

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 13.06.2017

Version 8.1

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

### 1.1 Product identifier

|                           |                                                                                                                                                                                                                                                                                                        |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Catalogue No.             | 114660                                                                                                                                                                                                                                                                                                 |
| Product name              | Iron Test in freshwater and seawater Method: colorimetric with color card MColorTest™                                                                                                                                                                                                                  |
|                           | Fe-1                                                                                                                                                                                                                                                                                                   |
| REACH Registration Number | A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline. |
| CAS-No.                   | 50-81-7                                                                                                                                                                                                                                                                                                |

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

|                 |                                                                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identified uses | Reagent for analysis<br>For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merckgroup.com">www.merckgroup.com</a> ). |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 1.3 Details of the supplier of the safety data sheet

|                        |                                                                                       |
|------------------------|---------------------------------------------------------------------------------------|
| Company                | Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0                         |
| Responsible Department | LS-QHC * e-mail: <a href="mailto:prodsafe@merckgroup.com">prodsafe@merckgroup.com</a> |

|                                |                                                                     |
|--------------------------------|---------------------------------------------------------------------|
| 1.4 Emergency telephone number | Please contact the regional company representation in your country. |
|--------------------------------|---------------------------------------------------------------------|

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## SECTION 2. Hazards identification

### 2.1 Classification of the substance or mixture

This substance is not classified as dangerous according to European Union legislation.

### 2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

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

### 2.3 Other hazards

None known.

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|               | Fe-1                                                                                  |

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## SECTION 3. Composition/information on ingredients

### 3.1 Substance

|            |                                                     |
|------------|-----------------------------------------------------|
| Formula    | C <sub>6</sub> H <sub>8</sub> O <sub>6</sub> (Hill) |
| EC-No.     | 200-066-2                                           |
| Molar mass | 176,12 g/mol                                        |

|         |                                                                       |
|---------|-----------------------------------------------------------------------|
| Remarks | No disclosure requirement according to Regulation (EC) No. 1907/2006. |
|---------|-----------------------------------------------------------------------|

### 3.2 Mixture

Not applicable

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## SECTION 4. First aid measures

### 4.1 Description of first aid measures

After inhalation: fresh air.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

After eye contact: rinse out with plenty of water. Remove contact lenses.

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

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

We have no description of any toxic symptoms.

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

No information available.

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## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

*Suitable extinguishing media*

Water, Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

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## 5.2 Special hazards arising from the substance or mixture

Combustible.

Risk of dust explosion.

Development of hazardous combustion gases or vapours possible in the event of fire.

## 5.3 Advice for firefighters

*Special protective equipment for firefighters*

In the event of fire, wear self-contained breathing apparatus.

*Further information*

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Suppress (knock down) gases/vapours/mists with a water spray jet.

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## SECTION 6. Accidental release measures

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

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## SECTION 7. Handling and storage

### 7.1 Precautions for safe handling

*Advice on safe handling*

Observe label precautions.

*Hygiene measures*

Change contaminated clothing. Wash hands after working with substance.

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

*Storage conditions*

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

Recommended storage temperature see product label.

The data applies to the entire pack.

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## 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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## SECTION 8. Exposure controls/personal protection

### 8.1 Control parameters

### 8.2 Exposure controls

#### Engineering measures

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

See section 7.1.

#### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

##### *Eye/face protection*

Safety glasses

##### *Hand protection*

full contact:

|                     |                |
|---------------------|----------------|
| Glove material:     | Nitrile rubber |
| Glove thickness:    | 0,11 mm        |
| Break through time: | > 480 min      |

splash contact:

|                     |                |
|---------------------|----------------|
| Glove material:     | Nitrile rubber |
| Glove thickness:    | 0,11 mm        |
| Break through time: | > 480 min      |

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

##### *Respiratory protection*

required when dusts are generated.

Recommended Filter type: Filter P 1 (acc. to DIN 3181) for solid particles of inert substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

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## Environmental exposure controls

Do not let product enter drains.

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## SECTION 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                        |                                                           |
|----------------------------------------|-----------------------------------------------------------|
| Form                                   | solid                                                     |
| Colour                                 | white                                                     |
| Odour                                  | odourless                                                 |
| Odour Threshold                        | Not applicable                                            |
| pH                                     | 2,2 - 2,5<br>at 50 g/l<br>20 °C                           |
| Melting point                          | No information available.                                 |
| Boiling point/boiling range            | Not applicable                                            |
| Flash point                            | No information available.                                 |
| Evaporation rate                       | No information available.                                 |
| Flammability (solid, gas)              | No information available.                                 |
| Lower explosion limit                  | Not applicable                                            |
| Upper explosion limit                  | Not applicable                                            |
| Vapour pressure                        | Not applicable                                            |
| Relative vapour density                | Not applicable                                            |
| Density                                | 1,65 g/cm <sup>3</sup><br>at 20 °C                        |
| Relative density                       | No information available.                                 |
| Water solubility                       | 330 g/l<br>at 24 °C                                       |
| Partition coefficient: n-octanol/water | log Pow: -2,15<br>(Lit.) Bioaccumulation is not expected. |
| Auto-ignition temperature              | No information available.                                 |

