

**Safety Data Sheet**

according to UK REACH Regulation

**sera O2 Test, Reagenz 1**

Revision date: 05.09.2023

Product code: O2-R1

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

sera O2 Test, Reagenz 1

**EAN**

4001942049146

UFI: TRU6-2F2F-GSP7-WH39

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

Solution for monitoring water parameters in aquarium and tap water

The product is intended for consumer use.

The product is intended for professional use.

**1.3. Details of the supplier of the safety data sheet****Manufacturer**Company name: sera Werke Heimtierbedarf  
J. Ravnak GmbH & Co. KGStreet: Borsigstraße 49  
Place: D-52525 HeinsbergPost-office box: 1466  
D-52518 Heinsberg

Telephone: +49 (0)2452 91260

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e-mail: info@sera.de

Contact person: Dr. Matthias Dahm

e-mail: sds.info@sera.biz

Internet: www.sera.de

Responsible Department: Labor

**Supplier**Company name: sera GmbH  
Street: Borsigstr. 49

Place: D-52525 Heinsberg

Post-office box: 1466  
D-52518 Heinsberg

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Contact person: Dr. Matthias Dahm

e-mail: sds.info@sera.biz

Internet: www.sera.de

Responsible Department: Labor

**1.4. Emergency telephone number:**

+49 (0)2452 91260 (Only available during office hours.)

+49 (0)2452 9126555

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation**

Acute Tox. 4; H302

Eye Dam. 1; H318

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STOT RE 2; H373

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### GB CLP Regulation

##### Hazard components for labelling

manganous chloride tetrahydrate

Signal word: Danger

##### Pictograms:



##### Hazard statements

- H302 Harmful if swallowed.  
H318 Causes serious eye damage.  
H373 May cause damage to organs (brain) through prolonged or repeated exposure if inhaled.

##### Precautionary statements

- P101 If medical advice is needed, have product container or label at hand.  
P102 Keep out of reach of children.  
P280 Wear protective gloves and eye/face protection.  
P301+P312 IF SWALLOWED: Call a doctor if you feel unwell.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a doctor.

##### Additional advice on labelling

The product is classified and labelled according to EC directives or corresponding national laws.

### 2.3. Other hazards

No information available.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Chemical characterization

Product/Substance is inorganic. Aqueous solution.

#### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
13446-34-9	manganous chloride tetrahydrate			15 - < 20 %
	231-869-6		01-2119934899-15	
	Acute Tox. 3, Eye Dam. 1, STOT RE 2; H301 H318 H373			

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

#### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
13446-34-9	231-869-6	manganous chloride tetrahydrate	15 - < 20 %
	oral: LD50 = 250 mg/kg		

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**Further Information**

Contains no further substance with acute toxicity.

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

Remove contaminated, saturated clothing immediately.

**After inhalation**

Provide fresh air. When in doubt or if symptoms are observed, get medical advice.

**After contact with skin**

Wash with plenty of water. Take off immediately all contaminated clothing and wash it before reuse.

**After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

**After ingestion**

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink plenty of water. Induce vomiting when the affected person is not unconscious. Call a physician immediately.

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

Risk of serious damage to eyes.

**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**

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

no restriction

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

Non-flammable. The product itself does not burn. In case of fire may be liberated: Hydrogen chloride (HCl).

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.

**Additional information**

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.

Do not allow entering drains or surface water.

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

Provide adequate ventilation. Do not breathe vapour. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

**For non-emergency personnel**

First aider: Pay attention to self-protection! Remove persons to safety.

**For emergency responders**

Cover drains. Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Use personal protection equipment.

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

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

Make sure spills can be contained, e.g. in sump pallets or kerbed areas. Contain leaks or spills within cabinets with removable trays.

**For cleaning up**

Large amounts of spillages: Use approved industrial vacuum cleaner for removal.

Small amounts of spillages: Wipe up with absorbent material (eg. cloth, fleece).

