (acidimetric, as ZnO) ...	max. 1.2 %	Copper (Cu) .....	max. 0.001 %
pH (10%, H <sub>2</sub> O) .....	4.6 - 5.5	Iron (Fe) .....	max. 0.0005 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.003 %	Lead (Pb) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.002 %	Magnesium (Mg) .....	max. 0.001 %
Total N .....	max. 0.001 %	Potassium (K) .....	max. 0.001 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.005 %	Sodium (Na) .....	max. 0.001 %

Code	Capacity
Z3015-1-0250	250 g

**Z3015-3 Zinc chloride, extra pure**

HS-No: 2827 36 00 00

Assay (complexometric) .....	min. 98 %	Arsenic (As) .....	max. 0.0002 %
Appearance of solution .....	passes test	Calcium (Ca) .....	max. 0.01 %
pH (10%, H <sub>2</sub> O) .....	4.6 - 5.5	Iron (Fe) .....	max. 0.001 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Lead (Pb) .....	max. 0.005 %
Total N .....	max. 0.001 %	Potassium (K) .....	max. 0.15 %
Aluminium, calcium, magnesium iron, heavy metals .....	passes test	Sodium (Na) .....	max. 0.01 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.04 %	Organic volatile impurities .....	passes test

Code	Capacity
Z3015-3-0500	500 g
Z3015-3-1000	1 kg

**ZINC NITRATE HEXAHYDRATE**

Synonyms: Nitric acid zinc salt hexahydrate

- Zn(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O
- M = 297.46 g/mol
- CAS [10196-18-6]
- EC number: 231-943-8

**Physical data:**

- Spec. density: 2.06 g/cm<sup>3</sup>
- Solub. in water (20 °C): soluble
- Melting point: ~ 36 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) 5.1

**Toxicological data:**

- LD 50 (oral, rat): 1190 mg/kg
- WGK: 1

**Safety:**

- R: 8-22-36/37/38
- S: 26-46
- Poison class CH (Swiss): 3

**Transport/storage:**

- ADR: 5.1 O2 II UN 1514
- IMDG: 5.1 II UN 1514
- IATA/ICAO: 5.1 II UN 1514
- PAX: 508
- CO: 511
- LGK: 5.1B

**Z3020-1 Zinc nitrate hexahydrate, reagent grade**

HS-No: 2834 29 80 00

Assay (complexometric) .....	min. 98.5 %	Cadmium (Cd) .....	max. 0.001 %
Insoluble in water .....	max. 0.005 %	Copper (Cu) .....	max. 0.0005 %
Free acid (as HNO <sub>3</sub> ) .....	max. 0.02 %	Iron (Fe) .....	max. 0.001 %
Chlorides (Cl) .....	max. 0.002 %	Lead (Pb) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Magnesium (Mg) .....	max. 0.002 %
Ammonium (NH <sub>4</sub> ) .....	max. 0.01 %	Nickel (Ni) .....	max. 0.0005 %

Code	Capacity
Z3020-1-0500	500 g

**ZINC OXIDE****Z**

Synonyms:

- ZnO
- M = 81.37 g/mol
- CAS [1314-13-2]
- EC number: 215-222-5

**Physical data:**

- Spec. density: 5.47 g/cm<sup>3</sup>
- Bulk density: ~ 300 - 500 kg/m<sup>3</sup>
- Solub. in water (20 °C): insoluble

- Melting point: ~ 1970 °C
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 7

**Toxicological data:**

- LD 50 (oral, rat): > 8437 mg/kg
- MAK: 1.5 mg/m<sup>3</sup>
- WGK: 0

**Safety:**

- Poison class CH (Swiss): F

**Transport/storage:**

- LGK: 10-13
- Disposal: 15

**Z3027-1 Zinc oxide, reagent grade**

HS-No: 2817 00 00 11

Assay (complexometric) .....	min. 99 %	Calcium (Ca) .....	max. 0.001 %
Insoluble in H <sub>2</sub> SO <sub>4</sub> .....	max. 0.01 %	Copper (Cu) .....	max. 0.0005 %
Free alkali .....	passes test	Iron (Fe) .....	max. 0.0005 %
Chlorides (Cl) .....	max. 0.001 %	Lead (Pb) .....	max. 0.002 %
Nitrates (NO <sub>3</sub> ) .....	max. 0.003 %	Magnesium (Mg) .....	max. 0.002 %
Phosphates (PO <sub>4</sub> ) .....	max. 0.0005 %	Manganese (Mn) .....	max. 0.005 %
Sulfates (SO <sub>4</sub> ) .....	max. 0.01 %	Potassium (K) .....	max. 0.002 %
Total N .....	max. 0.0005 %	Sodium (Na) .....	max. 0.001 %
Arsenic (As) .....	max. 0.00005 %	KMnO <sub>4</sub> red. matter (as O) .....	max. 0.001 %
Cadmium (Cd) .....	max. 0.0005 %	Loss on ignition (500 °C) .....	max. 0.5 %

Code	Capacity
Z3027-1-1000	1 kg

## ZINC SULFATE HEPTAHYDRATE



Synonyms: Sulfuric acid zinc salt heptahydrate, Zinc vitriol

- ZnSO<sub>4</sub>·7H<sub>2</sub>O
- M = 287.54 g/mol
- CAS [7446-20-0]
- EC number: 231-793-3

**Physical data:**

- Spec. density: 1.97 g/cm<sup>3</sup>
- Bulk density: ~ 800 - 1000 kg/m<sup>3</sup>
- Solub. in water (20 °C): 960 g/l
- Melting point: ~ 40 °C (decomposes)
- pH (50 g/l H<sub>2</sub>O, 20 °C) ~ 4 - 6

**Toxicological data:**

- LD 50 (oral, rat): > 2150 mg/kg
- WGK: 1

**Safety:**

- EC Index no.: 030-006-00-9
- R: 36/38-50/53
- S: 22-25-60-61
- Poison class CH (Swis): 3

**Transport/storage:**

- ADR: 9 M7 III UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- PAX: 911
- CAO: 911
- LGK: 10-13
- Disposal: 15

### Z3038-1 Zinc sulfate heptahydrate, reagent grade

HS-No: 2833 26 00 00

Assay (complexometric) .....	min. 99.5 %	Copper (Cu) .....	max. 0.0005 %
pH (5%, H <sub>2</sub> O) .....	4.4 - 5.6	Iron (Fe) .....	max. 0.0005 %
Chloride (Cl) .....	max. 0.0005 %	Lead (Pb) .....	max. 0.0005 %
Total N .....	max. 0.0005 %	Magnesium (Mg) .....	max. 0.001 %
Arsenic (As) .....	max. 0.00005 %	Manganese (Mn) .....	max. 0.0002 %
Cadmium (Cd) .....	max. 0.0002 %	Potassium (K) .....	max. 0.001 %
Calcium (Ca) .....	max. 0.001 %	Sodium (Na) .....	max. 0.0005 %

Code	Capacity
Z3038-1-0500	500 g
Z3038-1-1000	1 kg

## ZINC SULFATE, VOLUMETRIC SOLUTIONS

### Z3042-0 Zinc sulfate, solution 0.05 mol/l (0.025N)

Synonyms: Zinc vitriol

- ZnSO<sub>4</sub>·7H<sub>2</sub>O
- M = 287.54 g/mol
- CAS [7446-20-0]
- EC number: 231-793-3

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 030-006-00-9
- R: 51/53
- S: 61

**Transport/storage:**

- LGK: 10-13
- Disposal: 15

1ml = 0.00807 g ZnSO<sub>4</sub>

HS-No: 2833 26 00 00

Code	Capacity
Z3042-0-1000	1.0 L

### Z3043-0 Zinc sulfate, solution 0.1 mol/l (0.05N)

Synonyms: Zinc vitriol

- ZnSO<sub>4</sub>·7H<sub>2</sub>O
- M = 287.54 g/mol
- CAS [7446-20-0]
- EC number: 231-793-3

**Toxicological data:**

- WGK: 1

**Safety:**

- EC Index no.: 030-006-00-9
- R: 51/53
- S: 61

**Transport/storage:**

- LGK: 10-13
- Disposal: 15

1ml = 0.01614 g ZnSO<sub>4</sub>

HS-No: 2833 26 00 00

Code	Capacity
Z3043-0-1000	1.0 L

## ZINC



Synonyms:

- Zn
- M = 65.38 g/mol
- CAS [7440-66-6]
- EC number: 231-175-3

**Physical data:**

- Spec. density: 7.14 g/cm<sup>3</sup>
- Solub. in water (20 °C): hydrolysis reaction
- Melting point: 420 °C

- Boiling point: 908 °C
- Ignition temp.: 460 °C
- Vapour pressure: (487 °C) 1.33 hPa

**Toxicological data:**

- WGK: 0

**Safety:**

- EC Index no.: 030-002-00-7
- R: 10-15

- S: 7/8-43.3
- Poison class CH (Swiss): F

**Transport/storage:**

- ADR: 4.3 WS II UN 1436
- IMDG: 4.3 II UN 1436
- IATA/ICAO: 4.3 II UN 1436
- PAX: 415
- CAO: 417
- LGK: 4.3
- Disposal: 15

### Z3045-3 Zinc powder, extra pure

HS-No: 7903 90 00 00

Assay (complexometric) .....	min. 97 %	Cadmium (Cd) .....	max. 0.005 %
Insoluble in hydrochloric acid .....	max. 0.05 %	Iron (Fe) .....	max. 0.005 %
Arsenic (As) .....	max. 0.00001 %	Lead (Pb) .....	max. 0.01 %

Code	Capacity
Z3045-3-1000	1 kg



LV-MS  
Ultimate  
Pesticide  
HPLC  
DAN Biosynthesis  
Ultra Dry



High Purity  
Solvents



# **General Product Guide**



# GENERAL PRODUCT GUIDE

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY

# LC - MS

No LC-MS TIC signals higher than 100ppb Reserpine

## Features

- No LC-MS TIC signals higher than  
50ppb Reserpine (ESI + mode)  
50ppb 4-Nitrophenol (ESI - mode)
- Very low metal concentration (<100ppb)
- Low particles

## Applications

- LC-MS
- HPLC
- Spectrophotometry

## Packaging

- 1L, 4L Glass bottle

## ITEM

Acetonitrile

Methanol

Water

# Ultimate solvents

## Features

- Highest Quality !
- Multi purpose grade for HPLC, Trace organic analysis by GC-ECD/GC-FID & Spectrophotometry
- Minimal UV Absorbance
- Low water, residue after evaporation
- Low organic impurities

## Applications

- HPLC
- Trace organic analysis by GC-ECD / GC-FID
- Spectrophotometry
- Applications requiring ACS reagent-grade solvent

## Packaging

- 1L, 4L Glass bottle



## ITEM

Acetone

Acetonitrile

Benzene

Chloroform (stabilized with Amylene)

Chloroform (stabilized with Ethanol)

Dichloromethane

Ethyl Acetate

Ethyl Ether (stabilized with Ethanol)

n-Heptane 97%

n-Heptane 99%

n-Hexane 95%

Isooctane

Methanol

Methyl t-Butyl Ether

n-Pentane

Petroleum Ether (35~60 °C)

2-Propanol

Toluene



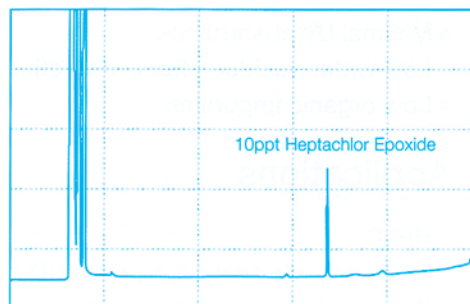
# Pesticide Solvents

## Features

- Meets Extraction-Concentration Suitability (GC-ECD)
- Low water content and residue after evaporation

## Applications

- Pesticide Multi residue Analysis by GC-ECD
- Gas Chromatography



## Packaging

- 1L, 4L Glass bottle

## ITEM

Acetone

Acetonitrile

Benzene

1-Butanol

Chloroform (stabilized with Amylene)

Chloroform (stabilized with Ethanol)

Cyclohexane

Dichloromethane

Ethyl Acetate

Ethyl Ether (stabilized with Ethanol)

n-Heptane 97%

n-Heptane 99%

n-Hexane 95%

Isooctane

Methanol

Methyl t-Butyl Ether

n-Pentane

Petroleum Ether (35~60 °C)

2-Propanol

Sodium sulfate, Anhydrous

Toluene

# HPLC Solvents

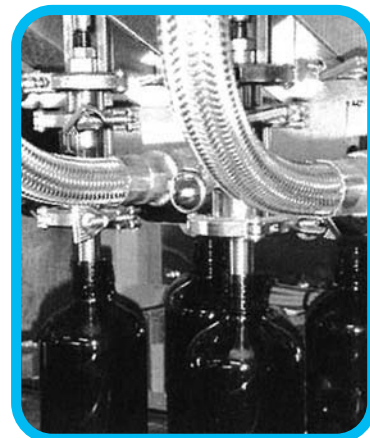
## Solvents

### Features

- ACS Certified
- Low UV absorbance, High GC assay
- Low water content and residue after evaporation
- Packaged with Nitrogen & Sub-micron filtration

### Applications

- HPLC
- Spectrophotometry
- Applications requiring ACS reagent-grade solvent



### Packaging

- 1L, 4L Glass bottle

## ITEM

Acetic acid, glacial

Acetone

Acetonitrile

Benzene

1-Butanol

n-Butyl acetate

Chlorobenzene

Chloroform (stabilized with Amylene)

Chloroform (stabilized with Ethanol)

Cyclohexane

o-Dichlorobenzene

1,2-Dichloromethane

Dichloromethane

N,N-Dimethylacetamide

N,N-Dimethylformamide

Dimethyl Sulfoxide

1,4-Dioxane

Ethanol

## HPLC Solvents

### ITEM

Ethyl Acetate  
Ethyl Ether (stabilized with Ethanol)  
n-Heptane 97%  
n-Heptane 99%  
n-Hexane 95%  
Isooctane  
Methanol  
Methyl t-Butyl Ether  
Methyl Ethyl Ketone  
Methyl Isobutyl Ketone  
N-Methyl-2-Pyrrolidone  
n-Pentane  
Petroleum Ether (35~60 °c)  
1-Propanol  
2-Propanol  
Pyridine  
Tetrahydrofuran  
Tetrahydrofuran (stabilized with BHT)  
Toluene  
Water

## Acid & Buffers for HPLC

### ITEM

Ammonium acetate  
Ammonium carbonate  
Ammonium phosphate, monobasic  
Phosphoric acid 85%  
Potassium phosphate, monobasic  
Sodium acetate trihydrate  
Sodium bicarbonate

# BIO Solvents

## Features

- Specially purified for Bio synthesis
- Minimal water contents to optimize the yields in Bio synthesis
- Low water content and non-volatile residue

## Applications

- Biosynthesis
  - : nucleic acid & peptide synthesis
- Spectrophotometry
- Applications requiring Low-water solvent

## Packaging

- 1L, 4L Glass bottle

## ITEM

Acetonitrile

Dichloromethane (stabilized with Amylene)

N,N - Dimethylformamide

Dimethyl Sulfoxide

Methanol

N-Methyl-2-Pyrrolidone

Pyridine

Tetrahydrofuran

Triethylamine

# Ultra Dry Solvents

---

## Features

- Specially designed process for low water content
- Minimal water contents from 10 ppm to 50 ppm

## Applications

- Biosynthesis
- Applications requiring Low-water solvent

## Packaging

- 1L, 4L Glass bottle
- 

## ITEM

Acetonitrile (water 10)

Acetonitrile (water 30)

Chloroform (stabilized with Ethanol)

1,4 - Dioxane

Ethyl Acetate

Ethyl ether (stabilized with Ethanol)

n-Hexane 95%

Methanol

Pyridine

Toluene

# **Solvent Specifications**





**SOLVENT NAME SYNONYMS**

LC - MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY

## Solvent name synonyms

Solvent name	QRec Product	CAS No.
Ammonium dihydrogen Phosphate	Ammonium phosphate, monobasic	7722-76-1
n-Butyl Alcohol	1-Butanol	71-36-3
2-Butanone	Methyl Ethyl Ketone	78-93-3
tert-Butyl Methyl Ether	Methyl t-Butyl Ether	1634-04-4
DCM	Dichloromethane	75-09-2
DMAC	N,N-Dimethylacetamide	127-19-5
DMF	N,N-Dimethylformamide	68-12-2
DMSO	Dimethyl Sulfoxide	67-68-5
1,2-Dichlorobenzene	o-Dichlorobenzene	95-50-1
Diethyl ether	Ethyl Ether	60-29-7
Diethylene Dioxide	1,4-Dioxane	123-91-1
Diethylene Ether	1,4-Dioxane	123-91-1
Ether	Ethyl Ether	60-29-7
Ethyl Alcohol	Ethanol	64-17-5
Ethyl Methyl Ketone	Methyl Ethyl Ketone	78-93-3
Ethylene Dichloride	1,2-Dichloroethane	107-06-2
Isopropanol	2-Propanol	67-63-0
Isopropyl Alcohol	2-Propanol	67-63-0
MEK	Methyl Ethyl Ketone	78-93-3
MBK	Methyl Isobutyl Ketone	108-10-1
MTBE	Methyl t-Butyl Ether	1634-04-4
Methyl Alcohol	Methanol	67-56-1
Methyl Cyanide	Acetonitrile	75-05-8
Methylene Chloride	Dichloromethane	75-09-2
4-Methyl-2-Pentanone	Methyl Isobutyl Ketone	108-10-1
1-Methyl-2-Pyrrolidinone	N-Methyl-2-Pyrrolidone	872-50-4
N-Methyl-2-Pyrrolidinone	N-Methyl-2-Pyrrolidone	872-50-4

Solvent name	QRec Product	CAS No.
N-Methylpyrrolidone	N-Methyl-2-Pyrrolidone	872-50-4
1-Methyl-2-pyrrolidinone	N-Methyl-2-Pyrrolidone	872-50-4
Methyl Sulfoxide	Dimethyl Sulfoxide	67-68-5
Monochlorobenzene	Chlorobenzene	108-90-7
NMP	N-Methyl-2-Pyrrolidone	872-50-4
n-Propyl Alcohol	1-Propanol	71-23-8
n-Propanol	1-Propanol	71-23-8
Potassium dihydrogen phosphate	Potassium phosphate, monobasic	7778-77-0
Sodium hydrogen carbonate	Sodium bicarbonate	144-55-8
TEA	Triethylamine	121-44-8
THF	Tetrahydrofuran	109-99-9
TMP	Isooctane	540-84-1
2,2,4-Trimethylpentane	Isooctane	540-84-1



## SOLVENT SPECIFICATIONS

SOLVENT NAME SYNONYMS

**LC - MS**

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY

# DSP LC-MS

Item	LC-MS Suitability		Metal impurities		
	ESI +, Reserpine (max. ppb)	ESI -, 4-Nitrophenol (max. ppb)	Na (ppb)	Al, Ca, Mg, K (ppb)	Ba, Cd, Cr, Co, Cu, Fe Pb, Li, Ni, Sn, Zn (PPb)
Acetonitrile	50	50	50	25	5
Methanol	50	50	50	25	5
Water	50	50	50	25	5

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY

## Acetonitrile



### LC-MS Grade

- Formula: CH<sub>3</sub>CN
- F.W.: 41.05
- CAS: 75-05-8

### A1133-13 Acetonitrile, LC-MS Grade

HS-No: 2926 90 95 90

#### LC-MS Suitability

ESI+ mode (as Reserpine) .....	50 ppb
ESI- mode (as 4-Nitrophenol) .....	50 ppb
Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.01 %
Residue after evapoartion .....	1 ppm
Titration acid .....	0.008 meq/g
Titration base .....	0.0003 meq/g
Ultra Violet Spectrophotometry	
Maximum UV Absorbance	
190nm .....	1.00
195nm .....	0.15
200nm .....	0.05
205nm .....	0.04
210nm .....	0.02
220nm .....	0.01
254nm .....	0.005
LC Gradient Suitability .....	To pass test

#### Metal impurities

Aluminum (Al) .....	25 ppb
Barium (Ba) .....	5 ppb
Cadmium (Cd) .....	5 ppb
Calcium (Ca) .....	25 ppb
Chromium (Cr) .....	5 ppb
Cobalt (Co) .....	5 ppb
Copper (Cu) .....	5 ppb
Iron (Fe) .....	5 ppb
Lead (Pb) .....	5 ppb
Magnesium (Mg) .....	25 ppb
Manganese (Mn) .....	5 ppb
Lithium (Li) .....	5 ppb
Nickel (Ni) .....	5 ppb
Potassium (K) .....	25 ppb
Silver (Ag) .....	5 ppb
Sodium (Na)* .....	50 ppb
Tin (Sn) .....	5 ppb
Zinc (Zn) .....	5 ppb

\* May change over time

Code	Capacity
A1133-13-1001	1.0 L
A1133-13-4001	4.0 L

## Methanol



### LC-MS Grade

- Formula: CH<sub>3</sub>OH
- F.W.: 32.04
- CAS: 67-56-1

### M2097-13 Methanol, LC-MS Grade

HS-No: 2905 11 00 00

#### LC-MS Suitability

ESI+ mode (as Reserpine) .....	50 ppb
ESI- mode (as 4-Nitrophenol) .....	50 ppb
Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.05 %
Residue after evapoartion .....	10 ppm
Titration acid .....	0.0003 meq/g
Titration base .....	0.0002 meq/g
Ultra Violet Spectrophotometry	
Maximum UV Absorbance	
205nm .....	1.00
220nm .....	0.25
230nm .....	0.15
254nm .....	0.02
280nm .....	0.01
LC Gradient Suitability .....	To pass test

