

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**1043-99 Chloride 2 Indicator**

Revision date: 24.04.2019

Product code: 104399

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

1043-99 Chloride 2 Indicator

**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:

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Respiratory or skin sensitisation: Skin Sens. 1

Germ cell mutagenicity: Muta. 1B

Carcinogenicity: Carc. 1B

Specific target organ toxicity - single exposure: STOT SE 3

Hazardous to the aquatic environment: Aquatic Acute 1

Hazardous to the aquatic environment: Aquatic Chronic 1

Hazard Statements:

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

May cause genetic defects.

May cause cancer by inhalation.

May cause respiratory irritation.

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

**2.2. Label elements**

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#### Regulation (EC) No. 1272/2008

##### Hazard components for labelling

potassium chromate

**Signal word:** Danger

##### Pictograms:



##### Hazard statements

H302 Harmful if swallowed.  
 H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H319 Causes serious eye irritation.  
 H335 May cause respiratory irritation.  
 H340 May cause genetic defects.  
 H350i May cause cancer by inhalation.  
 H410 Very toxic to aquatic life with long lasting effects.

##### Precautionary statements

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.  
 P337+P313 If eye irritation persists: Get medical advice/attention.  
 P302+P352 IF ON SKIN: Wash with plenty of water.  
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
 P308+P313 IF exposed or concerned: Get medical advice/attention.  
 P391 Collect spillage.

##### Special labelling of certain mixtures

Restricted to professional users.

##### 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

##### Hazardous components

CAS No	Chemical name	Quantity
	EC No	
	Index No	
	REACH No	
	GHS Classification	
144-55-8	Sodium hydrogen carbonate	45-55 %
	205-633-8	
7789-00-6	potassium chromate	45-55 %
	232-140-5	
	024-006-00-8	
	Carc. 1B, Muta. 1B, Acute Tox. 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, STOT SE 3, Aquatic Acute 1, Aquatic Chronic 1; H350i H340 H301 H315 H319 H317 H335 H400 H410	

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

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#### Further Information

This product contains substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).  
potassium chromate

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

##### General information

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

##### After inhalation

Move to fresh air.  
Consult a physician. Show this safety data sheet to the doctor in attendance.

##### After contact with skin

Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Call a physician immediately. Show this safety data sheet to the doctor in attendance.

##### 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.  
Consult a physician. Show this safety data sheet to the doctor in attendance.

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

irritant effects

#### 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. The product itself does not burn.

#### 5.2. Special hazards arising from the substance or mixture

Fire may liberate hazardous vapours.

#### 5.3. Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

#### Additional information

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.

#### 6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

#### 6.3. Methods and material for containment and cleaning up

Use mechanical handling equipment. Treat recovered material as described in the section "Disposal considerations".

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**6.4. Reference to other sections**

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

Use only in well-ventilated areas. Do not breathe vapours/dust.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep tightly closed in a dry, cool and well-ventilated place. Protect against light. Accessible only for authorized persons.

**7.3. Specific end use(s)**

Reagent for analysis

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
-	Chromium (VI) compounds (as Cr)	-	0.05		TWA (8 h)	WEL

**Biological Monitoring Guidance Values (EH40)**

CAS No	Substance	Parameter	Value	Test material	Sampling time
	Chromium VI	chromium (creatinine)	10 µmol/mol	urine	Post shift

**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.

**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 0.40 mm, Breakthrough time: > 30 min

**Skin protection**

Remove and wash contaminated clothing before re-use.

**Respiratory protection**

Breathing apparatus only if aerosol or dust is formed.