Clear contaminated areas thoroughly. Wash with plenty of water.

**Other information**

Treat the recovered material as prescribed in the section on waste disposal.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

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

Do not breathe vapour. Keep out of reach of children.

**Advice on protection against fire and explosion**

No special fire protection measures are necessary.

**Advice on general occupational hygiene**

Avoid contact with skin, eyes and clothes. Remove contaminated, saturated clothing immediately.

Keep away from food, drink and animal feedingstuffs. Do not eat, drink or smoke when using this product.

Wash hands and face before breaks and after work and take a shower if necessary. Draw up and observe skin protection programme.

**Further information on handling**

Handle and open container with care. Put lids on containers immediately after use.

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

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only.

Keep/Store only in original container. Protect from direct sunlight.

Do not store at temperatures below 0°C. Recommended storage temperature: at room temperature

**Hints on joint storage**

No materials to be specially mentioned

**Further information on storage conditions**

No special measures are necessary. The product is stable under storage at normal ambient temperatures.

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

Solution for monitoring water parameters in aquarium and tap water.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters**

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### DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
13446-34-9	manganous chloride tetrahydrate			
Worker DNEL, long-term		inhalation	systemic	0,2 mg/m³
Worker DNEL, long-term		dermal	systemic	0,004 mg/kg bw/day

### PNEC values

CAS No	Substance			
Environmental compartment				Value
13446-34-9	manganous chloride tetrahydrate			
Freshwater				0,025 mg/l
Marine water				0 mg/l
Freshwater sediment				0,011 mg/kg
Marine sediment				0,001 mg/kg
Micro-organisms in sewage treatment plants (STP)				20,4 mg/l
Soil				14,8 mg/kg

### Additional advice on limit values

To date, no national critical limit values exist.

When using do not eat, drink, smoke, sniff.

### 8.2. Exposure controls

#### Appropriate engineering controls

No special technical protective measures are necessary.

#### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Avoid contact with eyes. Wear eye/face protection. Suitable eye protection: goggles.

##### Hand protection

Avoid contact with skin. Wear suitable gloves.

Suitable material: NBR (Nitrile rubber)

Thickness of the glove material: > 0,35 mm

Permeation time (maximum wear duration): > 8 h

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

##### Skin protection

Body protection: not required.

##### Respiratory protection

Usually no personal respirative protection necessary. In case of inadequate ventilation wear respiratory protection. In the case of vapour formation use a respirator with filter model B2 (according to DIN 3181, 1980).

##### Thermal hazards

Non-flammable. The product itself does not burn. Thermal decomposition can lead to the escape of irritating gases and vapours. In case of fire may be liberated: Hydrogen chloride (HCl).

##### Environmental exposure controls

Avoid release to the environment.

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### SECTION 9: Physical and chemical properties

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

Physical state:	Liquid
Colour:	pink
Odour:	odourless
Odour threshold:	not applicable
Melting point/freezing point:	0 °C
Boiling point or initial boiling point and boiling range:	100 °C
Flammability:	not applicable
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Flash point:	> 100 °C
Auto-ignition temperature:	not determined
Decomposition temperature:	not determined
pH-Value (at 20 °C):	4-6
Viscosity / kinematic:	not determined
Water solubility:	completely miscible
Solubility in other solvents	not determined
Partition coefficient n-octanol/water:	not determined
Vapour pressure:	23 hPa
(at 20 °C)	
Density (at 20 °C):	1,10 g/cm³
Bulk density:	not applicable
Relative vapour density:	not determined

#### 9.2. Other information

##### Information with regard to physical hazard classes

###### Explosive properties

No ignition, explosion, self-heating or visible decomposition.

The product is not: Explosive

###### Sustaining combustion:

Not sustaining combustion

###### Self-ignition temperature

Solid:

not applicable

Gas:

not applicable

###### Oxidizing properties

Not oxidising.