#### Metal impurities

Aluminum (Al) .....	25 ppb
Barium (Ba) .....	5 ppb
Cadmium (Cd) .....	5 ppb
Calcium (Ca) .....	25 ppb
Chromium (Cr) .....	5 ppb
Cobalt (Co) .....	5 ppb
Copper (Cu) .....	5 ppb
Iron (Fe) .....	5 ppb
Lead (Pb) .....	5 ppb
Magnesium (Mg) .....	25 ppb
Manganese (Mn) .....	5 ppb
Lithium (Li) .....	5 ppb
Nickel (Ni) .....	5 ppb
Potassium (K) .....	25 ppb
Silver (Ag) .....	5 ppb
Sodium (Na)* .....	50 ppb
Tin (Sn) .....	5 ppb
Zinc (Zn) .....	5 ppb

\* May change over time

Code	Capacity
M2097-13-1001	2.5 L
M2097-13-4001	4.0 L



# Water

## LC-MS Grade

- Formula: H<sub>2</sub>O
- F.W.: 18.01
- CAS: 7732-18-5

## W1001-13 Water, LC-MS Grade

HS-No: 2851 00 10 00

### LC-MS Suitability

ESI+ mode (as Reserpine) .....	50 ppb
ESI- mode (as 4-Nitrophenol) .....	50 ppb
Color (APHA) .....	10
Residue after evapoartion .....	10 ppm
Ultra Violet Spectrophotometry	
Maximum UV Absorbance	
190nm .....	0.01
200nm .....	0.01
250 ~ 400nm .....	0.005
LC Gradient Suitability .....	To pass test

### Metal impurities

Aluminium (Al) .....	25 ppb
Barium (Ba) .....	5 ppb
Cadmium (Cd) .....	5 ppb
Calcium (Ca) .....	25 ppb
Chromium (Cr) .....	5 ppb
Cobalt (Co) .....	5 ppb
Copper (Cu) .....	5 ppb
Iron (Fe) .....	5 ppb
Lead (Pb) .....	5 ppb
Magnesium (Mg) .....	25 ppb
Manganese (Mn) .....	5 ppb
Lithium (Li) .....	5 ppb
Nickel (Ni) .....	5 ppb
Potassium (K) .....	25 ppb
Siver (Ag) .....	5 ppb
Sodium (Na)* .....	50 ppb
Tin (Sn) .....	5 ppb
Zin (Zn) .....	5 ppb

### Code Capacity

W1001-13-1001	1.0 L
W1001-13-4001	4.0 L

\* May change over time

LC-MS

ULTIMATE

PESTICIDE

HPPLC

BIO

ULTRA DRY

## SOLVENT SPECIFICATIONS

SOLVENT NAME SYNONYMS

LC - MS

**ULTIMATE**

PESTICIDE

HPLC

BIO

ULTRA DRY

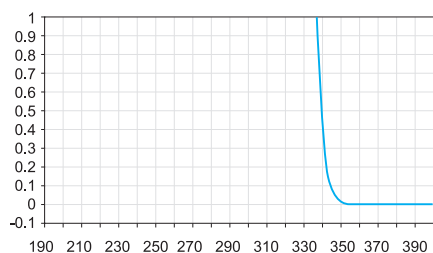
# Ultimate

Item	Extraction-Concentration Suitability		UV	Assay (min. %)	Water (max. %)	Residue aft. evaporation (max. ppm)
	ECD (max. ppt)	FID (max. ppt)	Cutoff (max. nm)			
Acetone	10	5	330	99.9	0.2	1
Acetonitrile	10	5	<190	99.9	0.01	1
Benzene	10		280	99.9	0.03	1
Chloroform w /Amylene	10	5	245	99.9	0.02	1
chloroform w /Ethanol	10	5	245	99.9	0.02	1
Dichloromethane	10	5	233	99.9	0.02	1
Ethyl Acetate	10	5	255	99.9	0.02	1
Ethyl Ether w /Ethanol	10	5	218	99.9	0.01	1
n-Heptane 97%	10	5	197	97	0.02	1
n-Heptane 99%	10	5	197	99	0.02	1
n-Hexane 95%	10	5	195	95	0.02	1
Isooctane	10	5	205	99.8	0.02	1
Methanol	10	5	205	99.9	0.05	1
Methyl t-Butyl Ether	10	5	210	99.5	0.05	1
n-Pentane	10	5	190	98	0.02	1
Petroleum Ether 35~60 °C	10	5	-	-	0.01	1
2-Propanol	10	5	205	99.9	0.05	1
Toluene	10	5	286	99.9	0.02	1

## Acetone



### Ultimate Grade



- Formula:  $(\text{CH}_3)_2\text{CO}$
- F.W.: 58.08
- CAS: 67-64-1

#### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.56
- Polarity Index ( $P'$ ): 5.1
- Viscosity (cP, 25 °C): 0.306
- Density (g/ml, 25 °C): 0.785
- Boiling point (°C): 56
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.357

### A1084-12 Acetone, Ultimate Grade

HS-No: 2914 11 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
330 nm .....	1.00
340 nm .....	0.06
350 nm .....	0.01
UV Cutoff .....	max. 330 nm
Assay (by GC) .....	min. 99.9 %

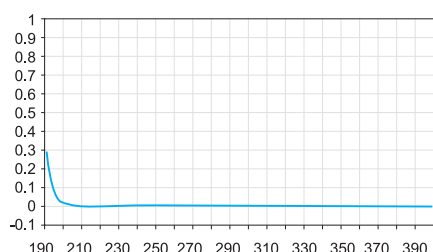
Color (APHA) .....	10
Water .....	0.2 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Titrate acid .....	0.0003 mEq/g
Titrate base .....	0.0006 mEq/g
Solubility in water .....	To pass test
Substances reducing permanganate	To pass test
Aldehyde (as HCHO) .....	0.002 %
Methanol (as $\text{CH}_3\text{OH}$ ) .....	0.05 %
Isopropyl Alcohol (as $(\text{CH}_3)_2\text{CHOH}$ )	0.05 %

Code	Capacity
A1084-12-1001	1.0 L
A1084-12-4001	4.0 L

## Acetonitrile



### Ultimate Grade



- Formula:  $\text{CH}_3\text{CN}$
- F.W.: 41.05
- CAS: 75-05-8

#### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.65
- Polarity Index ( $P'$ ): 5.8
- Viscosity (cP, 25 °C): 0.369
- Density (g/ml, 25 °C): 0.779
- Boiling point (°C): 82
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.342

### A1133-12 Acetonitrile, Ultimate Grade

HS-No: 2926 90 95 90

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
190 nm .....	1.00
195 nm .....	0.15
200 nm .....	0.05
205 nm .....	0.04
210 nm .....	0.02

220 nm .....	0.01
254 nm .....	0.009
UV Cutoff .....	max. 190 nm

#### LC Gradient Suitability

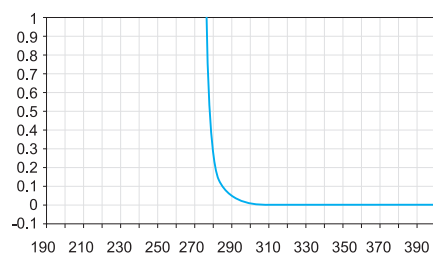
Gradient Elution test .....	To pass test
Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.01 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	0.008 mEq/g
Titrate acid .....	To pass test
Titrate base .....	0.0006 mEq/g

Code	Capacity
A1133-12-2501	2.5 L
A1133-12-4001	4.0 L

## Benzene



### Ultimate Grade



- Formula: C<sub>6</sub>H<sub>6</sub>
- F.W.: 78.10
- CAS: 71-43-2

#### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.32
- Viscosity (cP, 25 °C): 0.604
- Density (g/ml, 25 °C): 0.872
- Boiling point (°C): 80
- Solubility of water (% , 25 °C): 0.063
- Refractive index (25 °C): 1.498

### B2027-12 Benzene, Ultimate Grade

HS-No: 2902 20 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue  
(as Heptachlor epoxide) ..... max. 10 ppt

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

280 nm	1.00
290 nm	0.15
300 nm	0.05
330 nm	0.01
350 nm	0.005

UV Cutoff ..... max. 280 nm

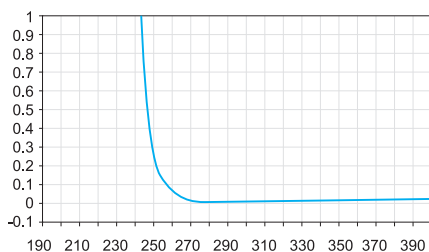
Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.03 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Substances darkened by	
sulfuric acid .....	To pass test
Thiophene (limit about 1 ppm) .....	To pass test
Sulfur compounds (as S) .....	0.005 %

Code	Capacity
B2027-12-1001	1.0 L
B2027-12-4001	4.0 L

## Chloroform (Stabilized with Amylene)



### Ultimate Grade



- Formula: CHCl<sub>3</sub>
- F.W.: 119.38
- CAS: 67-66-3
- Stabilized with 40~20 ppm Amylene

#### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.40
- Polarity Index (P'): 4.1
- Viscosity (cP, 25 °C): 0.537
- Density (g/ml, 25 °C): 1.480
- Boiling point (°C): 61
- Solubility of water (% , 20 °C): 0.056
- Refractive index (25 °C): 1.444

### C3059-12 Chloroform (Stabilized with Amylene), Ultimate Grade

HS-No: 2903 13 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue  
(as Heptachlor epoxide) ..... max. 10 ppt

FID Detectable residue  
(as 2-Octanol) ..... max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

245 nm	1.00
250 nm	0.33
254 nm	0.15
270 nm	0.02
280 nm	0.01

UV Cutoff ..... max. 245 nm

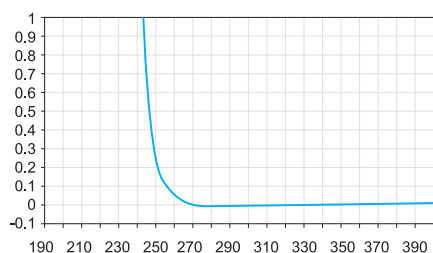
Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Preservative (Amylene) .....	40 ~ 200 ppm
Lead (Pb) .....	0.05 ppm
Acid and Chloride .....	To pass test
Free Chlorine .....	To pass test
Suitability for use in Dithizone test ..	To pass test
Acetone and Aldehyde .....	0.005 %

Code	Capacity
C3057-4-1001	1.0 L
C3057-4-4001	4.0 L

## Chloroform (Stabilized with Ethanol)



### Ultimate Grade



- Formula:  $\text{CHCl}_3$
- F.W.: 119.38
- CAS: 67-66-3
- Stabilized with 0.5~1.0% Ethanol

#### Physical Data:

- Eluotropic value ( $E^0$ ) (on Alumina): 0.40
- Polarity Index ( $P'$ ): 4.1
- Viscosity (cP, 25 °C): 0.537
- Density (g/ml, 25 °C): 1.480
- Boiling point (°C): 61
- Solubility of water (% , 20 °C): 0.056
- Refractive index (25 °C): 1.444

## C3059-12 Chloroform (Stabilized with Ethanol), Ultimate Grade

HS-No: 2903 13 00 00

### Extraction-Concentration Suitability

Code	Capacity
C3058-12-1001	1.0 L
C3058-12-4001	4.0 L

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Preservative (Ethanol) .....	0.5 ~ 1.0 %
Lead (Pb) .....	0.05 ppm
Acid and Chloride .....	To pass test
Free Chlorine .....	To pass test
Substances darkened by sulfuric acid	To pass test
Suitability for use in Dithizone test ..	To pass test
Acetone and Aldehyde .....	0.005 %

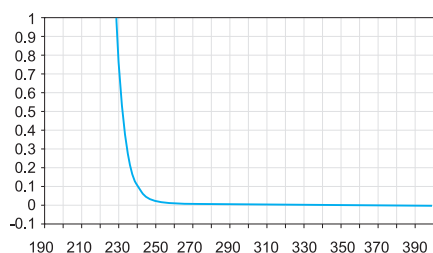
### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
245 nm .....	1.00
250 nm .....	0.33
254 nm .....	0.15
270 nm .....	0.02
280 nm .....	0.01
UV Cutoff .....	max. 245 nm

## Dichloromethane (Stabilized with Amylene)



### Ultimate Grade



- Formula:  $\text{CH}_2\text{Cl}_2$
- F.W.: 84.93
- CAS: 75-09-2
- Stabilized with 40~200 ppm Amylene

#### Physical Data:

- Eluotropic value ( $E^0$ ) (on Alumina): 0.42
- Polarity index ( $P'$ ): 3.1
- Viscosity (cP, 25 °C): 0.413
- Density (g/ml, 25 °C): 1.318
- Boiling point (°C): 40
- Solubility of water (% , 20 °C): 0.24
- Refractive index (25 °C): 1.421

## D3056-12 Dichloromethane (Stabilized with Amylene), Ultimate Grade

HS-No: 2903 12 00 00

### Extraction-Concentration Suitability

Code	Capacity
D3056-12-1001	1.0 L
D3056-12-4001	4.0 L

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Preservative (Amylene) .....	40 ~ 200 ppm
Titrate acid .....	0.0003 mEq/g
Free Halogens .....	To pass test

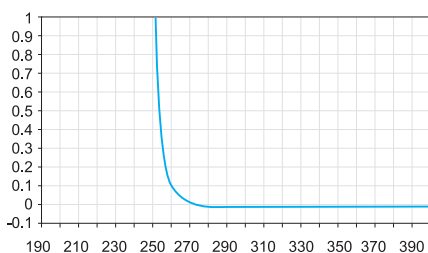
### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
233 nm .....	1.00
235 nm .....	0.50
240 nm .....	0.15
254 nm .....	0.01
280 nm .....	0.01
UV Cutoff .....	max. 233 nm

## Ethyl Acetate



### Ultimate Grade



- Formula:  $\text{CH}_3\text{COOC}_2\text{H}_5$
- F.W.: 88.11
- CAS: 141-78-6

#### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.58
- Polarity Index ( $P'$ ): 4.4
- Viscosity (cP, 25 °C): 0.423
- Density (g/ml, 25 °C): 0.894
- Boiling point (°C): 77
- Solubility of water (% , 20 °C): 3.3
- Refractive index (25 °C): 1.370

### E7100-12 Ethyl Acetate, Ultimate Grade

HS-No: 2903 13 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
255 nm .....	1.00
260 nm .....	0.15
270 nm .....	0.025
UV Cutoff .....	max. 255 nm

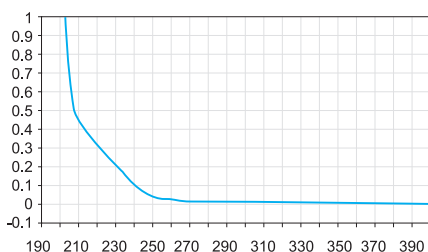
Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Titration acid .....	0.0009 mEq/g
Substances darkened by sulfuric acid .....	To pass test

Code	Capacity
C3059-12-1001	1.0 L
C3059-12-4001	4.0 L

## Ethyl Ether, Anhydrous (Stabilized with Ethanol)



### Ultimate Grade



- Formula:  $\text{C}_2\text{H}_5\text{OC}_2\text{H}_5$
- F.W.: 74.12
- CAS: 60-29-7
- Stabilized with 1.5~2.5% Ethanol

#### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.38
- Polarity index ( $P'$ ): 2.8
- Viscosity (cP, 25 °C): 0.24
- Density (g/ml, 25 °C): 0.708
- Boiling point (°C): 34
- Solubility of water (% , 20 °C): 1.26
- Refractive index (25 °C): 1.352

### Ethyl Ether, Anhydrous (Stabilized with Ethanol), Ultimate Grade

HS-No:

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
218 nm .....	1.00
254 nm .....	0.07
280 nm .....	0.02
350 nm .....	0.01
UV Cutoff .....	max. 218 nm

Assay (by GC, Excluding preservative) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.01 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Titration acid .....	0.0002 mEq/g
Preservative ( $\text{C}_2\text{H}_5\text{OH}$ ) .....	1.5 ~ 2.5 %
Peroxide (as $\text{H}_2\text{O}_2$ , at time of packaging) .....	max. 5 ppm
Carbonyl compounds (as HCHO) ...	0.001 %
Substances darkened by sulfuric acid	To pass test

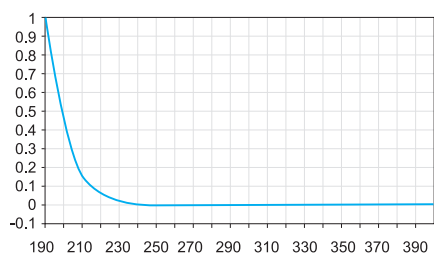
Code	Capacity
D3103-12-1001	1.0 L
D3103-12-4001	4.0 L



## n-Heptane 97%



### Ultimate Grade



- Formula:  $\text{CH}_3(\text{CH}_2)_5\text{CH}_3$
- F.W.: 100.21
- CAS: 142-82-5

### Physical Data:

- Eluotropic value ( $E^o$ ) (on Alumina): 0.01
- Polarity Index ( $P'$ ): 0.1
- Viscosity (cP, 25 °C): 0.40
- Density (g/ml, 25 °C): 0.681
- Boiling point (°C): 98
- Solubility of water (% , 25 °C): 0.01
- Refractive index (25 °C): 1.385

### N3008-12 n-Heptane 97%, Ultimate Grade

HS-No: 2901 10 90 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
197 nm .....	1.00
200 nm .....	0.75
215 nm .....	0.20
254 nm .....	0.01
UV Cutoff .....	max. 197 nm

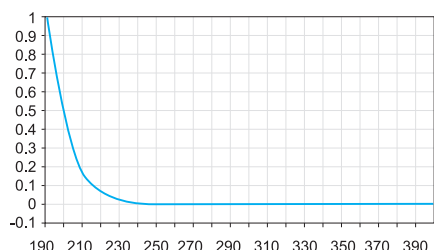
Assay (by GC, n-Heptane) .....	min. 97.0 %
(total C7 Hydrocarbons) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Substances darkened by sulfuric acid .....	To pass test

Code	Capacity
N3008-12-1001	1.0 L
N3008-12-4001	4.0 L

## n-Heptane 99%



### Ultimate Grade



- Formula:  $\text{CH}_3(\text{CH}_2)_5\text{CH}_3$
- F.W.: 100.21
- CAS: 142-82-5

### Physical Data:

- Eluotropic value ( $E^o$ ) (on Alumina): 0.01
- Polarity Index ( $P'$ ): 0.1
- Viscosity (cP, 25 °C): 0.40
- Density (g/ml, 25 °C): 0.681
- Boiling point (°C): 98
- Solubility of water (% , 20 °C): 0.01
- Refractive index (25 °C): 1.385

### N3008-12 n-Heptane 99%, Ultimate Grade

HS-No: 2901 10 90 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
197 nm .....	1.00
200 nm .....	0.75
215 nm .....	0.20
254 nm .....	0.01
UV Cutoff .....	max. 197 nm

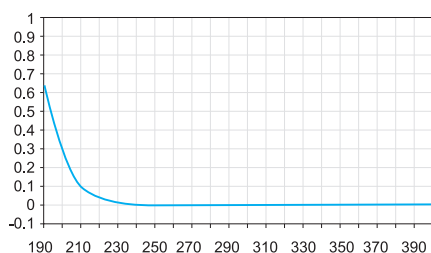
Assay (by GC, n-Heptane) .....	min. 99.0 %
(total C7 Hydrocarbons) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Substances darkened by sulfuric acid .....	To pass test

Code	Capacity
N3008-12-1001	1.0 L
N3008-12-4001	4.0 L

## n-Hexane 95%



### Ultimate Grade



- Formula:  $\text{CH}_2(\text{CH}_2)_4\text{CH}_3$
- F.W.: 86.18
- CAS: 110-54-3

#### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.01
- Polarity Index (P<sup>o</sup>): 0.1
- Viscosity (cP, 25 °C): 0.300
- Density (g/ml, 25 °C): 0.656
- Boiling point (°C): 69
- Solubility of water (% , 20 °C): 0.01
- Refractive index (25 °C): 1.372

### N3057-12 n-Hexane 95%, Ultimate Grade

HS-No: 2901 10 90 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
195 nm .....	1.00
210 nm .....	0.25
220 nm .....	0.075
254 nm .....	0.005
UV Cutoff .....	max. 195 nm

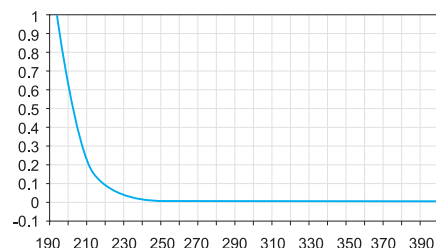
Assay (by GC, n-Hexane) .....	min. 95.0 %
(total C6 Hydrocarbons) .....	min. 99.8 %
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Water soluble titrable acid .....	0.0003 mEq/g
Sulfur compounds (as S) .....	0.005 %
Thiophene .....	To pass test

Code	Capacity
N3057-12-1001	1.0 L
N3057-12-4001	4.0 L

## Isooctane (2,2,4-Trimethylpentane)



### Ultimate Grade



- Formula:  $(\text{CH}_3)_2\text{CHCH}_2\text{C}(\text{CH}_3)_3$
- F.W.: 114.23
- CAS: 540-84-1

#### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.01
- Polarity Index (P<sup>o</sup>): 0.1
- Viscosity (cP, 25 °C): 0.51
- Density (g/ml, 25 °C): 0.691
- Boiling point (°C): 99
- Solubility of water (% , 20 °C): 0.006
- Refractive index (25 °C): 1.389

### TR105-12 Isooctane (2,2,4-Trimethylpentane), Ultimate Grade

HS-No: 2901 10 90 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
205 nm .....	1.00
225 nm .....	0.10
254 nm .....	0.014
UV Cutoff .....	max. 205 nm

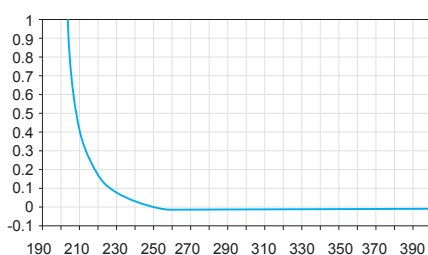
Assay (by GC) .....	min. 99.8 %
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Water soluble titrable acid .....	0.0003 mEq/g
Sulfur compounds (as S) .....	0.005 %

Code	Capacity
TR105-12-1001	1.0 L
TR105-12-4001	4.0 L

## Methanol



### Ultimate Grade



- Formula: CH<sub>3</sub>OH
- F.W.: 32.04
- CAS: 67-56-1

#### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.95
- Polarity Index (P'): 5.1
- Viscosity (cP, 25 °C): 0.544
- Density (g/ml, 25 °C): 0.787
- Boiling point (°C): 65
- Solubility of water (% , 20 °C): Miscible
- Refractive index (25 °C): 1.326

### M2097-12 Methanol, Ultimate Grade

HS-No: 2905 11 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
205 nm .....	1.00
220 nm .....	0.25
230 nm .....	0.15
254 nm .....	0.02
280 nm .....	0.01
UV Cutoff .....	max. 205 nm

#### LC Gradient Suitability

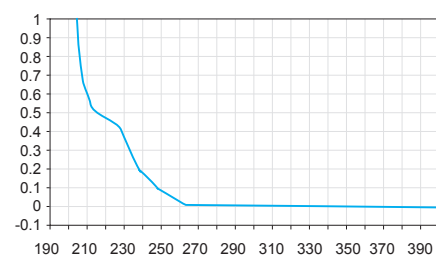
Gradient Elution test .....	To pass test
Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.05 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Titrate acid .....	0.0003 mEq/g
Titrate base .....	0.0002 mEq/g
Carbonyl compounds .....	0.001 %
(each of Acetone, Formaldehyde and Acetaldehyde)	
Substances darkened by sulfuric acid	To pass test
Substances reducing permanganate	To pass test
Solubility in water .....	To pass test

Code	Capacity
M2097-12-1001	1.0 L
M2097-12-4001	4.0 L

## Methyl t-Butyl Ether



### Ultimate Grade



- Formula: (CH<sub>3</sub>)<sub>3</sub>COCH<sub>3</sub>
- F.W.: 88.14
- CAS: 1634-04-4

#### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.35
- Polarity Index (P'): 2.5
- Viscosity (cP, 25 °C): 0.28
- Density (g/ml, 25 °C): 0.740
- Boiling point (°C): 55
- Solubility of water (% , 20 °C): 1.5
- Refractive index (25 °C): 1.366

### M2060-12 Methyl t-Butyl Ether, Ultimate Grade

HS-No: 2905 14 10

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
210 nm .....	1.00
225 nm .....	0.50
254 nm .....	0.10
300 nm .....	0.01
UV Cutoff .....	max. 210 nm

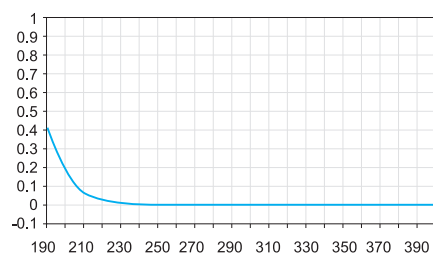
Assay (by GC) .....	min. 99.5 %
Color (APHA) .....	10
Water .....	0.05 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Peroxide (as H <sub>2</sub> O <sub>2</sub> , at time of packaging) .....	max. 1 ppm

Code	Capacity
M2060-12-1001	1.0 L
M2060-12-4001	4.0 L

## n-Pentane



### Ultimate Grade



- Formula:  $\text{CH}_3(\text{CH}_2)_3\text{CH}_3$
- F.W.: 72.15
- CAS: 109-66-0

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.00
- Polarity Index ( $P'$ ): 0.00
- Viscosity (cP, 25 °C): 0.22
- Density (g/ml, 25 °C): 0.621
- Boiling point (°C): 36
- Solubility of water (% , 20 °C): 0.009
- Refractive index (25 °C): 1.355

### N6015-12 n-Pentane, Ultimate Grade

HS-No: 2901 10 90 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
190 nm .....	1.00
200 nm .....	0.30
210 nm .....	0.10
254 nm .....	0.01
UV Cutoff .....	max. 190 nm

Assay (by GC, n-Pentane) .....	min. 98,0 %
(total C5 hydrocarbons) .....	min. 99,9 %
Color (APHA) .....	5
Water .....	0.02 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Substances darkened by sulfuric acid .....	To pass test

Code	Capacity
N6015-12-1001	1.0 L
N6015-12-4001	4.0 L

## Petroleum Ether (35 ~ 60 °C)



### Ultimate Grade

CAS: 8032-32-4

### Physical Data:

- Density (g/ml, 20 °C): 0.64
- Boiling point (°C): 35 ~ 60
- Refractive index (20 °C): 1.365

### P2049-12 Petroleum Ether (35 ~ 60°C), Ultimate Grade

HS-No: 2710 11 25 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb
Boiling range (Initial to dry point) ....	35 ~ 60 °C

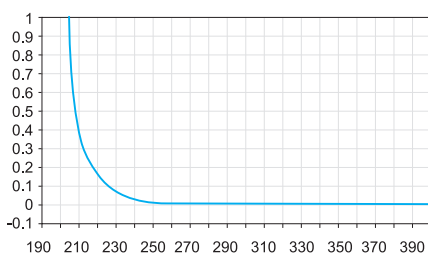
Color (APHA) .....	10
Water .....	0.01 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Acidity .....	To pass test

Code	Capacity
P2049-12-1001	1.0 L
P2049-12-4001	4.0 L

## 2-Propanol (Isopropyl Alcohol)



### Ultimate Grade



- Formula:  $(\text{CH}_3)_2\text{CHOH}$
- F.W.: 60.10
- CAS: 67-63-0

### Physical Data:

- Eluotropic value ( $E^o$ ) (on Alumina): 0.82
- Polarity Index ( $P'$ ): 3.9
- Viscosity (cP, 25 °C): 2.038
- Density (g/ml, 25 °C): 0.782
- Boiling point (°C): 82
- Solubility of water (% , 20 °C): Miscible
- Refractive index (25 °C): 1.375

### PR141-12 2-Propanol (Isopropyl Alcohol), Ultimate Grade

HS-No: 2905 12 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
205 nm .....	1.00
220 nm .....	0.25
230 nm .....	0.13
254 nm .....	0.02
UV Cutoff .....	max. 205 nm

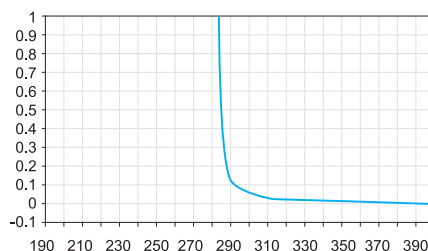
Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.05 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Titrate acid or Base .....	0.0001 mEq/g
Solubility in water .....	To pass test

Code	Capacity
PR141-12-1001	1.0 L
PR141-12-4001	4.0 L

## Toluene



### Ultimate Grade



- Formula:  $\text{C}_6\text{H}_5\text{CH}_3$
- F.W.: 92.14
- CAS: 108-88-3

### Physical Data:

- Eluotropic value ( $E^o$ ) (on Alumina): 0.29
- Polarity Index ( $P'$ ): 2.4
- Viscosity (cP, 25 °C): 0.560
- Density (g/ml, 25 °C): 0.864
- Boiling point (°C): 111
- Solubility of water (% , 25 °C): 0.033
- Refractive index (25 °C): 1.494

### T5031-12 Toluene, Ultimate Grade

HS-No: 2902 30 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
FID Detectable residue (as 2-Octanol) .....	max. 5 ppb

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
286 nm .....	1.00
288 nm .....	0.40
300 nm .....	0.10
350 nm .....	0.01
UV Cutoff .....	max. 286 nm

Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	1 ppm
Fluorescence Background .....	To pass test
Sulfur compounds (as S) .....	0.003 %
Substances darkened by sulfuric acid .....	To pass test

Code	Capacity
T5031-12-1001	1.0 L
T5031-12-4001	4.0 L



## SOLVENT SPECIFICATIONS

SOLVENT NAME SYNONYMS

LC - MS

ULTIMATE

**PESTICIDE**

HPLC

BIO

ULTRA DRY



# Pesticide

Item	Extraction-Concentration Suitability – ECD (max.ppt)	Assay (min. %)	Water (max. %)	Residue aft. Evaporation (max. ppm)
Acetone	10	99.8	0.25	5
Acetonitrile	10	99.8	0.05	5
Benzen	10	99.7	0.03	5
1-Butanol	20	99.5	0.1	5
Chloroform w / Amylene	10	99.8	0.02	2
Chloroform w / Ethanol	10	99.8	0.02	2
Cyclohexane	10	99.7	0.01	5
Dichloromethane	10	99.7	0.02	5
Ethyl Acetate	10	99.8	0.02	5
Ethyl Ether w / Ethanol	10	99.5	0.08	3
n-Heptane 97%	10	97.0	0.02	3
n-Heptane 99%	10	99.0	0.02	3
n-Hexane 95 %	10	95.0	0.01	5
Isooctane	10	99.0	0.01	5
Methanol	10	99.8	0.1	5
Methyl t-Butyl Ether	10	99.0	0.05	5
n-Pentane	10	98.0	0.02	5
Petroleum Ether (35~60 °C)	10	-	0.05	5
2-Propanol	10	99.7	0.1	5
Sodium sulfate, anhydrous	-	99.0	-	-
Toluene	10	99.8	0.03	5

## Acetone



### Pesticide Grade

- Formula:  $(\text{CH}_3)_2\text{CO}$
- F.W.: 58.08
- CAS: 67-64-1

### A1084-11 Acetone, Pesticide Grade

HS-No: 2914 11 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue		Color (APHA) .....	10
(as Heptachlor epoxide) .....	max. 10 ppt	Water .....	0.25 %
Assay (by GC) .....	min. 99.8 %	Residue after Evaporation .....	5 ppm

Code	Capacity
A1084-11-1001	1.0 L
A1084-11-4001	4.0 L

## Acetonitrile



### Pesticide Grade

- Formula:  $\text{CH}_3\text{CN}$
- F.W.: 41.05
- CAS: 75-05-8

### A1133-11 Acetonitrile, Pesticide Grade

HS-No: 2926 90 95 90

#### Extraction-Concentration Suitability

ECD Detectable residue		Color (APHA) .....	10
(as Heptachlor epoxide) .....	max. 10 ppt	Water .....	0.05 %
Assay (by GC) .....	min. 99.8 %	Residue after Evaporation .....	5 ppm

Code	Capacity
A1133-11-1001	1.0 L
A1133-11-4001	4.0 L

## Benzene



### Pesticide Grade

- Formula:  $\text{C}_6\text{H}_6$
- F.W.: 78.10
- CAS: 71-43-2

### B2027-11 Benzene, Pesticide Grade

HS-No: 2902 20 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue		Color (APHA) .....	10
(as Heptachlor epoxide) .....	max. 10 ppt	Water .....	0.03 %
Assay (by GC) .....	min. 99.7 %	Residue after Evaporation .....	5 ppm

Code	Capacity
B2027-11-1001	1.0 L
B2027-11-4001	4.0 L

## 1-Butanol (n-Butyl Alcohol)



### Pesticide Grade

- Formula:  $\text{CH}_3(\text{CH}_2)_3\text{OH}$
- F.W.: 74.12
- CAS: 71-36-3

### BU103-11 1-Butanol (n-Butyl Alcohol), Pesticide Grade

HS-No: 2905 13 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue		Color (APHA) .....	10
(as Heptachlor epoxide) .....	max. 10 ppt	Water .....	0.1 %
Assay (by GC) .....	min. 99.5 %	Residue after Evaporation .....	5 ppm

Code	Capacity
BU103-11-1001	1.0 L
BU103-11-4001	4.0 L

**Chloroform (Stabilized with Amylene)****Pesticide Grade**

- Formula:  $\text{CHCl}_3$
- F.W.: 119,38
- CAS: 67-66-3
- Stabilized with 40~200 ppm Amylene

**C3059-11 Chloroform (Stabilized with Amylene), Pesticide Grade**

HS-No: 2903 13 00 00

**Extraction-Concentration Suitability**

ECD Detectable residue		Water .....	0.02 %
(as Heptachlor epoxide) .....	max. 10 ppt	Residue after Evaporation .....	2 ppm
Assay (by GC) .....	min. 99.8 %	Chloride (Cl) .....	10 ppm
Color (APHA) .....	10		

Code	Capacity
C3057-11-1001	1.0 L
C3057-11-4001	4.0 L

**Chloroform (Stabilized with Ethanol)****Pesticide Grade**

- Formula:  $\text{CHCl}_3$
- F.W.: 119,38
- CAS: 67-66-3
- Stabilized with 0,5~1.0 ppm Ethanol

**C3059-11 Chloroform (Stabilized with Ethanol), Pesticide Grade**

HS-No: 2903 13 00 00

**Extraction-Concentration Suitability**

ECD Detectable residue		Color (APHA) .....	10
(as Heptachlor epoxide) .....	max. 10 ppt	Water .....	0.02 %
Assay (by GC, Excluding preservative) .	min. 99.8 %	Residue after Evaporation .....	2 ppm

Code	Capacity
C3058-4-1001	1.0 L
C3058-4-4001	4.0 L

**Cyclohexane****Pesticide Grade**

- Formula:  $\text{C}_6\text{H}_{12}$
- F.W.: 84,16
- CAS: 110-82-7

**C6033-11 Cyclohexane, Pesticide Grade**

HS-No: 2902 11 00 00

**Extraction-Concentration Suitability**

ECD Detectable residue		Color (APHA) .....	10
(as Heptachlor epoxide) .....	max. 10 ppt	Water .....	0.01 %
Assay (by GC) .....	min. 99.7 %	Residue after Evaporation .....	5 ppm

Code	Capacity
C6033-11-1001	1.0 L
C6033-11-4001	4.0 L

**Dichloromethane (Stabilized with Amylene)****Pesticide Grade**

- Formula:  $\text{CH}_2\text{Cl}_2$
- F.W.: 84,93
- CAS: 75-09-2
- Stabilized with 40~200 ppm Amylene

**D3056-11 Dichloromethane (Stabilized with Amylene), Pesticide Grade**

HS-No: 2903 12 00 00

**Extraction-Concentration Suitability**

ECD Detectable residue		Water .....	0.02 %
(as Heptachlor epoxide) .....	max. 10 ppt	Residue after Evaporation .....	5 ppm
Assay (by GC) .....	min. 99.7 %	Chloride (Cl) .....	10 ppm
Color (APHA) .....	10		

Code	Capacity
D3056-11-1001	1.0 L
D3056-11-4001	4.0 L

## Ethyl Acetate



### Pesticide Grade

- Formula:  $\text{CH}_3\text{COOC}_2\text{H}_5$
- F.W.: 88.11
- CAS: 141-78-6

### E7100-11 Ethyl Acetate, Pesticide Grade

HS-No: 2915 31 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue	Water .....	0.02 %
(as Heptachlor epoxide) ..... max. 10 ppt	Residue after Evaporation .....	5 ppm
Assay (by GC) ..... min. 99.8 %	Titration acid .....	0.0009 mEq/g
Color (APHA) ..... 10		

Code	Capacity
E7100-11-1001	1.0 L
E7100-11-4001	4.0 L

## Ethyl Ether, Anhydrous (Stabilized with Ethanol)



### Pesticide Grade

- Formula:  $\text{C}_2\text{H}_5\text{OC}_2\text{H}_5$
- F.W.: 74.12
- CAS: 60-29-7
- Stabilized with 1.5 ~ 2.5% Ethanol

### Ethyl Ether, Anhydrous (Stabilized with Ethanol), Pesticide Grade

HS-No: 2902 11 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue	Residue after Evaporation .....	3 ppm
(as Heptachlor epoxide) ..... max. 10 ppt	Peroxide (as $\text{H}_2\text{O}_2$ , at time of	
Assay (by GC) ..... min. 99.5 %	packaging) .....	5 ppm
Color (APHA) ..... 10	Titration acid .....	0.0002 mEq/g
Water .....		0.08 %

Code	Capacity
C6033-11-1001	1.0 L
C6033-11-4001	4.0 L

## n-Heptane 97%



### Pesticide Grade

- Formula:  $\text{CH}_3(\text{CH}_2)_5\text{CH}_3$
- F.W.: 100.21
- CAS: 142-82-5

### N3008-11 n-Heptane 97%, Pesticide Grade

HS-No: 2901 10 90 00

#### Extraction-Concentration Suitability

ECD Detectable residue	Color (APHA) .....	10
(as Heptachlor epoxide) ..... max. 10 ppt	Water .....	0.02 %
Assay (by GC, n-Heptane) ..... min. 97.0 %	Residue after Evaporation .....	3 ppm
(total C7 Hydrocarbons) ..... min. 99.9 %		

Code	Capacity
M3008-11-1001	1.0 L
M3008-11-4001	4.0 L

## n-Heptane 99%



### Pesticide Grade

- Formula:  $\text{CH}_3(\text{CH}_2)_5\text{CH}_3$
- F.W.: 100.21
- CAS: 142-82-5

### N3008-11 n-Heptane 99%, Pesticide Grade

HS-No: 2901 10 90 00

#### Extraction-Concentration Suitability

ECD Detectable residue	Color (APHA) .....	10
(as Heptachlor epoxide) ..... max. 10 ppt	Water .....	0.02 %
Assay (by GC, n-Heptane) ..... min. 99.0 %	Residue after Evaporation .....	3 ppm
(total C7 Hydrocarbons) ..... min. 99.9 %		

Code	Capacity
M3008-11-1001	1.0 L
M3008-11-4001	4.0 L

**n-Hexane 95%****Pesticide Grade**

- Formula:  $\text{CH}_3(\text{CH}_2)_4\text{CH}_3$
- F.W.: 86.18
- CAS: 110-54-3

**N3057-11 n-Hexane 95%, Pesticide Grade**

HS-No: 2901 10 90 00

**Extraction-Concentration Suitability**

ECD Detectable residue		Color (APHA) .....	10
(as Heptachlor epoxide) .....	max. 10 ppt	Water .....	0.01 %
Assay (by GC) .....	min. 95.0 %	Residue after Evaporation .....	5 ppm
(total C6 Hydrocarbons) .....	min. 99.8 %		

Code	Capacity
N3057-11-1001	1.0 L
N3057-11-4001	4.0 L

**Isooctane (2,2,4-Trimethylpentane)****Pesticide Grade**

- Formula:  $(\text{CH}_3)_2\text{CHCH}_2\text{C}(\text{CH}_3)_3$
- F.W.: 114.23
- CAS: 540-84-1

**TR105-11 Isooctane (2,2,4-Trimethylpentane), Pesticide Grade**

HS-No: 2901 10 90 00

**Extraction-Concentration Suitability**

ECD Detectable residue		Color (APHA) .....	10
(as Heptachlor epoxide) .....	max. 10 ppt	Water .....	0.01 %
Assay (by GC) .....	min. 99.0 %	Residue after Evaporation .....	5 ppm

Code	Capacity
TR105-11-1001	1.0 L
TR105-11-4001	4.0 L

**Methanol****Pesticide Grade**

- Formula:  $\text{CH}_3\text{OH}$
- F.W.: 32.04
- CAS: 67-56-1

**M2097-11 Methanol, Pesticide Grade**

HS-No: 2905 11 00 00

**Extraction-Concentration Suitability**

ECD Detectable residue		Color (APHA) .....	10
(as Heptachlor epoxide) .....	max. 10 ppt	Water .....	0.1 %
Assay (by GC) .....	min. 99.8 %	Residue after Evaporation .....	5 ppm

Code	Capacity
M2097-11-1001	1.0 L
M2097-11-4001	4.0 L

**Methyl t-Butyl Ether****Pesticide Grade**

- Formula:  $(\text{CH}_3)_3\text{COCH}_3$
- F.W.: 88.14
- CAS: 1634-04-4

**M2060-11 Methyl t-Butyl Ether, Pesticide Grade**

HS-No: 2905 14 10

**Extraction-Concentration Suitability**

ECD Detectable residue		Color (APHA) .....	10
(as Heptachlor epoxide) .....	max. 10 ppt	Water .....	0.05 %
Assay (by GC) .....	min. 99.0 %	Residue after Evaporation .....	5 ppm

Code	Capacity
M2060-11-1001	1.0 L
M2060-11-4001	4.0 L

## n-Pentane



### Pesticide Grade

- Formula:  $\text{CH}_3(\text{CH}_2)_3\text{CH}_3$
- F.W.: 72.15
- CAS: 109-66-0