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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:	solid, powder
Colour:	light yellow
Odour:	odourless
pH-Value (at 20 °C):	8,2 (5 % solution)

**Changes in the physical state**

Melting point:	not applicable
Sublimation point:	not applicable
Softening point:	not applicable
Pour point:	not applicable
Decomposition temperature:	100 °C
Flash point:	not applicable

**Flammability**

Solid:	not applicable
Gas:	not applicable

**Explosive properties**

not applicable

Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Ignition temperature:	not applicable

**Auto-ignition temperature**

Solid:	not applicable
Gas:	not applicable

Decomposition temperature: no data available

**Oxidizing properties**

no data available

Vapour pressure:	no data available
Vapour pressure:	no data available
Density (at 20 °C):	2,25 g/cm <sup>3</sup>
Bulk density:	not applicable
Water solubility: (at 20 °C)	completely 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

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Solvent separation test: no data available

Solvent content: no data available

#### 9.2. Other information

Solid content: not applicable

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Corrosive to metals

#### 10.2. Chemical stability

Stable under recommended storage conditions.

#### 10.3. Possibility of hazardous reactions

Hazardous polymerisation does not occur.

#### 10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

#### 10.5. Incompatible materials

Organic materials,

#### 10.6. Hazardous decomposition products

Chromium oxides

#### Further information

very reactive

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

##### Acute toxicity

Harmful if swallowed.

No data is available on the product itself. Information given is based on data on the components and the toxicology of similar products.

##### ATEmix calculated

ATE (oral) 360,0 mg/kg

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
144-55-8	Sodium hydrogen carbonate				
	oral	LD50 mg/kg	4220	rat	
7789-00-6	potassium chromate				
	oral	LD50 mg/kg	180	mouse	

##### Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

##### Sensitising effects

May cause an allergic skin reaction. (potassium chromate)

##### Carcinogenic/mutagenic/toxic effects for reproduction

May cause genetic defects. (potassium chromate)

May cause cancer by inhalation. (potassium chromate)

Reproductive toxicity: Based on available data, the classification criteria are not met.

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**STOT-single exposure**

May cause respiratory irritation. (potassium chromate)

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Specific effects in experiment on an animal**

No toxicology information is available.

**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**

May cause long-term adverse effects in the aquatic environment.  
Do not flush into surface water or sanitary sewer system.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
144-55-8	Sodium hydrogen carbonate					
	Acute fish toxicity	LC50 mg/l	7550	96 h		
	Acute crustacea toxicity	EC50 mg/l	2350	48 h		
7789-00-6	potassium chromate					
	Acute fish toxicity	LC50 mg/l	45,6	96 h	Pimephales promelas	
	Acute crustacea toxicity	EC50 mg/l	0,18	48 h	Daphnia pulex	

**12.2. Persistence and degradability**

No data is available on the product itself.

**12.3. Bioaccumulative potential**

no data available

**12.4. Mobility in soil**

no data available

**12.5. Results of PBT and vPvB assessment**

no data available

**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**

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

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#### 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

### SECTION 14: Transport information

#### Land transport (ADR/RID)

**14.1. UN number:** UN 3288  
**14.2. UN proper shipping name:** Toxic solid, inorganic, n.o.s.  
**14.3. Transport hazard class(es):** 6.1  
**14.4. Packing group:** III

#### Inland waterways transport (ADN)

**Other applicable information (inland waterways transport)**  
Not tested

#### Marine transport (IMDG)

**14.1. UN number:** UN 3288  
**14.2. UN proper shipping name:** Toxic solid, inorganic, n.o.s. (Potassium chromate mixture)  
**14.3. Transport hazard class(es):** 6.1  
**14.4. Packing group:** III  
Marine pollutant: --  
EmS: F-A,S-A

#### Air transport (ICAO-TI/IATA-DGR)

**14.1. UN number:** UN 3288  
**14.2. UN proper shipping name:** Toxic solid, inorganic, n.o.s. (Potassium chromate mixture)  
**14.3. Transport hazard class(es):** 6.1  
**14.4. Packing group:** III

#### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: yes



#### 14.6. Special precautions for user

Use personal protective equipment.

