

Safety Data Sheet

according to Regulation (EC) No 1907/2006

425-32 Hardness 2 Solution

Revision date: 23.04.2018

Product code: 42532

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

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1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

Water analysis

1.3. Details of the supplier of the safety data sheet

Company name: HACH LANGE GmbH
Street: Willstätterstr. 11
Place: D-40549 Düsseldorf
Telephone: +49 (0)211 5288-383
e-mail: SDS@hach.com
Internet: www.de.hach.com
Responsible Department: HACH LANGE Ltd.
5, Pacific Way
Salford Manchester M50 1DL - United Kingdom
Tel. +44 (0) 161 872 1487 * Fax +44 (0) 161 848 7324
e-Mail: info-uk@hach.com

HACH LANGE Ltd.
Unit 1, Chestnut Road Western Industrial Estate
IRL-Dublin 12
Tel. +353 (0)1 4602522
e-Mail: info-ie@hach.com

1.4. Emergency telephone number:

Poison Control Center Mainz: Tel: +49 (0) 6131 19240 - 24 hour emergency service -

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Substance or mixture corrosive to metals: Met. Corr. 1

Flammable liquid: Flam. Liq. 3

Skin corrosion/irritation: Skin Corr. 1

Serious eye damage/eye irritation: Eye Dam. 1

Respiratory or skin sensitisation: Skin Sens. 1

Carcinogenicity: Carc. 2

Specific target organ toxicity - repeated exposure: STOT RE 2

Hazard Statements:

May be corrosive to metals.

Flammable liquid and vapour.

Causes severe skin burns and eye damage.

Causes serious eye damage.

May cause an allergic skin reaction.

Suspected of causing cancer.

May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements**Regulation (EC) No. 1272/2008**

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Hazard components for labelling

hydroxylammonium chloride; hydroxylamine hydrochloride
propan-2-ol; isopropyl alcohol; isopropanol

Signal word: Danger

Pictograms:



Hazard statements

| | |
|------|--|
| H226 | Flammable liquid and vapour. |
| H290 | May be corrosive to metals. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |
| H351 | Suspected of causing cancer. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

Precautionary statements

| | |
|----------------|--|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P243 | Take action to prevent static discharges. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. |
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P310 | Immediately call a POISON CENTER/doctor. |

Additional advice on labelling

The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008.

2.3. Other hazards

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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Hazardous components

| CAS No | Chemical name | | | Quantity |
|-----------|---|--------------|----------|----------|
| | EC No | Index No | REACH No | |
| | Classification according to Regulation (EC) No. 1272/2008 [CLP] | | | |
| 57-55-6 | 1,2-Propanediol | | | 90-100 % |
| | 200-338-0 | | | |
| 5470-11-1 | hydroxylammonium chloride; hydroxylamine hydrochloride | | | 1-10 % |
| | 226-798-2 | 612-123-00-2 | | |
| | Met. Corr. 1, Carc. 2, Acute Tox. 4, Acute Tox. 4, STOT RE 2, Eye Irrit. 2, Skin Irrit. 2, Skin Sens. 1, Aquatic Acute 1; H290 H351 H312 H302 H373 ** H319 H315 H317 H400 | | | |
| 67-63-0 | propan-2-ol; isopropyl alcohol; isopropanol | | | < 5 % |
| | 200-661-7 | 603-117-00-0 | | |
| | Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 | | | |
| 3147-14-6 | Calmagite | | | < 1 % |
| | 221-563-0 | | | |
| | Skin Irrit. 2, Eye Irrit. 2, STOT SE 3; H315 H319 H335 | | | |

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Take off all contaminated clothing immediately. Show this safety data sheet to the doctor in attendance.

After inhalation

Move to fresh air. Consult a physician for severe cases.

After contact with skin

Wash off with soap and water. If skin irritation persists, call a physician.

After contact with eyes

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Show this safety data sheet to the doctor in attendance.

After ingestion

Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Show this safety data sheet to the doctor in attendance.

Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Irritation and corrosion. May produce an allergic reaction. Can be absorbed through skin.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water, Dry powder, Carbon dioxide (CO₂), Alcohol-resistant foam

Unsuitable extinguishing media

No Limit

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5.2. Special hazards arising from the substance or mixture

Fire may liberate hazardous vapours.
Carbon monoxide, Carbon dioxide (CO₂), Acid chlorides

5.3. Advice for firefighters

In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit.

Additional information

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Only qualified personnel equipped with suitable protective equipment may intervene. Immediately evacuate personnel to safe areas.
Do not breathe vapours, mist or gas.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local/national regulations (see section 13).

6.4. Reference to other sections

13. Disposal considerations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid contact with skin and eyes. Use only in well-ventilated areas. Do not breathe vapours or spray mist.

Advice on protection against fire and explosion

None known.
See also section 5 Observe label precautions.

Further information on handling

Observe label precautions.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep away from open flames, hot surfaces and sources of ignition.