### N6015-11 n-Pentane, Pesticide Grade

HS-No: 2901 10 90 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
Assay (by GC, n-Pentane) .....	min. 98.0 %
(total C5 Hydrocarbons) .....	min. 99.9 %

Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	5 ppm

Code	Capacity
N6015-11-1001	1.0 L
N6015-11-4001	4.0 L

## Petroleum Ether (35~60 °C)



### Pesticide Grade

- CAS: 8032-32-4

### P2049-11 Petroleum Ether (35~60 °C), Pesticide Grade

HS-No: 2710 11 25 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
Boiling range (Initial to dry) .....	35 ~ 60 °C

Color (APHA) .....	10
Water .....	0.05 %
Residue after Evaporation .....	5 ppm

Code	Capacity
P2049-11-1001	1.0 L
P2049-11-4001	4.0 L

## 2-Propanol (Isopropyl Alcohol)



### Pesticide Grade

- Formula:  $(\text{CH}_3)_2\text{CHOH}$
- F.W.: 60.10
- CAS: 67-63-0

### PR141-1 2-Propanol (Isopropyl Alcohol), Pesticide Grade

HS-No: 2905 12 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) .....	max. 10 ppt
Assay (by GC) .....	min. 99.7 %

Color (APHA) .....	10
Water .....	0.1 %
Residue after Evaporation .....	5 ppm

Code	Capacity
PR141-11-1001	1.0 L
PR141-11-4001	4.0 L

## Sodium Sulfate, Anhydrous

### Pesticide Grade

- Formula:  $\text{Na}_2\text{SO}_4$
- F.W.: 142.04
- CAS: 7757-82-6

### S5281-11 Sodium Sulfate, Anhydrous, Pesticide Grade

HS-No: 2833 11 00 00

Meets ACS Specification

#### Extraction-Concentration Suitability

Extraction-Concentration Suitability .....	To pass test
Assay ( $\text{Na}_2\text{SO}_4$ ) .....	min. 99.0 %
Calcium (Ca) .....	0.01 %
Chloride (Cl) .....	0.001 %
Heavy Metals (Pb) .....	5 ppm
Insoluble matters .....	0.01 %
Iron (Fe) .....	0.001 %

Loss on Ignition .....	0.5 %
Magnesium (Mg) .....	0.001 %
Nitrogen compound (as N) .....	5 ppm
pH of a 5% Solution at 25 °C .....	5.2 ~ 9.2
Phosphate ( $\text{PO}_4$ ) .....	0.001 %
Potassium (K) .....	0.01 %

Code	Capacity
S5281-11-0500	500 g
S5281-11-1000	1 kg

# Toluene



## Pesticide Grade

- Formula:  $C_6H_5CH_3$
- F.W.: 92.14
- CAS: 108-88-3

### T5031-11 Toluene, Pesticide Grade

HS-No: 2902 30 00 00

#### Extraction-Concentration Suitability

ECD Detectable residue		Color (APHA) .....	10
(as Heptachlor epoxide) .....	max. 10 ppt	Water .....	0.03 %
Assay (by GC) .....	min. 99.8 %	Residue after Evaporation .....	5 ppm

Code	Capacity
T5031-11-1001	1.0 L
T5031-11-4001	4.0 L

LC-MS

ULTIMATE

PESTICIDE

HPPLC

BIO

ULTRA DRY



## SOLVENT SPECIFICATIONS

SOLVENT NAME SYNONYMS

LC - MS

ULTIMATE

PESTICIDE

**HPLC**

BIO

ULTRA DRY

# DSP HPLC

## Solvents

Item	UV Cutoff (max. nm)	Assay (min. %)	Water (max. %)	Residue aft. Evaporation (max. ppm)
Acetic acid, glacial	254	99.7	0.1	5
Acetone	330	99.7	0.25	1
Acetonitrile	<190	99.9	0.01	1
Benzene	280	99.7	0.03	5
1-Butanol	215	99.5	0.1	5
n-Butyl acetate	254	99.5	0.05	5
Chlorobenzene	288	99.9	0.03	5
Chloroform w / Amylene	245	99.8	0.02	2
Chloroform w / Ethanol	245	99.8	0.02	2
Cyclohexane	202	99.7	0.01	5
o-Dichlorobenzene	296	98.0	0.02	5
1,2-Dichloroethane	226	99.5	0.02	5
Dichloromethane	233	99.9	0.02	2
N,N-Dimethylacetamide	270	99.8	0.03	5
N,N-Dimethylformamide	270	99.9	0.03	5
Dimethyl Sulfoxide	263	99.9	0.05	5
1,4-Dioxane	215	99.8	0.02	5
Ethanol	205	99.9	0.1	5
Ethyl Acetate	255	99.9	0.02	5
Ethyl Ether w / Ethanol	218	99.8	0.01	5
n-Heptane 97%	197	97.0	0.02	3
n-Heptane 99%	197	99.0	0.02	3
n-Hexane 95%	195	95.0	0.02	3
Isooctane	205	99.0	0.02	4
Methanol	205	99.9	0.05	3
Methyl t-Butyl Ether	210	99.0	0.05	5
Methyl Ethyl Ketone	329	99.6	0.03	3

# DSP HPLC

## Solvents

Item	UV Cutoff (max. nm)	Assay (min. %)	Water (max. %)	Residue aft. Evaporation (max. ppm)
Methyl Isobutyl Ketone	334	99.0	0.05	5
N-Methyl-2-Pyrrolidone	285	99.7	0.02	10
n-Pentane	190	98.0	0.02	5
Petroleum Ether (35~60 °C)	210	-	0.01	5
1-Propanol	210	99.8	0.05	3
2-Propanol	205	99.9	0.05	2
Pyridine	330	99.5	0.02	5
Tetrahydrofuran	210	99.9	0.02	5
Tetrahydrofuran w /BHT	-	99.5	0.02	-
Toluene	286	99.8	0.02	5
Water	190	-	-	10

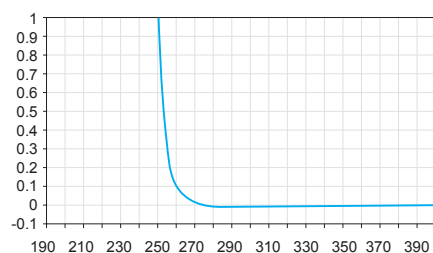
## Acid & Buffers for HPLC

Item	UV Absorbance (max., 254nm, 1.0M)	Assay (min. %)	Insoluble matter (max. %)
Ammonium acetate	0.02	99.0	0.005
Ammonium carbonate	0.02	30.0 (as NH <sub>3</sub> )	0.005
Ammonium phosphate, monobasic	0.03	98.0	0.005
Phosphoric acid 85%	0.04	85.0	0.001
Potassium phosphate, monobasic	0.04	99.0	0.01
Sodium acetate trihydrate	0.02	99.0	0.005
Sodium bicarbonate	0.05	99.7	0.015

## Acetic acid, glacial



### HPLC Grade



- Formula:  $\text{CH}_3\text{COOH}$
- F.W.: 60.05
- CAS: 64-19-7

### Physical Data:

- Elutropic value ( $E^\circ$ ) (on Alumina):  $>0.73$
- Polarity Index ( $P'$ ): 6.2
- Viscosity (cP, 25 °C): 1.10
- Density (g/ml, 25 °C): 1.049
- Boiling point (°C): 117
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.370

### A1020-4 Acetic acid, glacial, HPLC Grade

HS-No: 2915 21 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
254 nm	1.00
256 nm	0.80
280 nm	0.05
350 nm	0.02
UV Cutoff	max. 254 nm
Assay (by GC)	min. 99.7 %
Color (APHA)	10
Water	0.1 %
Residue after Evaporation	5 ppm

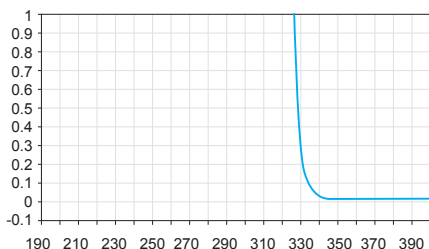
Titration base	0.0004 mEq/g
Dilution test	To pass test
Acetic anhydride	0.01 %
Chloride (Cl)	1 ppm
Sulfate ( $\text{SO}_4$ )	1 ppm
Heavy Metals (as Pb)	0.5 ppm
Iron (Fe)	0.2 ppm
Substances reducing dichromate	To pass test
Substances reducing permanganate	To pass test

Code	Capacity
A1020-4-1001	1.0 L
A1020-4-4001	4.0 L

## Acetone



### HPLC Grade



- Formula:  $(\text{CH}_3)_2\text{CO}$
- F.W.: 58.08
- CAS: 67-64-1

### Physical Data:

- Elutropic value ( $E^\circ$ ) (on Alumina): 0.56
- Polarity Index ( $P'$ ): 5.1
- Viscosity (cP, 25 °C): 0.306
- Density (g/ml, 25 °C): 0.785
- Boiling point (°C): 56
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.357

### A1084-12 Acetone, HPLC Grade

HS-No: 2914 11 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
330 nm	1.00
340 nm	0.06
350 nm	0.01
UV Cutoff	max. 330 nm
Assay (by GC)	min. 99.7 %
Color (APHA)	10
Water	0.25 %
Residue after Evaporation	1 ppm

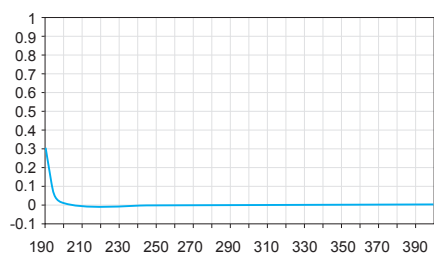
Titration acid	0.0003 mEq/g
Titration base	0.0006 mEq/g
Solubility in water	To pass test
Substances reducing permanganate	To pass test
Aldehyde (as HCHO)	0.002 %
Methanol (as $\text{CH}_3\text{OH}$ )	0.05 %
Isopropyl Alcohol (as $(\text{CH}_3)_2\text{CHOH}$ )	0.05 %

Code	Capacity
A1084-4-1001	1.0 L
A1084-4-4001	4.0 L

## Acetonitrile



### HPLC Grade



- Formula: CH<sub>3</sub>CN
- F.W.: 41.05
- CAS: 75-05-8

### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.66
- Polarity Index (P'): 5.8
- Viscosity (cP, 25 °C): 0.369
- Density (g/ml, 25 °C): 0.779
- Boiling point (°C): 82
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.342

### A1133-4 Acetonitrile, HPLC Grade

HS-No: 2926 90 95 90

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
190 nm	1.00
195 nm	0.15
200 nm	0.05
205 nm	0.04
210 nm	0.02
220 nm	0.01
254 nm	0.009
UV Cutoff	max. 190 nm

#### LC Gradient Suitability

Gradient Elution test	To pass test
Assay (by GC)	min. 99.9 %
Color (APHA)	10
Water	0.01 %
Residue after Evaporation	1 ppm
Titration acid	0.008 mEq/g
Titration base	0.0006 mEq/g

Code	Capacity
A1133-4-1001	1.0 L
A1133-4-4001	4.0 L

## Ammonium acetate



Acid & Buffers

### HPLC Grade

- Formula: CH<sub>3</sub>CO<sub>2</sub>NH<sub>4</sub>
- F.W.: 77.08
- CAS: 631-61-8

### A5034-4 Ammonium acetate, HPLC Grade

HS-No: 2915 29 00 90

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)	
254 nm	0.02
280 nm	0.01
350 nm	0.01
Assay (by GC)	min. 97.0 %
pH of a 5% solution (25 °C)	6.7 ~ 7.3
Insoluble matter	0.005 %

Residue after ignition	0.01 %
Chloride (Cl)	5 ppm
Nitrate (NO <sub>3</sub> )	0.001 %
Sulfate (SO <sub>4</sub> )	0.001 %
Heavy metals (as Pb)	5 ppm
Iron (Fe)	5 ppm

Code	Capacity
A5031-4-0500	500 g
A5031-4-1000	1 kg

**Ammonium carbonate**

Acid &amp; Buffers

**HPLC Grade**

- Formula:  $(\text{NH}_4)_2\text{CO}_3$
- F.W.: 96.09
- CAS: 506-87-6

**A5052-4 Ammonium carbonate, HPLC Grade**

HS-No: 2836 10 00 00

Meets ACS Specification

**Ultraviolet Spectrophotometry**

Maximum UV Absorbance (1M Solution)

254 nm .....	0.02
280 nm .....	0.01
350 nm .....	0.01

Assay (by GC) ..... min. 30.0 %

Insoluble matter ..... 0.005 %

Chloride (Cl) .....	5 ppm
Sulfur compounds (as $\text{SO}_4$ ) .....	0.002 %
Heavy metals (as Pb) .....	5 ppm
Iron (Fe) .....	5 ppm

Code	Capacity
A5034-4-0500	500 g
A5034-4-1000	1 Kg

**Ammonium phosphate, monobasic**

Acid &amp; Buffers

**HPLC Grade**

- Formula:  $\text{NH}_4\text{H}_2\text{PO}_4$
- F.W.:115.03
- CAS: 7722-76-1

**Ammonium phosphate, monobasic, HPLC Grade**

HS-No: 3105 40 00

Meets ACS Specification

**Ultraviolet Spectrophotometry**

Maximum UV Absorbance (1M Solution)

254 nm .....	0.03
280 nm .....	0.02
350 nm .....	0.01

Assay (by GC) ..... min. 98.0 %

pH of a 5% solution (25 °C) ..... 3.8 ~ 4.4

Insoluble matter ..... 0.005 %

Ammonium hydroxide precipitate ... 0.005 %

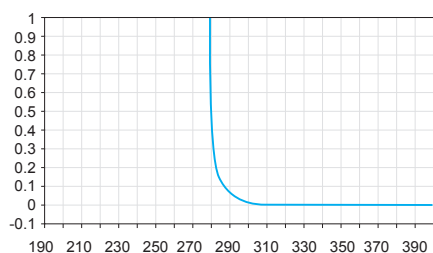
Chloride (Cl) .....	5 ppm
Nitrate ( $\text{NO}_3$ ) .....	0.001 %
Sulfate ( $\text{SO}_4$ ) .....	0.01 %
Heavy metals (as Pb) .....	5 ppm
Iron (Fe) .....	0.001 %
Potassium (K) .....	0.005 %
Sodium (Na) .....	0.005 %

Code	Capacity
A5067-4-0500	500 g
A5067-4-1000	1 Kg

## Benzene



### HPLC Grade



- Formula: C<sub>6</sub>H<sub>6</sub>
- F.W.: 78.10
- CAS: 71-43-2

#### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.32
- Viscosity (cP, 25 °C): 0.604
- Density (g/ml, 25 °C): 0.872
- Boiling point (°C): 80
- Solubility of water (% , 20 °C): 0.063
- Refractive index (25 °C): 1.498

### B2027-4 Benzene, HPLC Grade

HS-No: 2902 20 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
280 nm	1.00
290 nm	0.15
300 nm	0.05
330 nm	0.01
350 nm	0.005
UV Cutoff	max. 280 nm
Assay (by GC)	min. 99.7 %

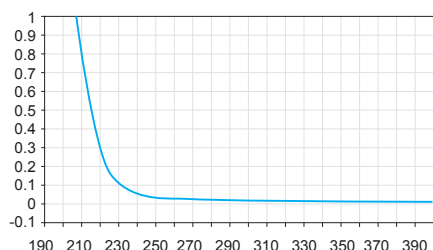
Color (APHA)	10
Water	0.03 %
Residue after Evaporation	5 ppm
Substances darkened by sulfuric acid	To pass test
Thiophene (limit about 1 ppm)	To pass test
Sulfur compounds (as S)	0.005 %

Code	Capacity
B2027-4-1001	1.0 L
B2027-4-4001	4.0 L

## 1-Butanol (n-Butyl Alcohol)



### HPLC Grade



- Formula: CH<sub>3</sub>(CH<sub>2</sub>)<sub>3</sub>OH
- F.W.: 74.12
- CAS: 71-36-3

#### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.7
- Polarity index (P'): 3.9
- Viscosity (cP, 25 °C): 2.544
- Density (g/ml, 25 °C): 0.806
- Boiling point (°C): 118
- Solubility of water (% , 20 °C): 20.07
- Refractive index (25 °C): 1.397

### BU103-4 1-Butanol (n-Butyl alcohol), HPLC Grade

HS-No: 2905 13 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
215 nm	1.00
220 nm	0.50
230 nm	0.20
254 nm	0.025
UV Cutoff	max. 215 nm
Assay (by GC)	min. 99.5 %
Color (APHA)	10

Water	0.1 %
Residue after Evaporation	5 ppm
Titration acid	0.0008 mEq/g
Carbonyl compounds (as butyraldehyde)	0.01 %
Butyl ether	0.2 %

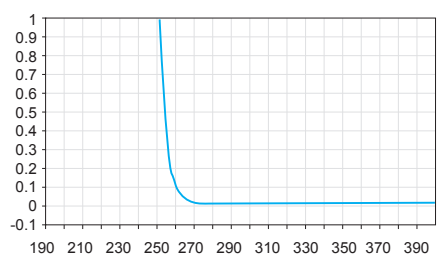
Code	Capacity
BU103-4-0500	500 g
BU103-4-1000	1 kg



## n-Butyl acetate



### HPLC Grade



- Formula:  $\text{CH}_3\text{CO}_2(\text{CH}_2)_3\text{CH}_3$   
 - F.W.: 116.16  
 - CAS: 123-86-4

**Physical Data:**  
 - Elutropic value ( $E^\circ$ ) (on Alumina): 4.0  
 - Viscosity (cP, 25 °C): 0.685  
 - Density (g/ml, 25 °C): 0.876  
 - Boiling point (°C): 126  
 - Solubility of water (% , 20 °C): 1.86  
 - Refractive index (25 °C): 1.392

### n-Butyl acetate, HPLC Grade

HS-No: 2915 33 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Code	Capacity
B6060-4-1001	1.0 L
B6060-4-4001	4.0 L

Maximum UV Absorbance

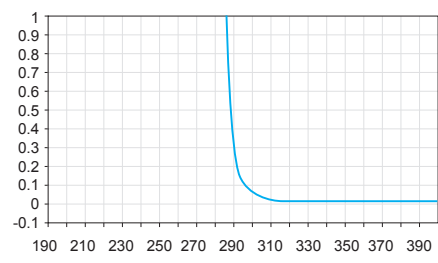
254 nm	1.00
260 nm	0.20
275 nm	0.04
300 nm	0.02
320 nm	0.01
UV Cutoff	max. 254 nm

Assay (by GC)	min. 99.5 %
Color (APHA)	10
Water	0.05 %
Residue after Evaporation	5 ppm
Titration acid	0.0016 mEq/g
Substances darkened by sulfuric acid	To pass test

## Chlorobenzene



### HPLC Grade



- Formula:  $\text{C}_6\text{H}_5\text{Cl}$   
 - F.W.: 112.58  
 - CAS: 108-90-7

**Physical Data:**  
 - Elutropic value ( $E^\circ$ ) (on Alumina): 4.0  
 - Polarity index ( $P'$ ): 2.7  
 - Density (g/ml, 25 °C): 1.107  
 - Boiling point (°C): 132  
 - Refractive index (25 °C): 1.525

### Chlorobenzene, HPLC Grade

HS-No: 2915 33 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Code	Capacity
C6020-4-1001	1.0 L
C6020-4-4001	4.0 L

Maximum UV Absorbance

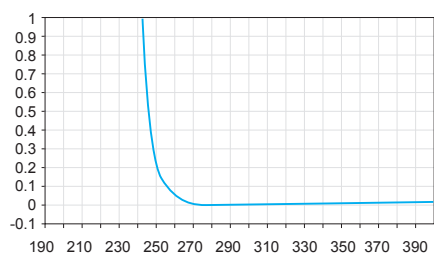
288 nm	1.00
300 nm	0.05
325 nm	0.04
350 nm	0.02
400 nm	0.01
UV Cutoff	max. 288 nm

Assay (by GC)	min. 99.9 %
Color (APHA)	30
Water	0.03 %
Residue after ignition	5 ppm
Titration acid	0.004 mEq/g

## Chloroform (Stabilized with Amylene)



### HPLC Grade



- Formula:  $\text{CHCl}_3$
- F.W.: 119.38
- CAS: 67-66-3
- Stabilized with 40~200 ppm Amylene

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 4.0
- Viscosity (cP, 25 °C): 0.685
- Density (g/ml, 25 °C): 0.876
- Boiling point (°C): 126
- Solubility of water (% , 20 °C): 1.86
- Refractive index (25 °C): 1.392

### C3059-4 Chloroform (Stabilized with Amylene), HPLC Grade

HS-No: 2903 13 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
245 nm	1.00
250 nm	0.33
254 nm	0.15
270 nm	0.02
280 nm	0.01
UV Cutoff	max. 245 nm
Assay (by GC)	min. 99.8 %
Color (APHA)	10

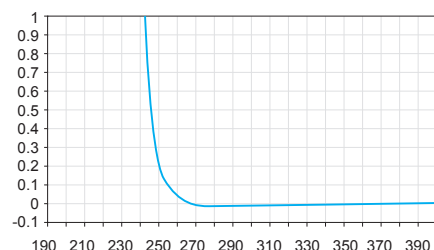
Water	0.02 %
Residue after Evaporation	2 ppm
Preservative (Amylene)	40 ~ 200 ppm
Lead (Pb)	0.05 ppm
Acid and Chloride	To pass test
Free Chlorine	To pass test
Suitability for use in Dithizone test	To pass test
Acetone and Aldehyde	0.005 %