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

not applicable

#### 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

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

##### EU regulatory information

Authorisations (REACH, annex XIV):  
potassium chromate



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Restrictions on use (REACH, annex XVII):

Entry 28: potassium chromate

**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):

3 - highly water contaminating

**Additional information**

professional use

**15.2. Chemical safety assessment**

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

**SECTION 16: Other information****Changes**

Revision: 24.04.2019

Safety datasheet sections which have been updated: 11, 15

Revision: 4.09.2017

Safety datasheet sections which have been updated: 2, 4

Revision: 08.06.2016

Safety datasheet sections which have been updated: 2, 3, 8, 9, 11

Revision: 11.04.2016

Safety datasheet sections which have been updated: 3

Revision: 26.05.2015

Safety datasheet sections which have been updated: 2, 11

**Relevant H and EUH statements (number and full text)**

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H340	May cause genetic defects.
H350i	May cause cancer by inhalation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**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.)*

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### 2349432 Chloride Titrant

Revision date: 27.09.2017

Product code: 2349432

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

2349432 Chloride Titrant

### 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  
Skin corrosion/irritation: Skin Corr. 1B  
Serious eye damage/eye irritation: Eye Dam. 1  
Specific target organ toxicity - single exposure: STOT SE 3  
Specific target organ toxicity - repeated exposure: STOT RE 1  
Hazardous to the aquatic environment: Aquatic Acute 1  
Hazardous to the aquatic environment: Aquatic Chronic 1  
Hazard Statements:  
May be corrosive to metals.  
Causes severe skin burns and eye damage.  
Causes serious eye damage.  
May cause respiratory irritation.  
Causes damage to organs through prolonged or repeated exposure.  
Very toxic to aquatic life.  
Very toxic to aquatic life with long lasting effects.

### 2.2. Label elements

#### Regulation (EC) No. 1272/2008

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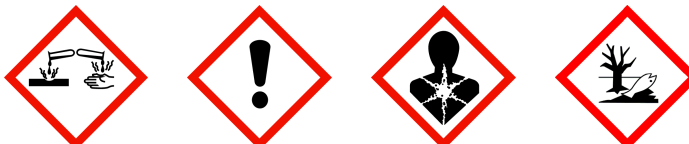
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**Hazard components for labelling**

silver nitrate

propan-2-ol; isopropyl alcohol; isopropanol

**Signal word:** Danger

**Pictograms:**

**Hazard statements**

H290 May be corrosive to metals.  
 H314 Causes severe skin burns and eye damage.  
 H335 May cause respiratory irritation.  
 H372 Causes damage to organs through prolonged or repeated exposure.  
 H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
 P270 Do not eat, drink or smoke when using this product.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 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**

None known.

**SECTION 3: Composition/information on ingredients**
**3.2. Mixtures**
**Hazardous components**

CAS No	Chemical name	Quantity
	EC No	Index No
	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
7732-18-5	Water	60,0 - 70,0 %
	231-791-2	
7761-88-8	silver nitrate	25,0 - 35,0 %
	231-853-9	047-001-00-2
	Ox. Sol. 2, Acute Tox. 4, Skin Corr. 1B, STOT SE 3, STOT RE 1, Aquatic Acute 1 (M-Factor = 100), Aquatic Chronic 1 (M-Factor = 100); H272 H302 H314 H335 H372 H400 H410	
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol	1,0 - 10,0 %
	200-661-7	603-117-00-0
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336	

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

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#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

###### General information

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

###### After inhalation

Move to fresh air.  
If symptoms persist, call a physician.

###### After contact with skin

Wash off immediately with plenty of water for at least 15 minutes.  
If skin irritation persists, call a physician.

###### After contact with eyes

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

###### After ingestion

Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Obtain medical attention.

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

Irritation and corrosion

##### 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.

##### 5.2. Special hazards arising from the substance or mixture

Fire may liberate hazardous vapours.

##### 5.3. Advice for firefighters

In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.  
In the event of fire, wear self-contained breathing apparatus.

###### Additional information

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

#### SECTION 6: Accidental release measures

##### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.

##### 6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

##### 6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

##### 6.4. Reference to other sections

13. Disposal considerations

#### SECTION 7: Handling and storage

##### 7.1. Precautions for safe handling

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**Advice on safe handling**

Avoid contact with skin and eyes. Avoid breathing vapours, mist or gas.