##### Other safety characteristics

###### Evaporation rate:

not determined

###### Solvent separation test:

No data available

###### Solvent content:

not determined

###### Solid content:

not determined

###### Sublimation point:

not applicable

###### Softening point:

not applicable

###### Pour point:

not determined

###### Viscosity / dynamic:

not determined

###### Flow time:

not determined

### SECTION 10: Stability and reactivity

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### 10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

### 10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

### 10.3. Possibility of hazardous reactions

No known hazardous reactions.

### 10.4. Conditions to avoid

Protect from direct sunlight.

### 10.5. Incompatible materials

none

### 10.6. Hazardous decomposition products

Hydrogen chloride (HCl).

Thermal decomposition can lead to the escape of irritating gases and vapours.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in GB CLP Regulation

#### Toxicokinetics, metabolism and distribution

There are no data available on the preparation/mixture itself.

#### Acute toxicity

Harmful if swallowed.

#### ATEmix calculated

ATE (oral) 1358,7 mg/kg

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
13446-34-9	manganous chloride tetrahydrate				
	oral	LD50 250 mg/kg	Rat	TOXNET	

#### Irritation and corrosivity

Causes serious eye damage.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

#### 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

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

#### STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure. (manganous chloride tetrahydrate)

#### Aspiration hazard

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

#### Information on likely routes of exposure

Skin contact, Eye contact, Ingestion, Inhalation

#### Specific effects in experiment on an animal

There are no data available on the preparation/mixture itself.

#### Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

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### Practical experience

There are no data available on the preparation/mixture itself.

### 11.2. Information on other hazards

#### Endocrine disrupting properties

There are no data available on the preparation/mixture itself.

#### Other information

There are no data available on the preparation/mixture itself.

### Further information

Handle in accordance with good industrial hygiene and safety practice.

Health injuries are not known or expected under normal use.

## SECTION 12: Ecological information

### 12.1. Toxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
13446-34-9	manganous chloride tetrahydrate					
	Acute fish toxicity	LC50	6,7 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	
	Acute algae toxicity	ErC50	61 mg/l	72 h	Desmodesmus subspicatus	ECHA
	Acute crustacea toxicity	EC50	4,7 mg/l	48 h	Daphnia magna (Big water flea)	ECOTOX
	Algae toxicity	NOEC	30,72 mg/l	7 d	Lemna minor (little duckweed)	ECHA
	Acute bacteria toxicity	(EC50	>1000 mg/l)	3 h		ECHA

### 12.2. Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

### 12.3. Bioaccumulative potential

The study does not need to be conducted because the substance is inorganic.

### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
13446-34-9	manganous chloride tetrahydrate	0,85

### 12.4. Mobility in soil

The study does not need to be conducted because the substance is inorganic.

### 12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

### 12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

### 12.7. Other adverse effects

No information available.

### Further information

Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods



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### Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

### List of Wastes Code - residues/unused products

160303 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; inorganic wastes containing hazardous substances; hazardous waste

### List of Wastes Code - used product

160507 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; discarded inorganic chemicals consisting of or containing hazardous substances; hazardous waste

### List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

### Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled.

## SECTION 14: Transport information

### Land transport (ADR/RID)

<b>14.1. UN number or ID number:</b>	UN 3287
<b>14.2. UN proper shipping name:</b>	TOXIC LIQUID, INORGANIC, N.O.S. (manganous chloride tetrahydrate)
<b>14.3. Transport hazard class(es):</b>	6.1
<b>14.4. Packing group:</b>	III
Hazard label:	6.1
Classification code:	T4
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	2
Hazard No:	60
Tunnel restriction code:	E