Code	Capacity
C3057-4-1001	1.0 L
C3057-4-4001	4.0 L

## Chloroform (Stabilized with Ethanol)



### HPLC Grade



- Formula:  $\text{CHCl}_3$
- F.W.: 119.38
- CAS: 67-66-3
- Stabilized with 0.5~1.0 % Ethanol

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 4.0
- Viscosity (cP, 25 °C): 0.685
- Density (g/ml, 25 °C): 0.876
- Boiling point (°C): 126
- Solubility of water (% , 20 °C): 1.86
- Refractive index (25 °C): 1.392

### C3059-4 Chloroform (Stabilized with Ethanol), HPLC Grade

HS-No: 2903 13 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
245 nm	1.00
250 nm	0.33
254 nm	0.15
270 nm	0.02
280 nm	0.01
UV Cutoff	max. 245 nm
Assay (by GC, Excluding preservative)	min. 99.8 %
Color (APHA)	10

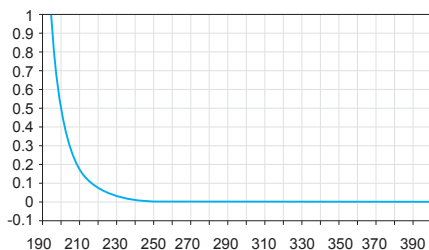
Water	0.02 %
Residue after Evaporation	2 ppm
Preservative (Amylene)	0.5 ~ 1.0 %
Lead (Pb)	0.05 ppm
Acid and Chloride	To pass test
Free Chlorine	To pass test
Substance darkened by sulfuric acid	To pass test
Suitability for use in Dithizone test	To pass test
Acetone and Aldehyde	0.005 %

Code	Capacity
C3058-4-1001	1.0 L
C3058-4-4001	4.0 L

## Cyclohexane



### HPLC Grade



- Formula: C<sub>6</sub>H<sub>12</sub>
- F.W.: 84.16
- CAS: 110-82-7

#### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.04
- Polarity Index (P<sup>o</sup>): 0.2
- Viscosity (cP, 25 °C): 0.894
- Density (g/ml, 25 °C): 0.773
- Boiling point (°C): 81
- Solubility of water (% , 20 °C): 0.01
- Refractive index (25 °C): 1.424

### C6033-4 Cyclohexane, HPLC Grade

HS-No: 2902 11 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

202 nm .....	1.00
205 nm .....	0.88
210 nm .....	0.67
254 nm .....	0.01

UV Cutoff ..... max. 202 nm

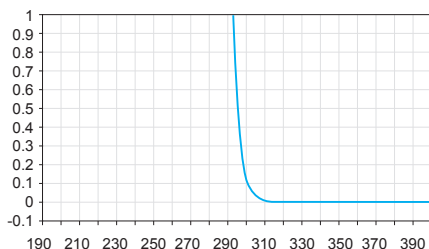
Assay (by GC) .....	min. 99.7 %
Color (APHA) .....	10
Water .....	0.01 %
Residue after Evaporation .....	5 ppm
Substances darkened by sulfuric acid	To pass test

Code	Capacity
C6033-4-1001	1.0 L
C6033-4-4001	4.0 L

## o-Dichlorobenzene



### HPLC Grade



- Formula: C<sub>6</sub>H<sub>4</sub>Cl<sub>2</sub>
- F.W.: 147.00
- CAS: 95-50-1

#### Physical Data:

- Viscosity (cP, 20 °C): 1.32
- Density (g/ml, 25 °C): 1.3058
- Boiling point (°C): 180.5
- Refractive index (20 °C): 1.5514

### D3030-4 o-Dichlorobenzene, HPLC Grade

HS-No: 2903 61 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

296 nm .....	1.00
300 nm .....	0.30
325 nm .....	0.10
350 nm .....	0.05
400 nm .....	0.01

UV Cutoff ..... max. 296

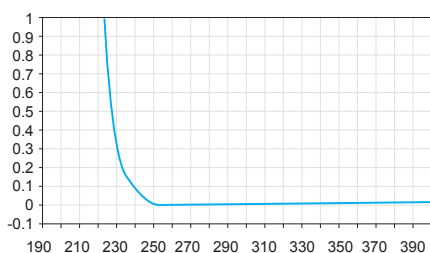
Assay (by GC) .....	min. 98.0 %
Color (APHA) .....	30
Water .....	0.02 %
Residue after Evaporation .....	5 ppm
Acidity (as HCl) .....	0.005 %

Code	Capacity
D3030-4-1001	1.0 L
D3030-4-4001	4.0 L

## 1,2-Dichloroethane



### HPLC Grade



- Formula:  $\text{ClCH}_2\text{CH}_2\text{Cl}$
- F.W.: 98.96
- CAS: 107-06-2

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.44
- Polarity Index ( $P'$ ): 3.5
- Viscosity (cP, 25 °C): 0.779
- Density (g/ml, 25 °C): 1.245
- Boiling point (°C): 84
- Solubility of water (% , 20 °C): 0.15
- Refractive index (25 °C): 1.444

### D3025-4 1,2-Dichloroethane, HPLC Grade

HS-No: 2903 15 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

226 nm	1.00
230 nm	0.50
235 nm	0.20
240 nm	0.10
245 nm	0.05
250 nm	0.02
255 nm	0.01
400 nm	0.01

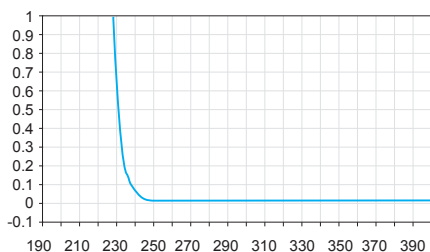
UV Cutoff	max. 226 nm
Assay (by GC)	min. 99.5 %
Color (APHA)	10
Water	0.02 %
Residue after Evaporation	5 ppm
Titration acid	0.0003 mEq/g

Code	Capacity
D3025-4-1001	1.0 L
D3025-4-4001	4.0 L

## Dichloromethane (Stabilized with Amylene)



### HPLC Grade



- Formula:  $\text{CH}_2\text{Cl}_2$
- F.W.: 84.93
- CAS: 75-09-2
- Stabilized with 40~200 ppm Amylene

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.42
- Polarity index ( $P'$ ): 3.1
- Viscosity (cP, 25 °C): 0.413
- Density (g/ml, 25 °C): 1.318
- Boiling point (°C): 40
- Solubility of water (% , 20 °C): 0.24
- Refractive index (25 °C): 1.421

### D3056-4 Dichloromethane, HPLC Grade

HS-No: 2903 12 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

233 nm	1.00
235 nm	0.50
240 nm	0.15
254 nm	0.01
280 nm	0.01

UV Cutoff ..... max. 233 nm

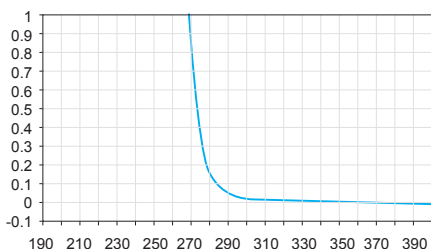
Assay (by GC)	min. 99.9 %
Color (APHA)	10
Water	0.02 %
Residue after Evaporation	2 ppm
Preservative (Amylene)	40 ~ 200 ppm
Titration acid	0.0003 mEq/g
Free Halogens	To pass test

Code	Capacity
D3056-4-1001	1.0 L
D3056-4-4001	4.0 L

## N,N-Dimethylacetamide



### HPLC Grade



- Formula:  $\text{CH}_3\text{CON}(\text{CH}_3)_2$
- F.W.: 87.12
- CAS: 127-19-5

#### Physical Data:

- Polarity Index (P<sup>i</sup>): 6.5
- Viscosity (cP, 25 °C): 2.14
- Density (g/ml, 25 °C): 0.937
- Boiling point (°C): 165~166
- Solubility of water (% , 20 °C): Miscible
- Refractive index (25 °C): 1.4384

### N1040-4 N,N-Dimethylacetamide, HPLC Grade

HS-No: 2924 19 00 90

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)

270 nm	1.00
280 nm	0.30
290 nm	0.15
310 nm	0.05
320 nm	0.03
360 nm	0.01
400 nm	0.01

UV Cutoff	max. 270 nm
Assay (by GC)	min. 99.8 %
Water	0.03 %
Residue after Evaporation	5 ppm

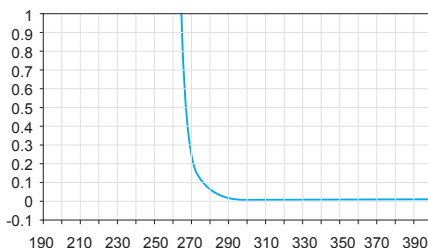
Code	Capacity
------	----------

N1040-4-1001	1.0 L
N1040-4-4001	4.0 L

## N,N-Dimethylformamide



### HPLC Grade



- Formula:  $\text{HCON}(\text{CH}_3)_2$
- F.W.: 73.09
- CAS: 68-12-2

#### Physical Data:

- Eluotropic value (E<sup>o</sup>) (on Alumina): 7.6
- Polarity index (P<sup>i</sup>): 6.4
- Viscosity (cP, 25 °C): 0.794
- Density (g/ml, 25 °C): 0.944
- Boiling point (°C): 153
- Solubility of water (% , 20 °C): Miscible
- Refractive index (25 °C): 1.427

### N1042-4 N,N-Dimethylformamide, HPLC Grade

HS-No: 2924 19 00 90

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

270 nm	1.00
275 nm	0.30
295 nm	0.10
310 nm	0.05
340 nm	0.01

UV Cutoff	max. 270 nm
Assay (by GC)	min. 99.9 %
Color (APHA)	10
Water	0.03 %
Residue after Evaporation	5 ppm
Titration acid	0.0005 mEq/g
Titration base	0.003 mEq/g

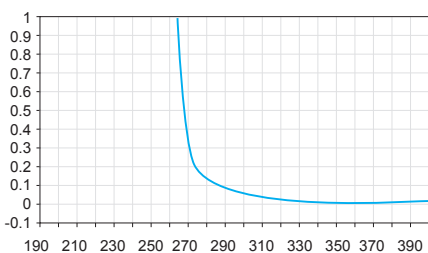
Code	Capacity
------	----------

N1042-4-1001	1.0 L
N1042-4-4001	4.0 L

## Dimethyl Sulfoxide



### HPLC Grade



- Formula:  $(\text{CH}_3)_2\text{SO}$
- F.W.: 78.13
- CAS: 67-68-5

#### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.62
- Polarity Index ( $P'$ ): 7.2
- Viscosity (cP, 25 °C): 1.987
- Density (g/ml, 25 °C): 1.096
- Boiling point (°C): 189
- Solubility of water (% , 20 °C): Miscible
- Refractive index (25 °C): 1.476

### D3161-4 Dimethyl Sulfoxide, HPLC Grade

HS-No: 2930 90 70 90

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

263 nm .....	1.00
270 nm .....	0.40
290 nm .....	0.18
310 nm .....	0.06
330 nm .....	0.02
350 nm .....	0.01

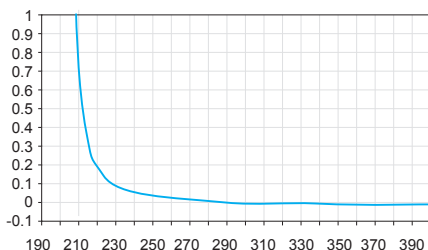
UV Cutoff .....	max. 263 nm
Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.05 %
Residue after Evaporation .....	5 ppm
Titrate acid .....	0.001 mEq/g

Code	Capacity
D3161-4-1001	1.0 L
D3161-4-4001	4.0 L

## 1,4-Dioxane



### HPLC Grade



- Formula:  $(\text{CH}_2)_4\text{O}_2$
- F.W.: 88.11
- CAS: 123-91-1

#### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.56
- Polarity index ( $P'$ ): 4.8
- Viscosity (cP, 25 °C): 1.177
- Density (g/ml, 25 °C): 1.028
- Boiling point (°C): 101.0
- Solubility of water (% , 20 °C): Miscible
- Refractive index (25 °C): 1.420

### D3090-4 1,4-Dioxane, HPLC Grade

HS-No: 2932 99 85

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

215 nm .....	1.00
225 nm .....	0.50
250 nm .....	0.24
270 nm .....	0.10
300 nm .....	0.01

UV Cutoff .....	max. 215 nm
Assay (by GC) .....	min. 99.8 %

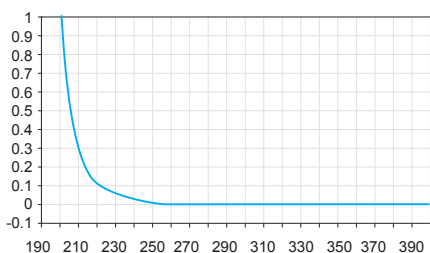
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	5 ppm
Titrate acid .....	0.0016 mEq/g
Peroxide (as $\text{H}_2\text{O}_2$ , at time of packaging) .....	0.003 %
Carbonyl (as HCHO) .....	0.01 %
Freezing point .....	Not below 11.0 °C

Code	Capacity
D3090-4-1001	1.0 L
D3090-4-4001	4.0 L

# Ethanol



## HPLC Grade



- Formula: C<sub>2</sub>H<sub>5</sub>OH
- F.W.: 46.07
- CAS: 64-17-5

### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.88
- Polarity Index (P<sup>i</sup>): 4.3
- Viscosity (cP, 25 °C): 1.074
- Density (g/ml, 25 °C): 0.787
- Boiling point (°C): 78
- Solubility of water (% , 20 °C): Miscible
- Refractive index (25 °C): 1.359

## E7026-4 Ethanol, HPLC Grade

HS-No: 2207 10 00 90

Meets ACS Specification

### Ultraviolet Spectrophotometry

Maximum UV Absorbance

205 nm .....	1.00
210 nm .....	0.65
220 nm .....	0.35
254 nm .....	0.04
UV Cutoff .....	max. 205 nm
Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.1 %

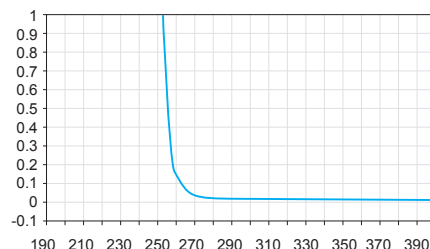
Residue after Evaporation .....	5 ppm
Titration acid .....	0.0003 mEq/g
Titration base .....	0.0002 mEq/g
Acetone, isopropyl alcohol .....	To pass test
Methanol (CH <sub>3</sub> OH) .....	0.1 %
Solubility in water .....	To pass test
Substances darkened by sulfuric acid ..	To pass test
Substances reducing permanganate ..	To pass test

Code	Capacity
E7026-4-1001	1.0 L
E7026-4-4001	4.0 L

# Ethyl Acetate



## HPLC Grade



- Formula: CH<sub>3</sub>COOC<sub>2</sub>H<sub>5</sub>
- F.W.: 88.11
- CAS: 141-78-6

### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.58
- Polarity index (P<sup>i</sup>): 4.4
- Viscosity (cP, 25 °C): 0.423
- Density (g/ml, 25 °C): 0.894
- Boiling point (°C): 77
- Solubility of water (% , 20 °C): 3.3
- Refractive index (25 °C): 1.370

## E7100-4 Ethyl Acetate, HPLC Grade

HS-No: 2915 31 00 00

Meets ACS Specification

### Ultraviolet Spectrophotometry

Maximum UV Absorbance

255 nm .....	1.00
260 nm .....	0.15
270 nm .....	0.025
UV Cutoff .....	max. 255 nm
Assay (by GC) .....	min. 99.9 %

Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	5 ppm
Titration acid .....	0.0009 mEq/g
Substances darkened by sulfuric acid ..	To pass test

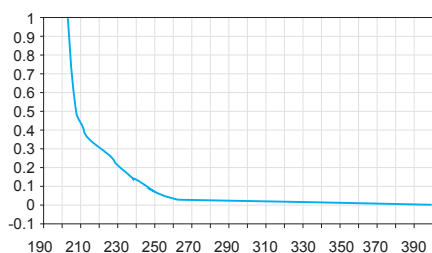
Code	Capacity
E7100-4-2501	2.5 L



## Ethyl Ether, Anhydrous (Stabilized with Ethanol)



### HPLC Grade



- Formula:  $C_2H_5OC_2H_5$
- F.W.: 74.12
- CAS: 60-29-7
- Stabilized with about 1.5~2.5 % Ethanol

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.38
- Polarity Index ( $P'$ ): 2.8
- Viscosity (cP, 25 °C): 0.24
- Density (g/ml, 25 °C): 0.708
- Boiling point (°C): 34
- Solubility of water (% , 20 °C): 1.26
- Refractive index (25 °C): 1.352

## D3103-4 Ethyl Ether, Anhydrous (Stabilized with Ethanol), HPLC Grade

HS-No: 2909 11 00 00

Meets ACS Specification

### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
218 nm	1.00
254 nm	0.07
280 nm	0.02
350 nm	0.01
UV Cutoff	max. 218 nm
Assay (by GC, Excluding preservative)	min. 99.8 %

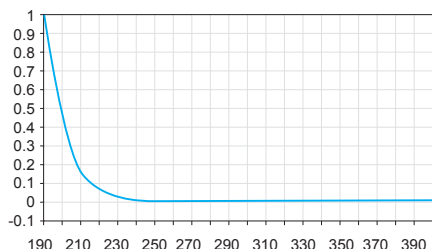
Color (APHA)	10
Water	0.03 %
Residue after Evaporation	5 ppm
Titrate acid	0.0002 mEq/g
Preservative ( $C_2H_5OH$ )	1.5 ~ 2.5 %
Peroxide (as $H_2O_2$ , at time of packaging)	max. 1 ppm
Carbonyl compounds (as HCHO)	0.001 %

Code	Capacity
D3103-4-1001	1.0 L
D3103-4-4001	4.0 L

## n-Heptane 97%



### HPLC Grade



- Formula:  $CH_3(CH_2)_5CH_3$
- F.W.: 100.21
- CAS: 142-82-5

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.01
- Polarity index ( $P'$ ): 0.1
- Viscosity (cP, 25 °C): 0.40
- Density (g/ml, 25 °C): 0.681
- Boiling point (°C): 98
- Solubility of water (% , 20 °C): 0.01
- Refractive index (25 °C): 1.385

## N3008-4 n-Heptane 97%, HPLC Grade

HS-No: 2901 10 90 00

Meets ACS Specification

### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
197 nm	1.00
200 nm	0.75
215 nm	0.020
254 nm	0.01
UV Cutoff	max. 197 nm

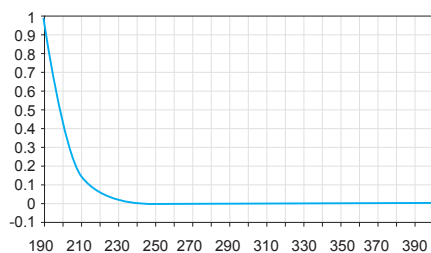
Assay (by GC, n-Heptane)	min. 97.0 %
(total C7 Hydrocarbons)	min. 99.9 %
Color (APHA)	10
Water	0.02 %
Residue after Evaporation	3 ppm
Substances darkened by sulfuric acid	To pass test

Code	Capacity
N3008-4-1001	1.0 L
N3008-4-4001	4.0 L

## n-Heptane 99%



### HPLC Grade



- Formula:  $\text{CH}_3(\text{CH}_2)_5\text{CH}_3$
- F.W.: 100.21
- CAS: 142-82-5

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.01
- Polarity index ( $P'$ ): 0.1
- Viscosity (cP, 25 °C): 0.40
- Density (g/ml, 25 °C): 0.681
- Boiling point (°C): 98
- Solubility of water (% ,20 °C): 0.01
- Refractive index (25 °C): 1.385

### N3008-4 n-Heptane 99%, HPLC Grade

HS-No: 2901 10 90 00

#### Ultraviolet Spectrophotometry

##### Maximum UV Absorbance

197 nm .....	1.00
200 nm .....	0.75
215 nm .....	0.020
254 nm .....	0.01
UV Cutoff .....	max. 197 nm

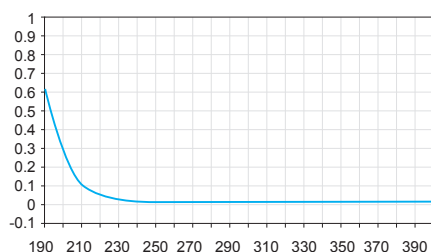
Assay (by GC, n-Heptane) .....	min. 99.0 %
(total C7 Hydrocarbons) .....	min. 99.9 %
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	3 ppm
Substances darkened by sulfuric acid	To pass test

Code	Capacity
N3008-4-1001	1.0 L
N3008-4-4001	4.0 L

## n-Hexane 95%



### HPLC Grade



- Formula:  $\text{CH}_3(\text{CH}_2)_4\text{CH}_3$
- F.W.: 86.18
- CAS: 110-54-3

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.01
- Polarity index ( $P'$ ): 0.1
- Viscosity (cP, 25 °C): 0.300
- Density (g/ml, 25 °C): 0.656
- Boiling point (°C): 69
- Solubility of water (% ,20 °C): 0.01
- Refractive index (25 °C): 1.372