**Advice on protection against fire and explosion**

Explosive when dry.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**Keep container tightly closed in a dry and well-ventilated place.  
Keep away from direct sunlight.**Hints on joint storage**

None known.

**7.3. Specific end use(s)**

Reagent for analysis

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
67-63-0	Propan-2-ol	400	999		TWA (8 h)	WEL
		500	1250		STEL (15 min)	WEL
-	Silver (soluble compounds as Ag)	-	0.01		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 at the end of workday.

**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: &gt;480 min. In splash contact: Glove material: nitrile rubber, Layer thickness 0,20 mm, Breakthrough time: &gt; 30 min

**Skin protection**

Avoid contact with skin, eyes and clothing.

**Respiratory protection**

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.

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**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state:	liquid
Colour:	colourless
Odour:	alcohol-like
pH-Value (at 20 °C):	4,0

**Changes in the physical state**

Melting point:	-9 °C
Initial boiling point and boiling range:	98 °C
Sublimation point:	not applicable
Softening point:	not applicable
Pour point:	not applicable
:	no data available
Flash point:	>99 °C
Sustaining combustion:	No data available

**Flammability**

Solid:	not applicable
Gas:	not applicable

**Explosive properties**

not applicable

Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Ignition temperature:	no data available

**Auto-ignition temperature**

Solid:	not applicable
Gas:	not applicable

Decomposition temperature:	no data available
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**Oxidizing properties**

not applicable

Vapour pressure:	no data available
Vapour pressure:	no data available
Density (at 20 °C):	1,252 g/cm <sup>3</sup>
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

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Solvent content: no data available

#### 9.2. Other information

Solid content: not applicable

Corrosive in contact with metals  
Aluminium : 9,9 mm/a

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

See also section 10.3

#### 10.2. Chemical stability

Stable under recommended storage conditions.

#### 10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

#### 10.4. Conditions to avoid

Extremes of temperature and direct sunlight.

#### 10.5. Incompatible materials

Organic materials, metal oxides  
Avoid contact with combustible material (paper, wool, oil).

#### 10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

##### Acute toxicity

Based on available data, the classification criteria are not met.  
No toxicology information is available.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7761-88-8	silver nitrate				
	oral	LD50 1173 mg/kg	rat	RTECS	
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol				
	oral	LD50 5045 mg/kg	rat	RTECS	
	dermal	LD50 12800 mg/kg	rabbit		
	inhalation (4 h) vapour	LC50 46,5 mg/l	rat		

##### Irritation and corrosivity

Causes severe skin burns and eye damage.  
No known effect.

##### Sensitising effects

Based on available data, the classification criteria are not met.

##### Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

##### STOT-single exposure

May cause respiratory irritation. (silver nitrate)

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**STOT-repeated exposure**

Causes damage to organs through prolonged or repeated exposure. (silver nitrate)

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Specific effects in experiment on an animal**

No data is available on the product itself.

**Additional information on tests**

no data available

**Practical experience**
**Observations relevant to classification**

no data available

**Other observations**

no data available

**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 information on ecology is available.

Do not flush into surface water or sanitary sewer system.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
7761-88-8	silver nitrate					
	Acute fish toxicity	LC50 mg/l	0,006	96 h	Oncorhynchus mykiss (rainbow trout)	
	Acute crustacea toxicity	EC50 mg/l	0,00156	48 h	Daphnia magna (Water flea)	
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)	IUCLID

**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.

**12.4. Mobility in soil**

no data available

**12.5. Results of PBT and vPvB assessment**

no data available

**12.6. Other adverse effects**

No known effect.