Hints on joint storage

Incompatible with oxidizing agents.

7.3. Specific end use(s)

Reagent for analysis

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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Exposure limits (EH40)

| CAS No | Substance | ppm | mg/m ³ | fibres/ml | Category | Origin |
|---------|--------------------------------|-----|-------------------|-----------|---------------|--------|
| 67-63-0 | Propan-2-ol | 400 | 999 | | TWA (8 h) | WEL |
| | | 500 | 1250 | | STEL (15 min) | WEL |
| 57-55-6 | Propane-1,2-diol, particulates | - | 10 | | TWA (8 h) | WEL |

Additional advice on limit values

None known.

8.2. Exposure controls

Appropriate engineering controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Protective and hygiene measures

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Wash hands before breaks and after work.

General industrial hygiene practice.

Eye/face protection

Safety glasses with side-shields

Hand protection

Use barrier skin cream.

Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374. In full contact:

Gloves material: Viton, Layer thickness: 0.70 mm, Breakthrough time: >480 min. In splash contact: Glove

material: nitrile rubber, Layer thickness 0,20 mm, Breakthrough time: > 30 min

Consult your supplier if the material is to be used for special applications such as in the food industry or for hygiene, medical or surgical end-use.

Skin protection

Avoid contact with skin, eyes and clothing.

Respiratory protection

Provide adequate ventilation.

Avoid breathing dust or vapour.

Breathing apparatus needed only when aerosol or mist is formed.

Recommended Filter type: ABEK-filter

Environmental exposure controls

Do not flush into surface water or sanitary sewer system.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|----------------------|----------------------|
| Physical state: | liquid |
| Colour: | dark red |
| Odour: | pleasant, like fruit |
| pH-Value (at 20 °C): | 1,09 |

Changes in the physical state

| | |
|--|-------------------|
| Melting point: | not applicable |
| Initial boiling point and boiling range: | 118 °C |
| Sublimation point: | not applicable |
| Softening point: | not applicable |
| Pour point: | no data available |

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| | |
|-------------------------------------|------------------------|
| : | no data available |
| Flash point: | 25,7 °C |
| Flammability | |
| Solid: | no data available |
| Gas: | no data available |
| Explosive properties | |
| not applicable | |
| Lower explosion limits: | no data available |
| Upper explosion limits: | no data available |
| Ignition temperature: | no data available |
| Auto-ignition temperature | |
| Solid: | no data available |
| Gas: | no data available |
| Decomposition temperature: | no data available |
| Oxidizing properties | |
| no data available | |
| Vapour pressure: | no data available |
| Density (at 20 °C): | 1,01 g/cm ³ |
| Bulk density: | not applicable |
| Water solubility: (at 20 °C) | soluble |
| Solubility in other solvents | |
| no data available | |
| Partition coefficient: | no data available |
| Viscosity / dynamic: | no data available |
| Viscosity / kinematic: | no data available |
| Flow time: | no data available |
| Vapour density: | no data available |
| Evaporation rate: | no data available |
| Solvent separation test: | no data available |
| Solvent content: | no data available |

9.2. Other information

| | |
|---|-------------------|
| Solid content: | no data available |
| May be corrosive to metals. Aluminium 0,001 in/yr Mild steel: 0,288 in/yr | |

SECTION 10: Stability and reactivity**10.1. Reactivity**

May be corrosive to metals.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Reacts with the following substances: Oxidizing agents

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10.4. Conditions to avoid

Heat, flames and sparks. To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Carbon monoxide, Carbon dioxide (CO₂), Acid chlorides

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicokinetics, metabolism and distribution

No toxicology information is available.

Acute toxicity

No data is available on the product itself.

| CAS No | Chemical name | | | | |
|-----------|--|---------------------|---------|----------------------|--------|
| | Exposure route | Dose | Species | Source | Method |
| 57-55-6 | 1,2-Propanediol | | | | |
| | oral | LD50 mg/kg 20000 | rat | Toxicology and Appli | |
| | dermal | LD50 mg/kg 20800 | rabbit | Raw Material Data Ha | |
| 5470-11-1 | hydroxylammonium chloride; hydroxylamine hydrochloride | | | | |
| | oral | LD50 mg/kg 141 | rat | | |
| | dermal | ATE mg/kg 1100 | | | |
| 67-63-0 | propan-2-ol; isopropyl alcohol; isopropanol | | | | |
| | oral | LD50 mg/kg 5045 | rat | RTECS | |
| | dermal | LD50 mg/kg 12800 | rabbit | | |
| | inhalation (4 h) vapour | LC50 46,5 mg/l | rat | | |

Irritation and corrosivity

Causes skin and eye burns.

Sensitising effects

May cause allergic skin reaction.

Carcinogenic/mutagenic/toxic effects for reproduction

H351 - Suspected of causing cancer.