### N3057-4 n-Hexane 95%, HPLC Grade

HS-No: 2901 10 90 00

#### Ultraviolet Spectrophotometry

##### Maximum UV Absorbance

195 nm .....	1.00
210 nm .....	0.25
220 nm .....	0.075
254 nm .....	0.005
UV Cutoff .....	max. 195 nm
Assay (by GC, n-Hexane) .....	min. 95 %
(total C6 Hydrocarbone) .....	min. 99.8 %

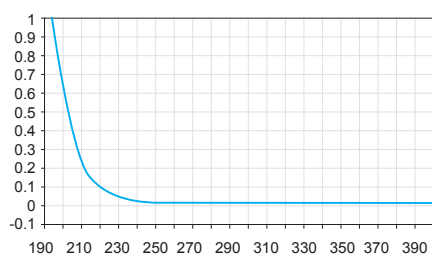
Color (APHA) .....	10
Water .....	0.02 %
Residue after Evaporation .....	3 ppm
Water soluble titrable acid .....	0.0003 mEq/g
Sulfur compounds (as S) .....	0.005 %
Thiophene .....	To pass test

Code	Capacity
N3057-4-1001	1.0 L
N3057-4-4001	4.0 L

## Isooctane (2,2,4-Trimethylpentane)



### HPLC Grade



- Formula:  $(CH_3)_2CHCH_2C(CH_3)_3$
- F.W.: 114.23
- CAS: 540-84-1

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.01
- Polarity index (P'): 0.1
- Viscosity (cP, 25 °C): 0.51
- Density (g/ml, 25 °C): 0.691
- Boiling point (°C): 99
- Solubility of water (% 20 °C): 0.006
- Refractive index (25 °C): 1.389

### TR105-4 Isooctane (2,2,4-Trimethylpentane), HPLC Grade

HS-No: 2901 10 90 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
205 nm	1.00
225 nm	0.10
254 nm	0.014
UV Cutoff	max. 205 nm
Assay (by GC)	min. 99.0 %

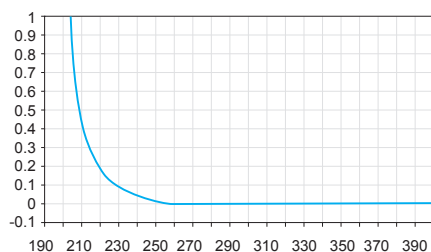
Code	Capacity
TR105-4-1001	1.0 L
TR105-4-4001	4.0 L

Color (APHA)	10
Water	0.02 %
Residue after Evaporation	4 ppm
Water soluble titrable acid	0.0003 mEq/g
Sulfur compounds (as S)	To pass test

## Methanol



### HPLC Grade



- Formula:  $CH_3OH$
- F.W.: 32.04
- CAS: 67-56-1

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.95
- Polarity index (P'): 5.1
- Viscosity (cP, 25 °C): 0.544
- Density (g/ml, 25 °C): 0.787
- Boiling point (°C): 65
- Solubility of water (% 20 °C): Miscible
- Refractive index (25 °C): 1.326

### M2097-4 Methanol, HPLC Grade

HS-No: 2905 11 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
205 nm	1.00
220 nm	0.25
230 nm	0.15
254 nm	0.02
280 nm	0.01
UV Cutoff	max. 205 nm
Gradient Elution test	To pass test
Assay (by GC)	min. 99.9 %
Color (APHA)	10

#### LC Gradient Suitability

Gradient Elution test	To pass test
Assay (by GC)	min. 99.9 %
Color (APHA)	10

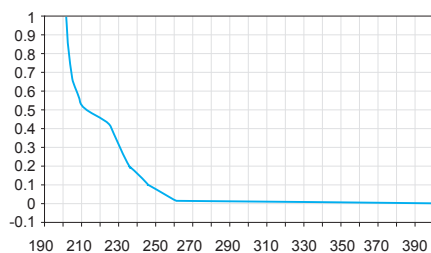
Code	Capacity
M2097-4-1001	1.0 L
M2097-4-4001	4.0 L

Water	0.05 %
Residue after Evaporation	3 ppm
Titration acid	0.0003 mEq/g
Titration base	0.0002 mEq/g
Carbonyl compounds	0.001 %
(each of Acetone, Formaldehyde and Acetaldehyde)	
Substances darkened by sulfuric acid	To pass test
Substances reducing permanganate	To pass test
Solubility in water	To pass test

## Methyl t-Butyl Ether



### HPLC Grade



- Formula:  $(\text{CH}_3)_3\text{COCH}_3$
- F.W.: 88.14
- CAS: 1634-04-4

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.35
- Polarity index ( $P'$ ): 2.5
- Viscosity (cP, 25 °C): 0.28
- Density (g/ml, 25 °C): 0.740
- Boiling point (°C): 55
- Solubility of water (%<sub>20 °C</sub>): 1.5
- Refractive index (25 °C): 1.366

### M2060-4 Methyl t-Butyl Ether, HPLC Grade

HS-No: 2905 14 10

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

210 nm	1.00
225 nm	0.50
254 nm	0.10
300 nm	0.01
UV Cutoff	max. 210 nm

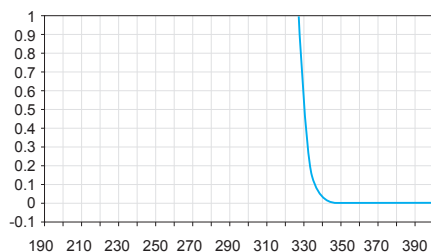
Assay (by GC)	min. 99.0 %
Color (APHA)	10
Water	0.05 %
Residue after Evaporation	5 ppm
Peroxide (as $\text{H}_2\text{O}_2$ , at time of packaging)	1 ppm

Code	Capacity
M2060-4-1001	1.0 L
M1060-4-4001	2.5 L

## Methyl Ethyl Ketone



### HPLC Grade



- Formula:  $\text{C}_4\text{H}_8\text{O}$
- F.W.: 72.11
- CAS: 78-93-3

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.51
- Polarity index ( $P'$ ): 4.7
- Viscosity (cP, 25 °C): 0.38
- Density (g/ml, 25 °C): 0.799
- Boiling point (°C): 80
- Solubility of water (%<sub>20 °C</sub>): 10.0
- Refractive index (25 °C): 1.377

### E7125-4 Methyl Ethyl Ketone, HPLC Grade

HS-No: 2914 12 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

329 nm	1.00
335 nm	0.30
340 nm	0.08
350 nm	0.01
400 nm	0.01
UV Cutoff	max. 329 nm

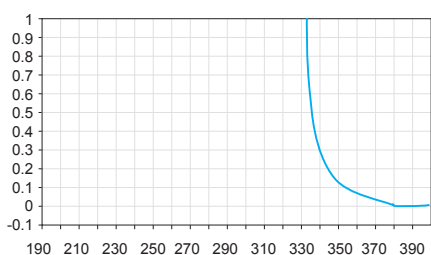
Assay (by GC)	min. 99.6 %
Color (APHA)	10
Water	0.03 %
Residue after Evaporation	3 ppm
Titration acid	0.0005 mEq/g
Substances darkened by sulfuric acid	To pass test

Code	Capacity
E7125-4-1001	1.0 L
E7125-4-4001	4.0 L

## Methyl Isobutyl Ketone



### HPLC Grade



- Formula:  $(\text{CH}_3)_2\text{CHCH}_2\text{COCH}_3$
- F.W.: 100.16
- CAS: 108-10-1

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.43
- Polarity index (P'): 4.2
- Viscosity (cP, 25 °C): 0.58
- Density (g/ml, 25 °C): 0.801
- Boiling point (°C): 117 ~ 118
- Refractive index (20 °C): 1.3957

### M2120-4 Methyl Isobutyl Ketone, HPLC Grade

HS-No: 2914 13 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
334 nm	1.00
340 nm	0.50
350 nm	0.25
360 nm	0.15
400 nm	0.01
UV Cutoff	max. 334 nm

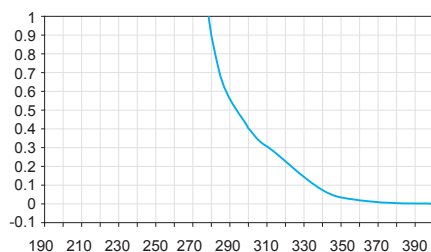
Assay (by GC)	min. 99.0 %
Color (APHA)	10
Water	0.05 %
Residue after Evaporation	5 ppm
Titrate acid	0.002 mEq/g

Code	Capacity
M2120-4-1001	1.0 L
M2120-4-4001	4.0 L

## N-Methyl-2-Pyrrolidone



### HPLC Grade



- Formula:  $\text{C}_5\text{H}_9\text{NO}$
- F.W.: 99.13
- CAS: 872-50-4

### Physical Data:

- Polarity index (P'): 6.7
- Viscosity (cP, 25 °C): 1.65
- Density (g/ml, 25 °C): 1.025
- Boiling point (°C): 202
- Solubility of water (% 20 °C): Miscible
- Refractive index (25 °C): 1.469

### M2160-4 N-Methyl-2-Pyrrolidone, HPLC Grade

HS-No: 2933 79 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
285 nm	1.00
300 nm	0.50
325 nm	0.10
350 nm	0.03
400 nm	0.01
UV Cutoff	max. 285 nm

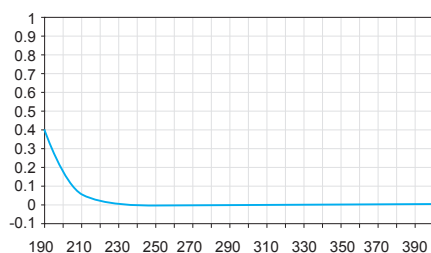
Assay (by GC)	min. 99.7 %
Color (APHA)	10
Water	0.02 %
Residue after Evaporation	10 ppm
Free Amines (as $\text{CH}_3\text{NH}_2$ )	0.01 %
Chloride (Cl)	1 ppm

Code	Capacity
M2160-4-1001	1.0 L
M2160-4-4001	4.0 L

## n-Pentane



### HPLC Grade



- Formula:  $\text{CH}_3(\text{CH}_2)_3\text{CH}_3$   
 - F.W.: 72.15  
 - CAS: 109-66-0

#### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.00  
 - Polarity index ( $P'$ ): 0.00  
 - Viscosity (cP, 25 °C): 0.22  
 - Density (g/ml, 25 °C): 0.621  
 - Boiling point (°C): 36  
 - Solubility of water (% ,20°C): 0.009  
 - Refractive index (25 °C): 1.355

### N6015-4 n-Pentane, HPLC Grade

HS-No: 2901 10 90 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

190 nm .....	1.00
200 nm .....	0.30
210 nm .....	0.10
254 nm .....	0.01
UV Cutoff .....	max. 190 nm

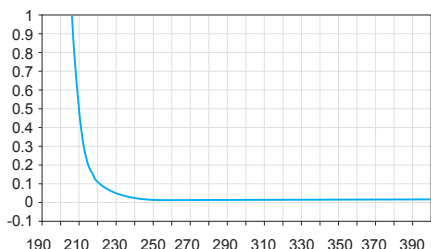
Assay (by GC, n-Pentane) .....	min. 98.0 %
(total C5 Hydrocarbons) .....	min. 99.9 %
Color (APHA) .....	5
Water .....	0.02 %
Residue after Evaporation .....	5 ppm
Substances darkened by sulfuric acid	To pass test

Code	Capacity
N6015-4-1001	1.0 L
N6015-4-4001	4.0 L

## Petroleum Ether (35 ~ 60 °C)



### HPLC Grade



- CAS: 8032-32-4

#### Physical Data:

- Polarity index ( $P'$ ): 0.1  
 - Density (g/ml, 25 °C): 0.64  
 - Boiling point (°C): 35~60  
 - Refractive index (25 °C): 1.365

### P2049-4 Petroleum Ether (35~60°C), HPLC Grade

HS-No: 2710 11 25 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

210 nm .....	1.00
220 nm .....	0.30
230 nm .....	0.10
240 nm .....	0.05
260 nm .....	0.01
UV Cutoff .....	max. 210 nm

Boiling range (Initial to dry point) .....	35 ~ 60°C
Color (APHA) .....	10
Water .....	0.01 %
Residue after Evaporation .....	5 ppm
Acidity .....	To pass test

Code	Capacity
P2049-4-1001	1.0 L
P2049-4-4001	4.0 L

## Phosphoric acid 85%



Acid & Buffers

### HPLC Grade

- Formula:  $\text{H}_3\text{PO}_4$
- F.W.: 98.00
- CAS: 7664-38-2

### O6021-4 Phosphoric acid 85%, HPLC Grade

HS-No: 2933 99 90 90

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)

220 nm	0.05
254 nm	0.04
300 nm	0.02
Assay	min. 85.0 %
Color (APHA)	10
Insoluble matter	0.001 %
Chloride (Cl)	3 ppm
Nitrate ( $\text{NO}_3$ )	5 ppm
Sulfate ( $\text{SO}_4$ )	0.003 %
Volatile acids (as $\text{CH}_3\text{COOH}$ )	0.001 %

Antimony (Sb)	0.002 %
Calcium	0.002 %
Magnesium	0.002 %
Potassium (K)	0.005 %
Sodium (Na)	0.025 %
Arsenic (As)	1 ppm
Heavy metals (as Pb)	0.001 %
Iron (Fe)	0.003 %
Manganese (Mn)	0.5 ppm
Reducing substances	To pass test

Code	Capacity
O6021-4-1001	1.0 L
O6021-4-4001	4.0 L

## Potassium phosphate monobasic



Acid & Buffers

### HPLC Grade

- Formula:  $\text{KH}_2\text{PO}_4$
- F.W.: 136.09
- CAS: 7778-77-0

### P5104-4 Potassium phosphate, monobasic, HPLC Grade

HS-No: 2835 2400

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)

254 nm	0.04
Assay	min. 99.0 %
pH of a 5% solution (25 °C)	4.1 ~ 4.5
Insoluble matter	0.01 %
Loss on drying (at 105 °C)	0.2 %
Chloride (Cl)	0.001 %

Nitrogen compounds (as N)	0.001 %
Sulfate ( $\text{SO}_4$ )	0.003 %
Heavy metals (as Pb)	0.001 %
Iron (Fe)	0.002 %
Sodium (Na)	0.005 %

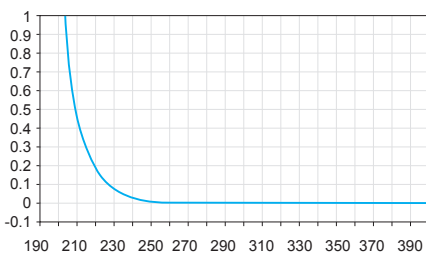
Code	Capacity
P5104-4-1001	1.0 L
P5104-4-4001	4.0 L



## 1-Propanol (n-Propyl Alcohol)



### HPLC Grade



- Formula:  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$
- F.W.: 60.10
- CAS: 71-23-8

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.82
- Polarity index ( $P'$ ): 4.0
- Viscosity (cP, 25 °C): 1.95
- Density (g/ml, 25 °C): 0.802
- Boiling point (°C): 97
- Solubility of water (% ,20°C): Miscible
- Refractive index (25 °C): 1.383

### PR101-4 1-Propanol (n-Propyl Alcohol), HPLC Grade

HS-No: 2837 20 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

210 nm .....	1.00
225 nm .....	0.50
250 nm .....	0.05
300 nm .....	0.01
UV Cutoff .....	max. 210 nm
Assay (by GC) .....	min. 99.8 %
Color (APHA) .....	10
Water .....	0.05 %

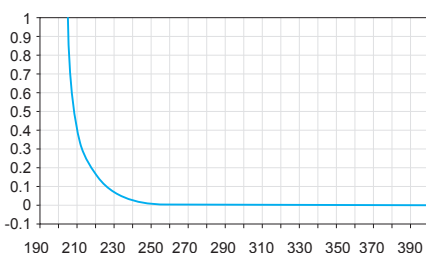
Residue after Evaporation .....	3 ppm
Titration acid .....	0.0003 mEq/g
Carbonyl compounds (as $\text{C}_2\text{H}_5\text{CHO}$ ) .....	0.03 %
Ethanol ( $\text{CH}_3\text{CH}_2\text{OH}$ ) .....	0.01 %
Methanol ( $\text{CH}_3\text{OH}$ ) .....	0.01 %
Isopropyl Alcohol ( $\text{CH}_3\text{CHOHCH}_3$ ) .....	0.05 %
Solubility in water .....	To pass test

Code	Capacity
PR101-4-1001	1.0 L
PR101-4-4001	4.0 L

## 2-Propanol (Isopropyl Alcohol)



### HPLC Grade



- Formula:  $(\text{CH}_3)_2\text{CHOH}$
- F.W.: 60.10
- CAS: 67-63-0

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.82
- Polarity index ( $P'$ ): 3.9
- Viscosity (cP, 25°C): 2.038
- Density (g/ml, 25 °C): 0.782
- Boiling point (°C): 82
- Solubility of water (% ,20°C): Miscible
- Refractive index (25 °C): 1.375

### PR141-4 2-Propanol (Isopropyl Alcohol), HPLC Grade

HS-No: 2905 12 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

205 nm .....	1.00
220 nm .....	0.25
230 nm .....	0.13
254 nm .....	0.02
UV Cutoff .....	max. 205 nm
Assay (by GC) .....	min. 99.9 %
Color (APHA) .....	10

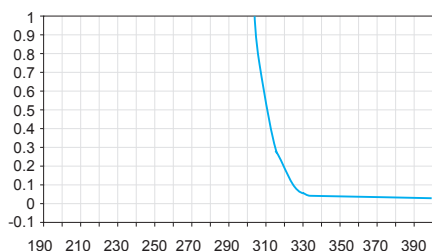
Water .....	0.05 %
Residue after Evaporation .....	2 ppm
Titration acid or Base .....	0.0001 mEq/g
Carbonyl Compounds .....	0.002 %
(as propionaldehyde or acetone)	
Solubility in water .....	To pass test

Code	Capacity
PR141-4-1001	1.0 L
PR141-4-4001	4.0 L

## Pyridine



### HPLC Grade



- Formula: C<sub>5</sub>H<sub>5</sub>N
- F.W.: 79.10
- CAS: 110-86-1

### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.71
- Polarity index (P'): 5.3
- Viscosity (cP, 25 °C): 0.88
- Density (g/ml, 25 °C): 0.978
- Boiling point (°C): 115
- Solubility of water (% 20°C): Miscible
- Refractive index (25 °C): 1.507

### P9005-4 Pyridine, HPLC Grade

HS-No: 2837 20 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
330 nm .....	1.00
340 nm .....	0.10
350 nm .....	0.01
400 nm .....	0.005
UV Cutoff .....	max. 330 nm
Assay (by GC) .....	min. 99.5 %
Color (APHA) .....	10
Water .....	0.02 %

Residue after Evaporation .....	5 ppm
Ammonia (as NH <sub>3</sub> ) .....	0.002 %
Chloride (Cl) .....	0.0005 %
Sulfate (SO <sub>4</sub> ) .....	0.001 %
Copper (Cu) .....	5 ppm
Solubility in water .....	To pass test
Reducing Substances .....	To pass test

Code	Capacity
P9005-4-1001	1.0 L
P9005-4-4001	4.0 L

## Sodium acetate trihydrate

Acid & Buffers

### HPLC Grade

- Formula: CH<sub>3</sub>COONa
- F.W.: 136.08
- CAS: 6131-90-4

### S5022-4 Sodium acetate trihydrate, HPLC Grade

HS-No: 2915 22 00 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)	
254 nm .....	0.02
Assay .....	99.0 ~ 101.0 %
pH of a 5% solution (25°C) .....	7.5 ~ 9.2
Substances reducing permanganate .....	To pass test
Insoluble matter .....	0.005 %
Chloride (Cl) .....	0.001 %

Phosphate (PO <sub>4</sub> ) .....	5 ppm
Sulfate (SO <sub>4</sub> ) .....	0.002 %
Heavy metals (as Pb) .....	5 ppm
Iron (Fe) .....	5 ppm
Calcium (Ca) .....	0.005 %
Magnesium (Mg) .....	0.002 %
Potassium (K) .....	0.005 %

Code	Capacity
S5022-4-1001	1.0 L
S5022-4-4001	4.0 L

## Sodium bicarbonate

Acid & Buffers

### HPLC Grade

- Formula: NaHCO<sub>3</sub>
- F.W.: 84.01
- CAS: 144-55-8

### Physical Data:

- Vapour pressure : 972 hPa( 100 °)
- Density (g/ml, 22 °C): 2.22
- Melting point (°C): 270
- Solubility of water (% ,20°C): 96 g/l

### S5135-4 Sodium bicarbonate, HPLC Grade

HS-No: 2836 30 00

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)

254 nm .....	0.05
280 nm .....	0.02
350 nm .....	0.01

Assay ..... 99.7 ~ 100.3 %

Insoluble matter ..... 0.015 %

Chloride (Cl) ..... 0.003 %

Phosphate (PO<sub>4</sub>) ..... 0.001 %

Sulfur compounds (as SO<sub>4</sub>) ..... 0.003 %

Ammonium (NH<sub>4</sub>) ..... 5 ppm

Heavy metals (as Pb) ..... 5 ppm

Iron (Fe) ..... 0.001 %

Calcium (Ca) ..... 0.02 %

Magnesium (Mg) ..... 0.005 %

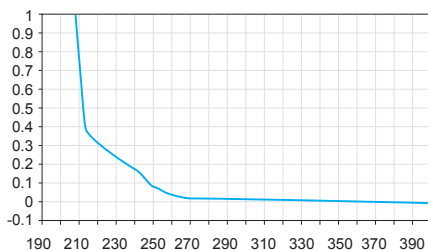
Potassium (K) ..... 0.005 %

Code	Capacity
S5135-4-1001	1.0 L
S5135-4-4001	4.0 L

## Tetrahydrofuran



### HPLC Grade



- Formula: C<sub>4</sub>H<sub>8</sub>O
- F.W.: 72.11
- CAS: 109-99-9

### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.45
- Polarity index (P<sup>n</sup>): 4.0
- Viscosity (cP, 25 °C): 0.456
- Density (g/ml, 25 °C): 0.880
- Boiling point (°C): 65
- Solubility of water (% ,20°C): Miscible
- Refractive index (25 °C): 1.404