### Inland waterways transport (ADN)

<b>14.1. UN number or ID number:</b>	UN 3287
<b>14.2. UN proper shipping name:</b>	TOXIC LIQUID, INORGANIC, N.O.S. (manganous chloride tetrahydrate)
<b>14.3. Transport hazard class(es):</b>	6.1
<b>14.4. Packing group:</b>	III
Hazard label:	6.1
Classification code:	T4
Special Provisions:	274 802
Limited quantity:	5 L
Excepted quantity:	E1

### Marine transport (IMDG)

<b>14.1. UN number or ID number:</b>	UN 3287
<b>14.2. UN proper shipping name:</b>	TOXIC LIQUID, INORGANIC, N.O.S. (manganous chloride tetrahydrate)
<b>14.3. Transport hazard class(es):</b>	6.1
<b>14.4. Packing group:</b>	III
Hazard label:	6.1
Special Provisions:	223, 274
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-A, S-A

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

<b>14.1. UN number or ID number:</b>	UN 3287
<b>14.2. UN proper shipping name:</b>	TOXIC LIQUID, INORGANIC, N.O.S. (manganous chloride tetrahydrate)
<b>14.3. Transport hazard class(es):</b>	6.1
<b>14.4. Packing group:</b>	III
Hazard label:	6.1
Special Provisions:	A3 A4 A137
Limited quantity Passenger:	2 L
Passenger LQ:	Y642
Excepted quantity:	E1
IATA-packing instructions - Passenger:	655
IATA-max. quantity - Passenger:	60 L
IATA-packing instructions - Cargo:	663
IATA-max. quantity - Cargo:	220 L

### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:	Yes
Danger releasing substance:	manganous chloride tetrahydrate

### 14.6. Special precautions for user

No information available.

### 14.7. Maritime transport in bulk according to IMO instruments

not applicable

## SECTION 15: Regulatory information

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

#### EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

#### Additional information

To follow: 850/2004/EC, 79/117/EEC, 689/2008/EC

#### National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 2 - obviously hazardous to water

### 15.2. Chemical safety assessment

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

## SECTION 16: Other information

### Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%

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**Key literature references and sources for data**

Safety Data Sheet, ECHA

**Classification for mixtures and used evaluation method according to GB CLP Regulation**

Classification	Classification procedure
Acute Tox. 4; H302	Calculation method
Eye Dam. 1; H318	Calculation method
STOT RE 2; H373	Calculation method

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

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H373	May cause damage to organs (brain) through prolonged or repeated exposure if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.

**Further Information**

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP].  
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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

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**sera O2 Test, Reagenz 2**

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

sera O2 Test, Reagenz 2

**EAN**

4001942049146

UFI:

F5HN-PHGN-AHCR-UC9X

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

Solution for monitoring water parameters in aquarium and tap water.

The product is intended for consumer use.

The product is intended for professional use.

**1.3. Details of the supplier of the safety data sheet****Manufacturer**Company name: sera Werke Heimtierbedarf  
J. Ravnak GmbH & Co. KGStreet: Borsigstraße 49  
Place: D-52525 HeinsbergPost-office box: 1466  
D-52518 Heinsberg

Telephone: +49 (0)2452 91260

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e-mail: info@sera.de

Contact person: Dr. Matthias Dahm

e-mail: sds.info@sera.biz

Internet: www.sera.de

Responsible Department: Labor

**Supplier**Company name: sera GmbH  
Street: Borsigstr. 49

Place: D-52525 Heinsberg

Post-office box: 1466  
D-52518 Heinsberg

Telephone: +49 (0)2452 91260

Telefax: +49 (0)2452 5922

e-mail: info@sera.de

Contact person: Dr. Matthias Dahm

e-mail: sds.info@sera.biz

Internet: www.sera.de

Responsible Department: Labor

**1.4. Emergency telephone number:**

+49 (0)2452 91260 (Only available during office hours.)

+49 (0)2452 9126555

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation**

Skin Corr. 1A; H314

Eye Dam. 1; H318

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Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### GB CLP Regulation

##### Hazard components for labelling

sodium hydroxide; caustic soda

**Signal word:** Danger

##### Pictograms:



#### Hazard statements

H314 Causes severe skin burns and eye damage.