STOT-single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure

H373 - May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

No aspiration toxicity classification

Specific effects in experiment on an animal

No toxicology information is available.

Additional information on tests

None known.

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Further information

Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information
12.1. Toxicity

No data is available on the product itself.

| CAS No | Chemical name | | | | | |
|-----------|--|---------------|-----------|---------|---|---|
| | Aquatic toxicity | Dose | [h] [d] | Species | Source | Method |
| 57-55-6 | 1,2-Propanediol | | | | | |
| | Acute fish toxicity | LC50 mg/l | 51600 | 96 h | Oncorhynchus mykiss (rainbow trout) | OECD 203 |
| | Acute crustacea toxicity | EC50 mg/l | 34400 | 48 h | Daphnia magna (Water flea) | Information taken from reference works and the literature. |
| 5470-11-1 | hydroxylammonium chloride; hydroxylamine hydrochloride | | | | | |
| | Acute fish toxicity | LC50 mg/l | 1-10 | 96 h | Leuciscus idus (Golden orfe) | |
| 67-63-0 | propan-2-ol; isopropyl alcohol; isopropanol | | | | | |
| | Acute fish toxicity | LC50 mg/l | 1400 | 96 h | Lepomis macrochirus (Bluegill sunfish) | |
| | Acute algae toxicity | ErC50 mg/l | > 1000 | 72 h | Pseudokirchneriella subcapitata (green algae) | IUCLID |
| | Acute crustacea toxicity | EC50 mg/l | 13299 | 48 h | Daphnia magna (Water flea) | UICLID |

12.2. Persistence and degradability

No data is available on the product itself.

12.3. Bioaccumulative potential

No data is available on the product itself.

Partition coefficient n-octanol/water

| CAS No | Chemical name | Log Pow |
|---------|-----------------|---------|
| 57-55-6 | 1,2-Propanediol | -0,92 |

12.4. Mobility in soil

No data is available on the product itself.

12.5. Results of PBT and vPvB assessment

No data is available on the product itself.

12.6. Other adverse effects

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations
13.1. Waste treatment methods
Advice on disposal

In accordance with local and national regulations.

Waste disposal number of waste from residues/unused products

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160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

Waste disposal number of used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

Waste disposal number of contaminated packaging

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 2924
14.2. UN proper shipping name: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (<10% propan-2-ol; isopropyl alcohol; isopropanol, hydroxylammonium chloride; hydroxylamine hydrochloride)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3+8



Classification code: FC
Special Provisions: 274
Limited quantity: 5 L
Excepted quantity: E1
Transport category: 3
Hazard No: 38
Tunnel restriction code: D/E

Inland waterways transport (ADN)**Other applicable information (inland waterways transport)**

Not tested

Marine transport (IMDG)

14.1. UN number: UN 2924
14.2. UN proper shipping name: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (10% Isopropanol-/hydroxylamine hydrochloride solution)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3+8



Marine pollutant: --
Special Provisions: 223, 274
Limited quantity: 5 L

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Excepted quantity: E1
EmS: F-E, S-C

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 2924
14.2. UN proper shipping name: FLAMMABLE LIQUID, CORROSIVE, N.O.S.(10% Isopropanol-/hydroxylamine hydrochloride solution)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3+8



Special Provisions: A3 A803
Limited quantity Passenger: 1 L
Passenger LQ: Y342
Excepted quantity: E1
IATA-packing instructions - Passenger: 354
IATA-max. quantity - Passenger: 5 L
IATA-packing instructions - Cargo: 365
IATA-max. quantity - Cargo: 60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: yes



Danger releasing substance: hydroxylammonium chloride; hydroxylamine hydrochloride

14.6. Special precautions for user

no data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant

Other applicable information

Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit, Hazard Class: 9, UN Number 3316, Package group II, EMS Code: F-A, S-P
These transport data apply to the entire pack

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulatory information**

Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water contaminating class (D): 2 - clearly water contaminating

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Changes**

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Revision: 23.04.2018

Safety datasheet sections which have been updated: 8, 11, 15, 16

Revision: 16.03.2017

Safety datasheet sections which have been updated: 2, 4, 11

Revision: 27.05.2015

Safety datasheet sections which have been updated: 2, 4, 11

Revision: 06.11.2013

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

| Classification | Classification procedure |
|--------------------|--------------------------|
| Met. Corr. 1; H290 | On basis of test data |
| Flam. Liq. 3; H226 | On basis of test data |
| Skin Corr. 1; H314 | On basis of test data |
| Eye Dam. 1; H318 | On basis of test data |
| Skin Sens. 1; H317 | Calculation method |
| Carc. 2; H351 | Calculation method |
| STOT RE 2; H373 | Calculation method |

Relevant H and EUH statements (number and full text)

| | |
|------|--|
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H290 | May be corrosive to metals. |
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |
| H351 | Suspected of causing cancer. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |

Further Information

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)