### T2061-4 Tetrahydrofuran, HPLC Grade

HS-No: 2932 11 00 90

Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance

210 nm .....	1.00
215 nm .....	0.60
230 nm .....	0.30
254 nm .....	0.10

UV Cutoff ..... max. 210 nm

Assay (by GC) ..... min. 99.9 %

Color (APHA) ..... 10

Water ..... 0.02 %

Residue after Evaporation ..... 5 ppm

Peroxides (as H<sub>2</sub>O<sub>2</sub>, at time of packaging) ..... 0.015 %

Code	Capacity
T2061-4-1001	1.0 L
T2061-4-4001	4.0 L

## Tetrahydrofuran (Stabilized with BHT)



### HPLC Grade

- Formula: C<sub>4</sub>H<sub>8</sub>O
- F.W.: 72.11
- CAS: 109-99-9
- Stabilized with 200~300 ppm BHT

### Physical Data:

- Elutropic value (E°) (on Alumina): 0.45
- Polarity index (P'): 4.0
- Viscosity (cP, 25 °C): 0.456
- Density (g/ml, 25 °C): 0.880
- Boiling point (°C): 65
- Solubility of water (% ,20°C): Miscible
- Refractive index (25 °C): 1.404

### T2061-4 Tetrahydrofuran (Stabilized with BHT), HPLC Grade

HS-No: 2932 11 00 90

#### Meets ACS Specification

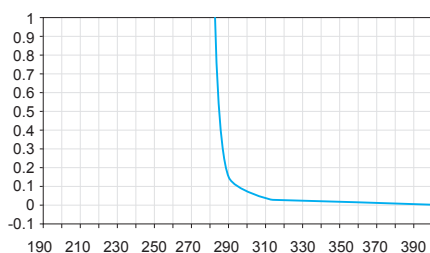
Assay (by GC) .....	min. 99.5 %	Peroxides (as H <sub>2</sub> O <sub>2</sub> , at time of packaging) .....	0.015 %
Color (APHA) .....	10	Stabilizer (BHT) .....	200 ~ 300 ppm
Water .....	0.02 %		

Code	Capacity
T2061-4-1001	1.0 L
T2061-4-4001	4.0 L

## Toluene



### HPLC Grade



- Formula: C<sub>6</sub>H<sub>5</sub>CH<sub>3</sub>
- F.W.: 92.14
- CAS: 108-88-3

### Physical Data:

- Elutropic value (E°) (on Alumina): 0.29
- Polarity index (P'): 2.4
- Viscosity (cP, 25 °C): 0.560
- Density (g/ml, 25 °C): 0.864
- Boiling point (°C): 111
- Solubility of water (% ,20°C): 0.033
- Refractive index (25 °C): 1.494

### T5031-4 Toluene, HPLC Grade

HS-No: 2902 30 00 00

#### Meets ACS Specification

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance		Color (APHA) .....	10
286 nm .....	1.00	Water .....	0.02 %
288 nm .....	0.40	Residue after Evaporation .....	5 ppm
300 nm .....	0.10	Sulfur Compounds (as S) .....	0.003 %
350 nm .....	0.01	Substances darkened by sulfuric acid	To pass test
UV Cutoff .....	max. 286 nm		
Assay (by GC) .....	min. 99.8 %		

Code	Capacity
T5031-4-1001	1.0 L
T5031-4-4001	4.0 L

LC-MS

ULTIMATE

PESTICIDE

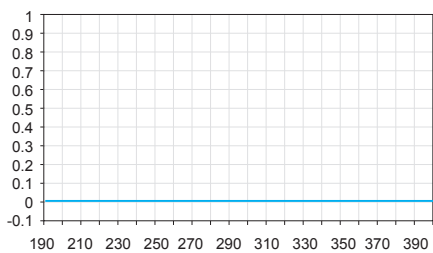
HPLC

BIO

ULTRA DRY

# Water

## HPLC Grade



- Formula: H<sub>2</sub>O
- F.W.: 18.01
- CAS: 7732-18-5

### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.99
- Polarity index (P'): 10.2
- Viscosity (cP, 25 °C): 0.89
- Density (g/ml, 25 °C): 0.998
- Boiling point (°C): 100
- Solubility of water (% ,20°C): 1.333
- Refractive index (25 °C): 72.7

## W1001-4 Water, HPLC Grade

HS-No: 2851 00 10 00

Meets ACS Specification

### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
190 nm .....	0.01
200 nm .....	0.01
250 ~ 400 nm .....	0.005
UV Cutoff .....	max. 190 nm

### LC Gradient Suitability

Gradient Elution test .....	To pass test
Color (APHA) .....	5
Residue after Evaporation (at time of packaging) .....	10 ppm
Conductance (µS/cm) .....	2

Code	Capacity
W1001-4-1001	1.0 L
W1001-4-4001	4.0 L

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY

## SOLVENT SPECIFICATIONS

SOLVENT NAME SYNONYMS

LC - MS

ULTIMATE

PESTICIDE

HPLC

**BIO**

ULTRA DRY

# DSP BIO

Item	UV Cutoff (max. nm)	Water (max. %)	Other
Acetonitrile	<190	10	
Dichloromethane w /Amylene	233	30	Chloride < 10 ppm
			Acidity < 0.0003 mEq/g
N,N-dimethylformamide	270	300	Amines < 5 ppm
Dimethyl Sulfoxide	263	250	Acetone < 0.001 %
Methanol	205	300	Amines < 5 ppm
N-Methyl-2-Pyrrolidone	285	200	Amines < 10 ppm
Pyridine	330	100	
Tetrahydrofuran	210	50	
Triethyl Amine	-	0.1%	

LC-MS

ULTIMATE

PESTICIDE

HPPLC

BIO

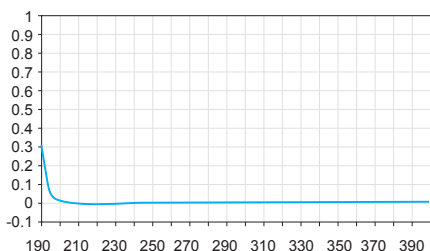
ULTRA DRY



## Acetonitrile



### BIO Grade



- Formula: CH<sub>3</sub>CN
- F.W.: 41.05
- CAS: 75-05-8

#### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.65
- Polarity Index (P'): 5.8
- Viscosity (cP, 25 °C): 0.369
- Density (g/ml, 25 °C): 0.779
- Boiling point (°C): 82
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.342

### A1133-14 Acetonitrile, Bio Grade

HS-No: 2926 90 95 90

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
190 nm	1.00
195 nm	0.15
200 nm	0.07
205 nm	0.05
210 nm	0.04
220 nm	0.02
254 nm	0.01
UV Cutoff	max. 190 nm

#### LC Gradient Suitability

Gradient Elution test	passes test
Assay (by GC)	min. 99.9 %
Color (APHA)	10
Water	10 ppm
Residue after Evaporation	1 ppm
Titration acid	0.008 mEq/g
Titration base	0.0006 mEq/g

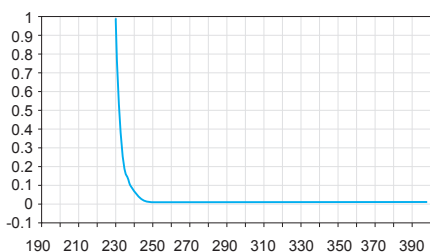
#### Code Capacity

A1133-14-1001	1.0 L
A1133-14-4001	4.0 L

## Dichloromethane (Stabilized with Amylene)



### BIO Grade



- Formula: CH<sub>2</sub>Cl<sub>2</sub>
- F.W.: 84.93
- CAS: 75-09-2
- Stabilized with 40 ~ 200ppm Amylene

#### Physical data:

- Eluotropic value (E°) (on Alumina): 0.42
- Polarity index (P'): 3.1
- Viscosity (cP, 25 °C): 0.413
- Density (g/ml, 25 °C): 1.318
- Boiling point (°C): 40
- Solubility of water (% , 20 °C): 0.24
- Refractive index (25 °C): 1.421

### D3056-14 Dichloromethane, Bio Grade

HS-No: 2903 12 00 00

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
233 nm	1.00
240 nm	0.12
254 nm	0.01
UV Cutoff	max. 233 nm

Chloride (Cl)	10 ppm
Titration acid	0.0003 mEq/g
Assay (by GC)	min. 99.9 %
Color (APHA)	10
Water	30 ppm
Residue after Evaporation	3 ppm

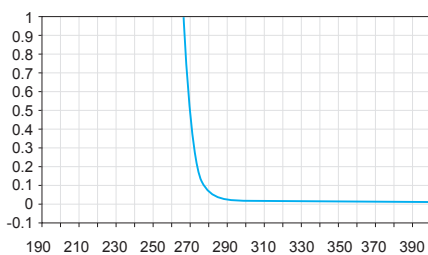
#### Code Capacity

D3056-14-1001	1.0 L
D3056-14-4001	4.0 L

## N,N-Dimethylformamide



### BIO Grade



- Formula:  $\text{HCON}(\text{CH}_3)_2$
- F.W.: 73.09
- CAS: 68-12-2

### Physical Data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 7.6
- Polarity Index ( $P'$ ): 6.4
- Viscosity (cP, 25 °C): 0.794
- Density (g/ml, 25 °C): 0.944
- Boiling point (°C): 153
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.427

### N1042-14 N,N-Dimethylformamide, Bio Grade

HS-No: 2924 19 00 90

#### Ultraviolet Spectrophotometry

##### Maximum UV Absorbance

270 nm .....	1.00
275 nm .....	0.30
295 nm .....	0.10
310 nm .....	0.05
340 nm .....	0.01

UV Cutoff ..... max. 270 nm

Amines (as Dimethylamine) .....	5 ppm
Assay (by GC) .....	min. 99.8 %
Color (APHA) .....	10
Water .....	0.03 %
Residue after Evaporation .....	5 ppm

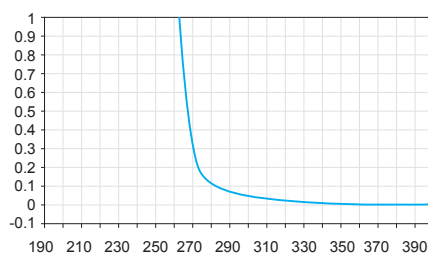
#### Code Capacity

N1042-14-1001	1.0 L
N1042-14-4001	4.0 L

## Dimethyl sulfoxide



### BIO Grade



- Formula:  $(\text{CH}_3)_2\text{SO}$
- F.W.: 78.13
- CAS: 65-68-5

### Physical data:

- Eluotropic value ( $E^\circ$ ) (on Alumina): 0.62
- Polarity index ( $P'$ ): 7.2
- Viscosity (cP, 25 °C): 1.987
- Density (g/ml, 25 °C): 1.096
- Boiling point (°C): 189
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.476

### D3161-14 Dimethyl sulfoxide, Bio Grade

HS-No: 2930 90 70 90

#### Ultraviolet Spectrophotometry

##### Maximum UV Absorbance

263 nm .....	1.00
270 nm .....	0.40
275 nm .....	0.20
280 nm .....	0.15
335 nm .....	0.02
400 nm .....	0.01

UV Cutoff ..... max. 263 nm

Assay (by GC) .....	min. 99.7 %
Color (APHA) .....	10
Water .....	0.025 %
Residue after Evaporatijon .....	5 ppm

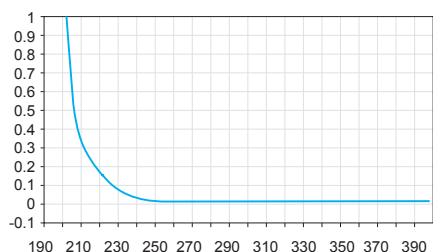
#### Code Capacity

D3161-14-1001	1.0 L
D3161-14-4001	4.0 L

## Methanol



### BIO Grade



- Formula: CH<sub>3</sub>OH
- F.W.: 32.04
- CAS: 67-56-1

#### Physical Data:

- Eluotropic value (E°) (on Alumina): 0.95
- Polarity Index (P'): 5.1
- Viscosity (cP, 25 °C): 0.544
- Density (g/ml, 25 °C): 0.787
- Boiling point (°C): 65
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.326

### M2097-14 Methanol, Bio Grade

HS-No: 2905 11 00 00

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
205 nm	1.00
220 nm	0.25
230 nm	0.15
254 nm	0.02
280 nm	0.01
UV Cutoff	max. 205 nm
Acetone	To pass test (about 0.001%)

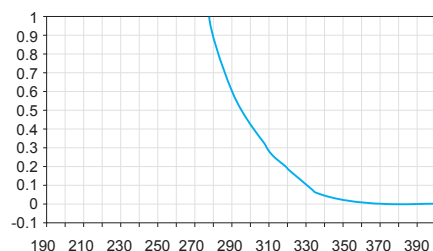
Assay (by GC)	min. 99.9 %
Color (APHA)	10
Water	0.03 %
Residue after Evaporation	3 ppm
Titration acid	0.0003 mEq/g
Titration base	0.0002 mEq/g
Substances reducing permanganate	To pass test
Solubility in water	To pass test

Code	Capacity
M2097-14-1001	1.0 L
M2097-14-4001	4.0 L

## N-Methyl-2-Pyrrolidone



### BIO Grade



- Formula: C<sub>5</sub>H<sub>9</sub>NO
- F.W.: 99.13
- CAS: 872-50-4

#### Physical data:

- Polarity index (P'): 6.7
- Viscosity (cP, 25 °C): 1.65
- Density (g/ml, 25 °C): 1.025
- Boiling point (°C): 202
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.469

### M2160-14 N-Methyl-2-Pyrrolidone, Bio Grade

HS-No: 2933 79 00 00

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
285 nm	1.00
300 nm	0.50
325 nm	0.10
350 nm	0.03
400 nm	0.01
UV Cutoff	max. 285 nm

Amines (as Dimethylamine)	5 ppm
Assay (by GC)	min. 99.5 %
Color (APHA)	20
Water	200 ppm
Residue after Evaporation	10 ppm

Code	Capacity
M2160-14-1001	1.0 L
M2160-14-1001	4.0 L

LC-MS

ULTIMATE

PESTICIDE

HPLC

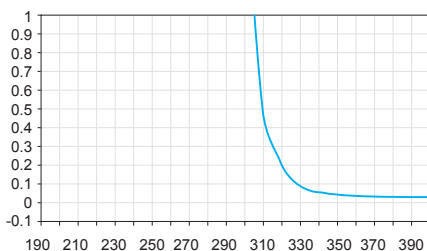
BIO

ULTRA DRY

## Pyridine



### BIO Grade



- Formula:  $C_5H_5N$
- F.W.: 79.10
- CAS: 110-86-1

#### Physical Data:

- Eluotropic value ( $E^o$ ) (on Alumina): 0.71
- Polarity Index ( $P'$ ): 5.3
- Viscosity (cP, 25 °C): 0.88
- Density (g/ml, 25 °C): 0.978
- Boiling point (°C): 115
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.507

### P9005-14 Pyridine, Bio Grade

HS-No: 2837 20 00 00

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
330 nm	1.00
340 nm	0.10
350 nm	0.01
400 nm	0.005
UV Cutoff	max. 330 nm
Amines (by Ninhydrin test)	10 ppm

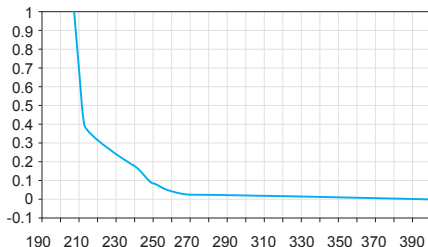
Assay (by GC)	min. 99.0 %
Color (APHA)	10
Water	0.01 %
Residue after Evaporation	5 ppm
Chloride (Cl)	0.001 %
Sulfate ( $SO_4$ )	0.001 %
Copper (Cu)	5 ppm
Solubility in water	To pass test
Reducing Substances	To pass test

Code	Capacity
P9005-14-1001	1.0 L
P9005-14-4001	4.0 L

## Tetrahydrofuran



### BIO Grade



- Formula:  $C_4H_8O$
- F.W.: 72.11
- CAS: 109-99-9

#### Physical data:

- Eluotropic value ( $E^o$ ) (on Alumina): 0.45
- Polarity index ( $P'$ ): 4.0
- Viscosity (cP, 25 °C): 0.456
- Density (g/ml, 25 °C): 0.880
- Boiling point (°C): 65
- Solubility of water (% , 20 °C): miscible
- Refractive index (25 °C): 1.404

### T2061-14 Tetrahydrofuran, Bio Grade

HS-No: 2932 11 00 90

#### Ultraviolet Spectrophotometry

Maximum UV Absorbance	
210 nm	1.00
215 nm	0.60
230 nm	0.30
254 nm	0.10
UV Cutoff	max. 210 nm

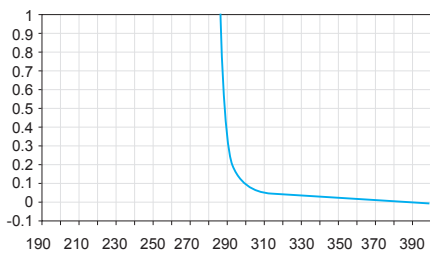
Assay (by GC)	min. 99.8 %
Color (APHA)	10
Water	50 ppm
Residue after Evaporation	5 ppm
Peroxides (as $H_2O_2$ , at the time of packing)	0.015 %

Code	Capacity
T2061-14-1001	1.0 L
T2061-14-4001	4.0 L

# Triethylamine



## BIO Grade



- Formula:  $(C_2H_5)_3N$
- F.W.: 101.19
- CAS: 121-44-8

### Physical Data:

- Density (g/ml, 25 °C): 0.73
- Boiling point (°C): 88.8
- Refractive index (25 °C): 1.4

## T6035-14 Triethylamine, Bio Grade

Assay (by GC) .....	min. 99.5 %
Color (APHA) .....	10
Water .....	0.1 %

HS-No: 2921 19 10

Code	Capacity
T6035-14-1001	1.0 L
T6045-14-4001	4.0 L

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY



## SOLVENT SPECIFICATIONS

SOLVENT NAME SYNONYMS

LC - MS

ULTIMATE

PESTICIDE

HPLC

BIO

**ULTRA DRY**

# DSP Ultra Dry

Item	Water (max. ppm)	Assay (min. %)	Residue aft. Evaporation (max. ppm)
Acetonitrile (w ater 10)	10	99.8	5
Acetonitrile (w ater 30)	30	99.8	5
Chloroform w /Ethanol	50	99.8	3
1,4-Dioxane	30	99.8	3
Ethyl Acetate	50	99.8	5
Ethyl Ether w /Ethanol	50	99.8	5
n-Hexane 95%	20	95.0	5
Methanol	50	99.8	3
Pyridine	50	99.8	5
Toluene	50	99.8	5

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY



## Acetonitrile (water 10)



### Ultra Dry Grade

- Formula: CH<sub>3</sub>CN
- F.W.: 41.05
- CAS: 75-05-8

### A1133-15 Acetonitrile (water 10), Ultra Dry Grade

HS-No: 2926 90 95 90

Assay (by GC) .....	min. 99.8 %
Color (APHA) .....	10
Water .....	10 ppm
Residue after Evaporation .....	5 ppm

Code	Capacity
A1133-15-1001	1.0 L
A1133-15-4001	4.0 L

## Acetonitrile (water 30)



### Ultra Dry Grade

- Formula: CH<sub>3</sub>CN
- F.W.: 41.05
- CAS: 75-05-8

### A1133-15 Acetonitrile (water 30), Ultra Dry Grade

HS-No: 2926 90 95 90

Assay (by GC) .....	min. 99.8 %
Color (APHA) .....	10
Water .....	30 ppm
Residue after Evaporation .....	5 ppm

Code	Capacity
A1133-15-1001	1.0 L
A1133-15-4001	4.0 L

## Chloroform (Stabilized with Ethanol)



### Ultra Dry Grade

- Formula: CHCl<sub>3</sub>
- F.W.: 119.38
- CAS: 67-66-3
- Stabilized with about 0.5 ~ 1.0 Ethanol

### C3058-15 Chloroform (Stabilized with Ethanol), Ultra Dry Grade

HS-No: 2903 13 00 00

Assay (by GC, Excluding preservative) ..	min. 99.8 %
Color (APHA) .....	10
Water .....	50 ppm
Residue after Evaporation .....	3 ppm

Code	Capacity
C3058-15-1001	1.0 L
C3058-15-4001	4.0 L

## 1,4-Dioxane



### Ultra Dry Grade

- Formula: (CH<sub>2</sub>)<sub>4</sub>O<sub>2</sub>
- F.W.: 88.11
- CAS: 123-91-1