#### Precautionary statements

P102 Keep out of reach of children.

P280 Wear protective gloves and eye/face protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a doctor.

#### Additional advice on labelling

The product is classified and labelled according to EC directives or corresponding national laws.

### 2.3. Other hazards

No information available.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Chemical characterization

Product/Substance is inorganic. Solution of sodium hydroxide in water.

#### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
1310-73-2	sodium hydroxide; caustic soda			15 - < 20 %
	215-185-5	011-002-00-6	01-2119457892-27	
	Met. Corr. 1, Skin Corr. 1A; H290 H314			

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

#### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
1310-73-2	215-185-5	sodium hydroxide; caustic soda	15 - < 20 %
		Skin Corr. 1A; H314: >= 5 - 100 Skin Corr. 1B; H314: >= 2 - < 5 Skin Irrit. 2; H315: >= 0,5 - < 2 Eye Irrit. 2; H319: >= 0,5 - < 2	

#### Further Information

Strong alkali

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

Remove contaminated, saturated clothing immediately.

**After inhalation**

Provide fresh air. After inhaling vapours, first symptoms of poisoning may develop hours later, so always consult a doctor.

**After contact with skin**

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

**After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

**After ingestion**

Observe risk of aspiration if vomiting occurs. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Rinse mouth immediately and drink plenty of water. Do not allow a neutralisation agent to be drunk. Call a physician immediately.

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

Serious eye damage/eye irritation

Skin corrosion/irritation

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

Subsequent observance for pneumonia and lung oedema.

**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**

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

no restriction

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

Non-flammable. Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

**Additional information**

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.

Do not allow entering drains or surface water. Fire fighting water forms corrosive alkaline solutions - slip hazard!

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

Provide adequate ventilation. Do not breathe vapour. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

**For non-emergency personnel**

First aider: Pay attention to self-protection! Remove persons to safety.

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**For emergency responders**

Cover drains. Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).  
Use personal protection equipment.

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains. The product is an alkali. Before discharge into sewage plants the product normally needs to be neutralised. Suitable material for diluting or neutralizing: Water, Hydrochloric acid, Sulphuric acid and sulphurous acid.

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

Make sure spills can be contained, e.g. in sump pallets or kerbed areas. Contain leaks or spills within cabinets with removable trays.

**For cleaning up**

Large amounts of spillages: Use approved industrial vacuum cleaner for removal.  
Small amounts of spillages: Wipe up with absorbent material (eg. cloth, fleece).  
Clear contaminated areas thoroughly. Wash with plenty of water.

**Other information**

Treat the recovered material as prescribed in the section on waste disposal.

**6.4. Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

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

Do not breathe vapour. Keep out of reach of children.

**Advice on protection against fire and explosion**

No special fire protection measures are necessary.

**Advice on general occupational hygiene**

Avoid contact with skin, eyes and clothes. Remove contaminated, saturated clothing immediately.  
Keep away from food, drink and animal feedingstuffs. Do not eat, drink or smoke when using this product.  
Wash hands and face before breaks and after work and take a shower if necessary. Draw up and observe skin protection programme.

**Further information on handling**

Handle and open container with care. Put lids on containers immediately after use.

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

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only.  
Keep/Store only in original container.  
Do not store at temperatures below 0°C. Recommended storage temperature: at room temperature

**Hints on joint storage**

Do not store near acids.

**Further information on storage conditions**

No special measures are necessary. The product is stable under storage at normal ambient temperatures.

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

Solution for monitoring water parameters in aquarium and tap water.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters**

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### Exposure limits (EH40)

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
1310-73-2	Sodium hydroxide	-	2		STEL (15 min)	WEL

#### Additional advice on limit values

To date, no national critical limit values exist.  
When using do not eat, drink, smoke, sniff.