**Further information**

no data available



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**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**

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 1760  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, N.O.S. (Silver Nitrate Solution)  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** III  
Hazard label: 8



Classification code: C9  
Limited quantity: LQ7  
Hazard No: 80  
Tunnel restriction code: E

**Other applicable information (land transport)**

Special Provisions: 274  
Excepted Quantities: E1  
Transport Category:: 3

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

Not tested

**Marine transport (IMDG)**

**14.1. UN number:** UN 1760  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, N.O.S. (Silver nitrate solution)  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** III  
Hazard label: 8

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Limited quantity: 5 L  
EmS: F-A, S-B

**Other applicable information (marine transport)**

Special Provisions: 223, 274  
Excepted Quantities: E1

**Air transport (ICAO-TI/IATA-DGR)**

**14.1. UN number:** UN 1760  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, N.O.S. (Silver nitrate solution)  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** III  
Hazard label: 8



Limited quantity Passenger: 1 L  
IATA-packing instructions - Passenger: 818  
IATA-max. quantity - Passenger: 5 L  
IATA-packing instructions - Cargo: 820  
IATA-max. quantity - Cargo: 60 L

**Other applicable information (air transport)**

Excepted Quantities: E1  
Passenger-LQ: Y818  
Special Provisions: A3

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: no

**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 applicable

**Other applicable information**

no data available

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

Water contaminating class (D): 3 - highly water contaminating

**15.2. Chemical safety assessment**

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

**SECTION 16: Other information****Changes**

Revision: 27.09.2017  
Safety datasheet sections which have been updated: 2, 3, 11  
Revision: 20.06.2017

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Safety datasheet sections which have been updated: 2, 7, 8, 10

Revision: 7.07.2015

Safety datasheet sections which have been updated: 2, 4, 9, 11

**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
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method
STOT SE 3; H335	Calculation method
STOT RE 1; H372	Calculation method
Aquatic Acute 1; H400	Calculation method
Aquatic Chronic 1; H410	Calculation method

**Relevant H and EUH statements (number and full text)**

H225	Highly flammable liquid and vapour.
H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**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.)*

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### 27242 deionized Water

Revision date: 12.05.2017

Product code: 27242

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

27242 deionized Water

CAS No: 7732-18-5

EC No: 231-791-2

### 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 -

### Further Information

A registration number is not available for this substance because the substance or the use of this substance is exempt from registration pursuant to Article 2 of Regulation (EC) 1907/2006 (REACH), because the annual tonnage does not require registration or because registration is planned at a later date.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No. 1272/2008

This substance is not classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

### 2.2. Label elements

#### Additional advice on labelling

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

### 2.3. Other hazards

no data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Molecular weight: 18,02 g/mol

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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]			
7732-18-5	Water			100 %
	231-791-2			

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

**Further Information**

No dangerous ingredients according to Regulation (EC) No. 1907/2006

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

No hazards which require special first aid measures.

**After inhalation**

No hazards which require special first aid measures.

**After contact with skin**

No hazards which require special first aid measures.

**After contact with eyes**

No hazards which require special first aid measures.

**After ingestion**

No hazards which require special first aid measures.

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

No known effect.

**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.

The product itself does not burn.

**Unsuitable extinguishing media**

None known.

**5.2. Special hazards arising from the substance or mixture**

The product itself does not burn.

**5.3. Advice for firefighters**

None known.

**Additional information**

None known.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

No conditions to be specially mentioned.

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#### **6.2. Environmental precautions**

No special environmental precautions required.

#### **6.3. Methods and material for containment and cleaning up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Keep in suitable, closed containers for disposal.

#### **6.4. Reference to other sections**

13. Disposal considerations

### **SECTION 7: Handling and storage**

#### **7.1. Precautions for safe handling**

##### **Advice on safe handling**

Observe label precautions.

##### **Advice on protection against fire and explosion**

See also section 5

##### **Further information on handling**

Keep in a dry, cool place.

#### **7.2. Conditions for safe storage, including any incompatibilities**

##### **Requirements for storage rooms and vessels**

Keep container tightly closed in a dry and well-ventilated place.

##### **Hints on joint storage**

no data available

##### **Further information on storage conditions**

no data available

#### **7.3. Specific end use(s)**

Reagent for analysis

### **SECTION 8: Exposure controls/personal protection**

#### **8.1. Control parameters**

##### **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**

See also section 7.1

##### **Eye/face protection**

Not required

##### **Hand protection**

Not required

##### **Skin protection**

Not required

##### **Respiratory protection**

Not required

##### **Environmental exposure controls**

No special technical protective measures required.