### 1,4-Dioxane, Ultra Dry Grade

HS-No: 2932 99 85

Assay (by GC) .....	min. 99.8 %
Color (APHA) .....	10
Water .....	30 ppm
Residue after Evaporation .....	3 ppm
Peroxide (as H <sub>2</sub> O <sub>2</sub> , at the time of packaging) .....	0.003 %

Code	Capacity
D3090-14-1001	1.0 L
D3090-14-4001	4.0 L

**Ethyl Acetate****Ultra Dry Grade**

- Formula:  $\text{CH}_3\text{COOC}_2\text{H}_5$
- F.W.: 88.11
- CAS: 141-78-6

**E7100-15 Ethyl acetate, Ultra Dry Grade**

HS-No: 2915 31 00 00

Assay (by GC) .....	min. 99.8 %
Color (APHA) .....	10
Water .....	50 ppm
Residue after Evaporation .....	5 ppm

Code	Capacity
E7100-15-1001	1.0 L
E7100-15-4001	4.0 L

**Ethyl Ether, Anhydrous (Stabilized with Ethanol)****Ultra Dry Grade**

- Formula:  $\text{C}_2\text{H}_5\text{OC}_2\text{H}_5$
- F.W.: 74.12
- CAS: 60-29-7
- Stabilized with about 1.5 ~ 2.5 Ethanol

**D3103-15 Ethyl Ether, Anhydrous (Stabilized with Ethanol), Ultra Dry Grade**

HS-No: 2909 11 00 00

Assay (by GC, Excluding preservative) ..	min. 99.8 %
Color (APHA) .....	10
Water .....	50 ppm
Residue after Evaporation .....	5 ppm
Peroxide (as $\text{H}_2\text{O}_2$ , at the time of packaging) .....	max. 1 %

Code	Capacity
D3103-15-1001	1.0 L
D3103-15-4001	4.0 L

**n-Hexane 95%****Ultra Dry Grade**

- Formula:  $\text{CH}_3(\text{CH}_2)_4\text{CH}_2$
- F.W.: 86.18
- CAS: 110-54-3

**N3057-15 n-Hexane, Ultra Dry Grade**

HS-No: 2901 10 90 00

Assay (by GC, n-Hexane) .....	min. 95.0 %
Total C6 Hydrocarbons .....	min. 99.5 %
Color (APHA) .....	10
Water .....	20 ppm
Residue after Evaporation .....	5 ppm

Code	Capacity
N3057-15-1001	1.0 L
N3057-15-4001	4.0 L

**Methanol****Ultra Dry Grade**

- Formula:  $\text{CH}_3\text{OH}$
- F.W.: 32.04
- CAS: 67-56-1

**M2097-15 Methanol, Ultra Dry Grade**

HS-No: 2905 11 00 00

Assay (by GC) .....	min. 99.8 %
Color (APHA) .....	10
Water .....	50 ppm
Residue after Evaporation .....	3 ppm

Code	Capacity
M2097-15-1001	1.0 L
M2097-15-4001	4.0 L

## Pyridine



### Ultra Dry Grade

- Formula:  $C_5H_5N$
- F.W.: 79.10
- CAS: 110-86-1

### P9005-15 Pyridine, Ultra Dry Grade

HS-No: 2837 20 00 00

Assay (by GC) .....	min. 99.8 %
Color (APHA) .....	10
Water .....	50 ppm
Residue after Evaporation .....	5 ppm

Code	Capacity
P9005-15-1001	1.0 L
P9005-15-4001	4.0 L

## Toluene



### Ultra Dry Grade

- Formula:  $C_6H_5CH_3$
- F.W.: 92.14
- CAS: 108-88-3

### T5031-15 Toluene, Ultra Dry Grade

HS-No: 2902 30 00 00

Assay (by GC) .....	min. 99.8 %
Color (APHA) .....	10
Water .....	50 ppm
Residue after Evaporation .....	5 ppm

Code	Capacity
T5031-15-1001	1.0 L
T5031-15-4001	4.0 L

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY



**Supplementary  
reference information**



# SUPPLEMENTARY REFERENCE INFORMATION

PHYSICAL PROPERTIES  
SOLVENT MISCIBILITY CHART  
TRANSPORT INFORMATION  
UNITS CONVERSION TABLES

## Physical properties

### Eluotropic Strength of Solvents on Various Sorbents

Solvent	$\epsilon^\circ$ (Alumina)	$\epsilon^\circ$ (SiO <sub>2</sub> )	$\epsilon^\circ$ (C <sub>18</sub> )
n-Pentane	0.00 <sup>1)</sup>	0.00 <sup>1)</sup>	-
n-Hexane	0.00 - 0.01	0.00 - 0.01	-
Isooctane	0.01	0.01	-
Cyclohexane	0.04	0.03	-
Toluene	0.20 - 0.30	0.22	-
Chlorobenzene	0.30 - 0.31	0.23	-
Benzene	0.32	0.25	-
Ethyl ether	0.38	0.38 - 0.43	-
Dichloromethane	0.36 - 0.42	0.30 - 0.42	-
Chloroform	0.36 - 0.40	0.26	-
1,2-Dichloroethane	0.44 - 0.49	-	-
Methyl ethyl ketone	0.51	-	-
acetone	0.56 - 0.58	0.47 - 0.53	8.8
1,4-Dioxane	0.56 - 0.61	0.49 - 0.51	11.7
Tetrahydrofuran	0.45 - 0.62	0.53	3.7
Methyl t-butyl ether	0.3 - 0.62	0.48	-
Ethyl acetate	0.58 - 0.62	0.38 - 0.48	-
Dimethyl sulfoxide	0.62 - 0.75	-	-
Acetonitrile	0.52 - 0.65	0.50 - 0.52	3.1
1-Butanol	0.70	-	-
Pyridine	0.71	-	-
1-Propanol	0.78 - 0.82	-	10.1
2-Propanol	0.78 - 0.82	0.60	8.3
Ethanol	0.88	-	3.1
Methanol	0.95	0.70 - 0.73	1.0 <sup>1)</sup>
Dimethylformamide	-	-	7.6

1) Defined value



# Physical properties

## Polarity Index ( $P^{\circ}$ )

Solvent	$P^{\circ}$	Solvent	$P^{\circ}$
n-Pentane	0.0	Acetic acid	6.2
n-Heptane	0.1	N,N-Dimethylformamide	6.4
n-Hexane	0.1	N,N-Dimethylacetamide	6.5
Isooctane	0.1	N-Methyl-2-Pyrrolidone	6.7
Petroleum Ether	0.1	Dimethyl Sulfoxide	7.2
Cyclohexane	0.2	Water	10.2
Toluene	2.4		
Methyl t-Butyl Ether	2.5		
Chlorobenzene	2.7		
Ethyl Ether	2.8		
Dichloromethane	3.1		
1,2-Dichloroethane	3.5		
1-Butanol	3.9		
2-Propanol	3.9		
n-Butyl acetate	4.0		
1-Propanol	4.0		
Tetrahydrofuran	4.0		
Chloroform	4.1		
Methyl Isobutyl Ketone	4.2		
Ethyl Acetate	4.4		
Methyl Ethyl Ketone	4.7		
1,4-Dioxane	4.8		
Acetone	5.1		
Methanol	5.1		
Pyridine	5.3		
Acetonitrile	5.8		

# Physical properties

## Viscosity (cP)

Solvent	cP (25 °C)	Solvent	cP (25 °C)
n-Pentane	0.22	o-Dichlorobenzene	1.32
Ethyl ether	0.24	N-Methyl-2-Pyrrolidone	1.65
Methyl t-butyl ether	0.28	1-Propanol	1.95
n-Hexane	0.3	N,N-Dimethylacetamide	1.956
Acetone	0.306	Dimethyl sulfoxide	1.987
Acetonitrile	0.369	2-Propanol	2.038
Methyl ethyl ketone	0.38	1-Butanol	2.544
n-Heptane	0.4		
Dichloromethane	0.413		
Ethyl acetate	0.423		
Tetrahydrofuran	0.456		
Isooctane	0.51 <sup>1)</sup>		
Chloroform	0.537		
Methanol	0.544		
Toluene	0.56		
Methyl Isobutyl ketone	0.58		
Benzene	0.604		
n-Butyl acetate	0.685		
1,2-Dichloroethane	0.779		
Dimethylformamide	0.794		
Pyridine	0.88		
Water	0.89		
Cyclohexane	0.894		
Ethanol	1.074		
Acetic acid	1.10		
1,4-Dioxane	1.177		

1) measured at 22 °C

# Physical properties

## Density

Solvent	Density (g/ml, 25 °C)	Solvent	Density (g/ml, 25 °C)
n-Pentane	0.621	Water	0.998 <sup>1)</sup>
n-Heptane	0.681	N-Methyl-2-Pyrrolidone	1.025
Petroleum Ether (35~36 °C)	0.64 <sup>1)</sup>	1,4-Dioxane	1.028
n-Hexane	0.656	Acetic acid, glacial	1.049
Isooctane	0.691 <sup>1)</sup>	Dimethyl Sulfoxide	1.096
Ethyl Ether	0.708	Chlorobenzene	1.107
Triethylamine	0.73 <sup>1)</sup>	1,2-Dichloroethane	1.245
Methyl t-butyl Ether	0.740 <sup>1)</sup>	o-Dichlorobenzene	1.3058 <sup>1)</sup>
Cyclohexane	0.773	Dichloromethane	1.318
Acetonitrile	0.779	Chloroform	1.480
2-Propanol	0.782		
Acetone	0.785		
Methanol	0.787		
Ethanol	0.787		
Methyl Ethyl Ketone	0.799		
Methyl Isobutyl Ketone	0.801 <sup>1)</sup>		
1-Propanol	0.802		
1-Butanol	0.806		
Toluene	0.864		
Benzene	0.872		
n-Butyl acetate	0.876		
Tetrahydrofuran	0.880		
Ethyl Acetate	0.894		
N,N-Dimethylacetamide	0.937		
N,N-dimethylformamide	0.944		
Pyridine	0.978		

1) measured at 20 °C

# Physical properties

## Solubility of water in solvent

Solvent	Solubility (% <sub>v/v</sub> , 20 °C)	Solvent	Solubility (% <sub>v/v</sub> , 20 °C)
Isooctane	0.006	1-Propanol	Miscible
n-Pentane	0.009	2-Propanol	Miscible
Cyclohexane	0.01	Pyridine	Miscible
n-Heptane	0.01 <sup>1)</sup>	Tetrahydrofuran	Miscible
n-Hexane	0.01		
Toluene	0.033 <sup>1)</sup>		
Chloroform	0.056		
Benzene	0.063 <sup>1)</sup>		
1,2-Dichloroethane	0.15		
Dichloromethane	0.24		
Ethyl Ether	1.26		
Methyl t-Butyl Ether	1.5		
n-Butyl acetate	1.86		
Ethyl Acetate	3.3		
Methyl Ethyl Ketone	10		
1-Butanol	20.07		
Acetic acid, glacial	Miscible <sup>2)</sup>		
Acetone	Miscible		
Acetonitrile	Miscible		
N,N-Dimethylacetamide	Miscible		
N,N-Dimethylformamide	Miscible		
Dimethyl Sulfoxide	Miscible		
1,4-Dioxane	Miscible		
Ethanol	Miscible		
Methanol	Miscible		
N-Methyl-2-Pyrrolidone	Miscible		

1) measured at 20 °C

2) Miscible : two components can be mixed together in all proportions without forming two separate phases

# Physical properties

## Refractive Index

Solvent	Refractive Index (25 °C)	Solvent	Refractive Index (25 °C)
Methanol	1.326	Chloroform	1.444
Water	1.333 <sup>1)</sup>	1,2-Dichloroethane	1.444
Acetonitrile	1.342	N-Methyl-2-Pyrrolidone	1.469
Ethyl Ether	1.352	Dimethyl Sulfoxide	1.476
n-Pentane	1.355	Toluene	1.494
Acetone	1.357	Benzene	1.498
Ethanol	1.359	Pyridine	1.507
Petroleum Ether (35~60 °C)	1.365	Chlorobenzene	1.525 <sup>1)</sup>
Methyl t-Butyl Ether	1.366	o-Dichlorobenzene	1.5514 <sup>1)</sup>
Acetic acid, glacial	1.370 <sup>1)</sup>		
Ethyl Acetate	1.370		
n-Hexane	1.372		
2-Propanol	1.375		
Methyl Ethyl Ketone	1.377		
1-Propanol	1.383		
n-Heptane	1.385		
Isooctane	1.389		
n-Butyl acetate	1.392		
Methyl Isobutyl Ketone	1.3957 <sup>1)</sup>		
1-Butanol	1.397		
Tetrahydrofuran	1.404		
1,4-Dioxane	1.420		
Dichloromethane	1.421		
Cyclohexane	1.424		
N,N-Dimethylformamide	1.427		
N,N-Dimethylacetamide	1.4384 <sup>1)</sup>		

1) measured at 20 °C

# Physical properties

## Boiling point

Solvent	Boiling point (°C)	Solvent	Boiling point (°C)
Ethyl Ether	34	Methyl Isobutyl Ketone	117~118
n-Pentane	36	1-Butanol	118
Dichloromethane	40	n-Butyl acetate	126
Methyl t-Butyl Ether	55	Chlorobenzene	132
Acetone	56	N,N-Dimethylformamide	153
Petroleum Ether (35~60 °C)	35~60	N,N-Dimethylacetamide	165~166
Chloroform	61	o-Dichlorobenzene	180.5
Methanol	65	Dimethyl Sulfoxide	189
Tetrahydrofuran	65	N-Methyl-2-Pyrrolidone	202
n-Hexane	69		
Ethyl Acetate	77		
Ethanol	78		
Benzene	80		
Methyl Ethyl Ketone	80		
Cyclohexane	81		
Acetonitrile	82		
2-Propanol	82		
1,2-Dichloroethane	84		
1-Propanol	97		
n-Heptane	98		
Isooctane	99		
Water	100		
1,4-Dioxane	101		
Toluene	111		
Pyridine	115		
Acetic acid, glacial	117		

# Physical properties

## Freezing point

Solvent	Freezing point (°C)	Solvent	Freezing point (°C)
n-Pentane	-129.7	o-Dichlorobenzene	-17.0
1-Propanol	-126.2	Water	0
Ethyl Ether	-117.4	Cyclohexane	6.5
Ethanol	-114.1	1,4-Dioxane	11.8
Methyl t-Butyl Ether	-108.6	Dimethyl Sulfoxide	18.5
Tetrahydrofuran	-108.5		
Isooctane	-107.4		
Methanol	-97.7		
n-Hexane	-95.3		
Dichloromethane	-95.1		
Toluene	-95.0		
Acetone	-94.7		
n-Heptane	-90.6		
1-Butanol	-88.6		
2-Propanol	-88.0		
Methyl Ethyl Ketone	-86.7		
Methyl Isobutyl Ketone	-84		
Ethyl Acetate	-84.0		
n-Butyl acetate	-73.5		
Chloroform	-63.5		
N,N-Dimethylformamide	-60.4		
Chlorobenzene	-45.6		
Acetonitrile	-43.8		
Pyridine	-41.5		
N-Methyl-2-Pyrrolidone	-24.4		
N,N-Dimethylacetamide	-20		

# Physical properties

## UV Cutoff

Solvent	UV Cutoff (nm)	Solvent	UV Cutoff (nm)
Acetonitrile	<190	Benzene	280
n-Pentane	190	N-Methyl-2-Pyrrolidone	285
Water	190	Toluene	286
n-Hexane	195	Chlorobenzene	288
n-Heptane	197	o-Dichlorobenzene	296
Cyclohexane	202	Methyl Ethyl Ketone	329
Ethanol	205	Acetone	330
Isooctane	205	Pyridine	330
Methanol	205	Methyl Isobutyl Ketone	334
2-Propanol	205		
Methyl t-Butyl Ether	210		
Petroleum Ether	210		
1-Propanol	210		
Tetrahydrofuran	210		
1-Butanol	215		
1,4-Dioxane	215		
Ethyl Ether	218		
1,2-Dichloroethane	226		
Dichloromethane	233		
Chloroform	245		
Acetic acid, glacial	254		
n-Butyl acetate	254		
Ethyl Acetate	255		
Dimethyl Sulfoxide	263		
N,N-Dimethylacetamide	270		
N,N-Dimethylformamide	270		





# Units Conversion Tables

## Units of Measure Conversion Factors

Percent	Parts per Million	Parts per Billion	Parts per Trillion
.001%=	10 ppm	-	-
.0001%=	1 ppm=	1,000 ppb=	1,000,000 ppt
.00001%=	0.1 ppm=	100 ppb=	100,000 ppt
.000001%=	0.01 ppm=	10 ppb=	10,000 ppt
-	0.001 ppm=	1 ppb=	1,000 ppt
-	0.0001 ppm=	0.1 ppb=	100 ppt
-	-	0.01 ppb=	10 ppt
-	-	0.001 ppb=	1 ppt

## Temperature Conversion Formulas

°C to °F	°F to °C
$(°C \times 9/5) + 32 = °F$	$(°F - 32) \times 5/9 = °C$

Prefix	Factor	Fraction
centi	10 <sup>-2</sup>	1/100 (part per hundred)
milli	10 <sup>-3</sup>	1/1,000 (part per thousand)
micro	10 <sup>-6</sup>	1/1,000,000 (ppm, part per million)
nano	10 <sup>-9</sup>	1/1,000,000,000 (ppb, part per billion)
pico	10 <sup>-12</sup>	1/1,000,000,000,000 (ppt, part per trillion)
femto	10 <sup>-15</sup>	1/1,000,000,000,000,000 (ppq, part per quadrillion)
atto	10 <sup>-18</sup>	1/1,000,000,000,000,000,000 (part per quintillion)

## Weight Conversion Table<sup>1</sup>

From/To	g	kg	metric ton	grain	oz	lb
g	1	0.001	1x10 <sup>-6</sup>	15.43	0.03527	0.0022
kg	1000	1	0.001	1.54x10 <sup>4</sup>	35.27	2.205
metric ton	1x10 <sup>6</sup>	1000	1	1.54x10 <sup>7</sup>	3.53x10 <sup>4</sup>	2205
grain	6.48x10 <sup>-2</sup>	6.48x10 <sup>-5</sup>	6.48x10 <sup>-3</sup>	1	2.29x10 <sup>-3</sup>	1.43x10 <sup>-4</sup>
oz	28.35	0.02835	2.83x10 <sup>-5</sup>	437.5	1	0.0625
lb	453.6	0.4536	4.54x10 <sup>4</sup>	7000	16	1

1. To convert from a unit shown in the left column, multiply by the factor listed in the column for the desired unit.

## Weight Conversion Table<sup>1</sup> (metric and U.S. liquid measures)

From/To	cm <sup>3</sup>	liter	m <sup>3</sup>	in <sup>3</sup>	ft <sup>3</sup>	yd <sup>3</sup>	fl oz	fl pt	fl qt	gal
cm <sup>3</sup>	1	0.001	1x10 <sup>-6</sup>	0.06102	3.53x10 <sup>-4</sup>	1.31x10 <sup>-6</sup>	0.03381	0.00211	0.00106	2.64x10 <sup>-4</sup>
liter	1000	1	0.001	61.02	0.03532	0.00131	33.81	2.113	1.057	0.2642
m <sup>3</sup>	1x10 <sup>6</sup>	1000	1	6.10x10 <sup>4</sup>	35.31	1.308	3.38x10 <sup>4</sup>	2113	1057	264.2
in <sup>3</sup>	16.39	0.01639	1.64x10 <sup>-5</sup>	1	5.79x10 <sup>-4</sup>	2.14x10 <sup>-5</sup>	0.5541	0.03463	0.01732	0.00433
ft <sup>3</sup>	2.83x10 <sup>4</sup>	28.32	0.02832	1728	1	0.03704	957.5	69.84	29.92	7.481
yd <sup>3</sup>	7.65x10 <sup>5</sup>	764.5	0.7646	4.67x10 <sup>4</sup>	27	1	2.59x10 <sup>4</sup>	1616	807.9	202
fl oz	29.57	0.02957	2.96x10 <sup>-5</sup>	1.805	0.00104	3.87x10 <sup>-5</sup>	1	0.0625	0.03125	0.00781
fl pt	473.2	0.4732	473x10 <sup>-4</sup>	28.88	0.01671	619x10 <sup>-4</sup>	16	1	0.6	0.125
fl qt	946.4	0.9463	9.46x10 <sup>-4</sup>	57.75	0.03342	0.00124	32	2	1	0.25
gal	3785	3.786	0.00379	231	0.1337	0.00495	128	8	4	1

1. To convert from a unit shown in the left column, multiply by the factor listed in the column for the desired unit.

## Length Conversion Table<sup>1</sup>

From/To	cm	m	km	in	ft	mile
cm	1	0.01	1x10 <sup>-5</sup>	0.3937	0.03281	6.214x10 <sup>-6</sup>
m	100	1	0.001	39.37	3.281	6.214x10 <sup>-4</sup>
km	1x10 <sup>5</sup>	1000	1	3.94x10 <sup>4</sup>	3281	0.6214
in	2.54	0.02540	2.540x10 <sup>-5</sup>	1	0.08333	1.578x10 <sup>-5</sup>
ft	30.48	0.3048	3.048x10 <sup>-4</sup>	12	1	18.94x10 <sup>-4</sup>
mile	1.609x10 <sup>5</sup>	1609	1.609	6.336x10 <sup>4</sup>	5280	1

1. To convert from a unit shown in the left column, multiply by the factor listed in the column for the desired unit.





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