### 8.2. Exposure controls

#### Appropriate engineering controls

No special technical protective measures are necessary.

#### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Avoid contact with eyes. Wear eye/face protection. Suitable eye protection: goggles.

##### Hand protection

Avoid contact with skin. Wear suitable gloves.

Suitable gloves type: alkali-resistant

Suitable material: NBR (Nitrile rubber)

Thickness of the glove material: 0,2-0,3 mm

Permeation time (maximum wear duration): > 8 h

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

##### Skin protection

Wear suitable protective clothing. Not required because of small size of the container

##### Respiratory protection

Usually no personal respirative protection necessary. In case of inadequate ventilation wear respiratory protection. In the case of vapour formation use a respirator with filter model B2 (according to DIN 3181, 1980).

##### Thermal hazards

Non-flammable. The product itself does not burn. Thermal decomposition can lead to the escape of irritating gases and vapours.

##### Environmental exposure controls

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

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

Physical state:	Liquid	
Colour:	colourless	
Odour:	odourless	
Odour threshold:	not applicable	
Melting point/freezing point:		not applicable
Boiling point or initial boiling point and boiling range:		100 °C
Flammability:		not applicable
Lower explosion limits:		not determined
Upper explosion limits:		not determined
Flash point:		> 100 °C
Auto-ignition temperature:		not determined
Decomposition temperature:		not determined



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pH-Value (at 20 °C):	13-14
Viscosity / kinematic:	not determined
Water solubility: (at 20 °C)	completely miscible
Solubility in other solvents	
not determined	
Partition coefficient n-octanol/water:	not determined
Vapour pressure: (at 20 °C)	< 24 hPa
Density (at 20 °C):	1,10 g/cm <sup>3</sup>
Bulk density:	not determined
Relative vapour density:	not determined

**9.2. Other information****Information with regard to physical hazard classes****Explosive properties**

No ignition, explosion, self-heating or visible decomposition.

The product is not: Explosive

**Sustaining combustion:**

Not sustaining combustion

**Self-ignition temperature**

Solid:

not applicable

Gas:

not applicable

**Oxidizing properties**

Not oxidising.

**Other safety characteristics**

Evaporation rate:

not determined

Solvent separation test:

No data available

Solvent content:

not determined

Solid content:

not determined

Sublimation point:

not applicable

Softening point:

not applicable

Pour point:

not determined

Viscosity / dynamic:

not determined

Flow time:

not determined

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

Possibility of hazardous reactions. During dilution or dissolving in water, strong heating-up always takes place.

**10.2. Chemical stability**

The product is chemically stable under recommended conditions of storage, use and temperature.

**10.3. Possibility of hazardous reactions**

Exothermic reaction with: Acid, Peroxides, Oxidising agent. The product develops hydrogen in an aqueous solution in contact with metals. No hazardous reaction when handled and stored according to provisions.

**10.4. Conditions to avoid**

Protect from direct sunlight.

**10.5. Incompatible materials**

Keep away from: Acid, Oxidising agent, Peroxides. Alkali metals, Light metals, Ammonium salts

**10.6. Hazardous decomposition products**

Thermal decomposition can lead to the escape of irritating gases and vapours.

**SECTION 11: Toxicological information**

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**11.1. Information on hazard classes as defined in GB CLP Regulation****Toxicokinetics, metabolism and distribution**

There are no data available on the preparation/mixture itself.

**Acute toxicity**

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

**Irritation and corrosivity**

Causes severe skin burns and eye damage.

Causes serious eye damage.

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

**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**

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

**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.

**Information on likely routes of exposure**

Skin contact, Eye contact, Ingestion, Inhalation

**Specific effects in experiment on an animal**

There are no data available on the preparation/mixture itself.

**Additional information on tests**

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

**Practical experience**

There are no data available on the preparation/mixture itself.