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## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	colourless
Odour:	odourless
pH-Value (at 20 °C):	7

#### Changes in the physical state

Melting point:	0 °C
Initial boiling point and boiling range:	100 °C
Sublimation point:	no data available
Softening point:	no data available
Pour point:	no data available
:	no data available
Flash point:	not applicable
Sustaining combustion:	No data available

#### Flammability

Solid:	not applicable
Gas:	no data available

#### Explosive properties

no data available

Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Ignition temperature:	not applicable

#### Auto-ignition temperature

Solid:	not applicable
Gas:	not applicable

Decomposition temperature:	not applicable
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#### Oxidizing properties

no data available

Vapour pressure:	23 hPa
Vapour pressure:	no data available
Density (at 20 °C):	1 g/cm <sup>3</sup>
Bulk density:	no data available
Water solubility: (at 20 °C)	completely soluble

#### Solubility in other solvents

Acids soluble

Partition coefficient:	not applicable
Viscosity / dynamic: (at 20 °C)	0,952 mPa·s
Viscosity / kinematic:	no data available
Flow time:	no data available
Vapour density:	no data available
Evaporation rate:	no data available

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Solvent separation test: no data available  
Solvent content: no data available

**9.2. Other information**

Solid content: no data available  
no data available

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

See also section 10.3

**10.2. Chemical stability**

Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**

No dangerous reaction known under conditions of normal use.  
Hazardous polymerisation does not occur.

**10.4. Conditions to avoid**

None known.

**10.5. Incompatible materials**

None known.

**10.6. Hazardous decomposition products**

None known.

**Further information**

None known.

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Toxicokinetics, metabolism and distribution**

No toxicology information is available.

**Acute toxicity**

Based on available data, the classification criteria are not met.  
no data available

**Irritation and corrosivity**

Based on available data, the classification criteria are not met.  
No known effect.

**Sensitising effects**

Based on available data, the classification criteria are not met.  
Contains no substance or substances classified as sensitising.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.  
Contains no ingredient listed as a carcinogen

**STOT-single exposure**

Based on available data, the classification criteria are not met.  
The substance or mixture is not classified as specific target organ toxicant, single exposure.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.  
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.



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**Aspiration hazard**

Based on available data, the classification criteria are not met.

No aspiration toxicity classification

**Specific effects in experiment on an animal**

No toxicology information is available.

**Additional information on tests**

no data available

**Practical experience****Observations relevant to classification**

no data available

**Other observations**

no data available

**Further information**

no data available

## SECTION 12: Ecological information

**12.1. Toxicity**

No information on ecology is available.

No data is available on the product itself.

**12.2. Persistence and degradability**

No data is available on the product itself.

**12.3. Bioaccumulative potential**

not applicable

**12.4. Mobility in soil**

no data available

**12.5. Results of PBT and vPvB assessment**

no data available.

A Chemical Safety Assessment is not required for this substance.

**12.6. Other adverse effects**

None known.

**Further information**

no data available

## 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**

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

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#### Contaminated packaging

Dispose of as unused product.

### SECTION 14: Transport information

#### Land transport (ADR/RID)

##### Other applicable information (land transport)

Not classified as dangerous in the meaning of transport regulations.

#### Inland waterways transport (ADN)

##### Other applicable information (inland waterways transport)

Not tested

#### Marine transport (IMDG)

##### Other applicable information (marine transport)

Not classified as dangerous in the meaning of transport regulations.

#### Air transport (ICAO-TI/IATA-DGR)

##### Other applicable information (air transport)

Not classified as dangerous in the meaning of transport regulations.

#### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

#### 14.6. Special precautions for user

Not relevant

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

Not relevant

#### Other applicable information

no data available

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

##### National regulatory information

Water contaminating class (D): -- not water contaminating

#### 15.2. Chemical safety assessment

For this substance a chemical safety assessment is not required.

### SECTION 16: Other information

#### Changes

Revision: 12.05.2017

Safety datasheet sections which have been updated: 1-16

Revision: 11.11.2014

Safety datasheet sections which have been updated: 1-16

#### 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.