**11.2. Information on other hazards****Endocrine disrupting properties**

There are no data available on the preparation/mixture itself.

**Other information**

There are no data available on the preparation/mixture itself.

**Further information**

Handle in accordance with good industrial hygiene and safety practice.

Health injuries are not known or expected under normal use.

**SECTION 12: Ecological information****12.1. Toxicity**

The product is an alkali. Before discharge into sewage plants the product normally needs to be neutralised.

Suitable material for diluting or neutralizing: Water, Hydrochloric acid, Sulphuric acid and sulphurous acid. After neutralisation, toxicity is no longer observed.

**12.2. Persistence and degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.

**12.3. Bioaccumulative potential**

The study does not need to be conducted because the substance is inorganic.

**12.4. Mobility in soil**

The study does not need to be conducted because the substance is inorganic.

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

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The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**12.7. Other adverse effects**

No information available.

**Further information**

Avoid release to the environment.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation. The product is an alkali. Before discharge into sewage plants the product normally needs to be neutralised. Suitable material for diluting or neutralizing: Water, Hydrochloric acid, Sulphuric acid and sulphurous acid.

**List of Wastes Code - residues/unused products**

160303 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; inorganic wastes containing hazardous substances; hazardous waste

**List of Wastes Code - used product**

160507 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; discarded inorganic chemicals consisting of or containing hazardous substances; hazardous waste

**List of Wastes Code - contaminated packaging**

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

**Contaminated packaging**

Wash with plenty of water. Completely emptied packages can be recycled. Dispose of waste according to applicable legislation.

**SECTION 14: Transport information****Land transport (ADR/RID)**

<b>14.1. UN number or ID number:</b>	UN 1824
<b>14.2. UN proper shipping name:</b>	SODIUM HYDROXIDE SOLUTION
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	II
Hazard label:	8
Classification code:	C5
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	80
Tunnel restriction code:	E

**Inland waterways transport (ADN)**

<b>14.1. UN number or ID number:</b>	UN 1824
<b>14.2. UN proper shipping name:</b>	SODIUM HYDROXIDE SOLUTION
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	II
Hazard label:	8
Classification code:	C5

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Limited quantity: 1 L  
 Excepted quantity: E2

**Marine transport (IMDG)**

**14.1. UN number or ID number:** UN 1824  
**14.2. UN proper shipping name:** SODIUM HYDROXIDE, SOLUTION  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
 Hazard label: 8  
 Special Provisions: -  
 Limited quantity: 1 L  
 Excepted quantity: E2  
 EmS: F-A, S-B

**Other applicable information (marine transport)**

Special Provisions: 223

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

**14.1. UN number or ID number:** UN 1824  
**14.2. UN proper shipping name:** SODIUM HYDROXIDE, SOLUTION  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
 Hazard label: 8  
 Special Provisions: A3 A803  
 Limited quantity Passenger: 0.5 L  
 Passenger LQ: Y840  
 Excepted quantity: E2  
 IATA-packing instructions - Passenger: 851  
 IATA-max. quantity - Passenger: 1 L  
 IATA-packing instructions - Cargo: 855  
 IATA-max. quantity - Cargo: 30 L

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

Warning: strongly corrosive. Safe handling: see section 7  
 Personal protection equipment: see section 8

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

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

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 75

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

**Additional information**

To follow: 850/2004/EC, 79/117/EEC, 689/2008/EC

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles 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 hazard class (D): 1 - slightly hazardous to water

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**15.2. Chemical safety assessment**

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

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

This data sheet contains changes from the previous version in section(s): 8,9.

**Abbreviations and acronyms**ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

**Key literature references and sources for data**

Safety Data Sheet, ECHA

**Classification for mixtures and used evaluation method according to GB CLP Regulation**

Classification	Classification procedure
Skin Corr. 1A; H314	Calculation method
Eye Dam. 1; H318	Calculation method

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

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.

**Further Information**

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP].  
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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