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|                           |                              |
|---------------------------|------------------------------|
| Decomposition temperature | > 192 °C                     |
| Viscosity, dynamic        | at 20 °C<br>Not applicable   |
| Explosive properties      | Not classified as explosive. |
| Oxidizing properties      | none                         |

## 9.2 Other data

|                      |                    |
|----------------------|--------------------|
| Ignition temperature | 380 °C             |
| Bulk density         | ca.500 - 900 kg/m3 |

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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

Reducing agents  
Risk of dust explosion.

### 10.2 Chemical stability

sensitive to moisture  
Sensitivity to light  
Sensitive to air.

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:  
Aluminium, Copper alloys, Zinc, metal ions, Oxidizing agents, Copper, Acids, bases

### 10.4 Conditions to avoid

Strong heating (decomposition).

### 10.5 Incompatible materials

no information available

### 10.6 Hazardous decomposition products

no information available

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## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

*Acute oral toxicity*  
LD50 Rat: 11.900 mg/kg (RTECS)

*Acute inhalation toxicity*  
This information is not available.

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## *Acute dermal toxicity*

This information is not available.

## *Skin irritation*

Rabbit

Result: No irritation

OECD Test Guideline 404

## *Eye irritation*

Rabbit

Result: slight irritation

OECD Test Guideline 405

## *Sensitisation*

This information is not available.

## *Germ cell mutagenicity*

This information is not available.

## *Carcinogenicity*

This information is not available.

## *Reproductive toxicity*

This information is not available.

## *Teratogenicity*

This information is not available.

## *Specific target organ toxicity - single exposure*

This information is not available.

## *Specific target organ toxicity - repeated exposure*

This information is not available.

## *Aspiration hazard*

This information is not available.

## 11.2 Further information

Substances which occur in nature

Chronic uptake results in damage of:

Kidney

However, when the product is handled appropriately, hazardous effects are unlikely to occur.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### 12.1 Toxicity

#### *Toxicity to fish*

LC50 *Oncorhynchus mykiss* (rainbow trout): 1.020 mg/l; 96 h

OECD Test Guideline 203 acidic

#### *Toxicity to daphnia and other aquatic invertebrates*

EC50 *Daphnia magna* (Water flea): 360 mg/l; 48 h (External MSDS)

#### *Toxicity to algae*

IC50 *Desmodesmus subspicatus* (green algae): 1.750 mg/l; 72 h (External MSDS)

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## *Toxicity to bacteria*

EC50 *Pseudomonas putida*: 140 mg/l; 16 h (External MSDS)

## **12.2 Persistence and degradability**

### *Biodegradability*

97 %; 5 d

OECD Test Guideline 302B

Readily eliminated from water

### *Ratio BOD/ThBOD*

BOD28 65 %

Closed Bottle test

BOD5 48 %

Closed Bottle test

## **12.3 Bioaccumulative potential**

### *Partition coefficient: n-octanol/water*

log Pow: -2,15

(Lit.) Bioaccumulation is not expected.

## **12.4 Mobility in soil**

No information available.

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

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

## **12.6 Other adverse effects**

### *Additional ecological information*

Discharge into the environment must be avoided.

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## **SECTION 13. Disposal considerations**

### *Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## **SECTION 14. Transport information**

### **Land transport (ADR/RID)**

**14.1 UN number** UN 3316

**14.2 Proper shipping name** CHEMICAL KIT

**14.3 Class** 9

**14.4 Packing group** II

**14.5 Environmentally hazardous** --

**14.6 Special precautions for user** yes

Tunnel restriction code E

### **Inland waterway transport (ADN)**

Not relevant

### **Air transport (IATA)**



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|                                   |              |
|-----------------------------------|--------------|
| 14.1 UN number                    | UN 3316      |
| 14.2 Proper shipping name         | CHEMICAL KIT |
| 14.3 Class                        | 9            |
| 14.4 Packing group                | II           |
| 14.5 Environmentally hazardous    | --           |
| 14.6 Special precautions for user | no           |

## Sea transport (IMDG)

|                                   |              |
|-----------------------------------|--------------|
| 14.1 UN number                    | UN 3316      |
| 14.2 Proper shipping name         | CHEMICAL KIT |
| 14.3 Class                        | 9            |
| 14.4 Packing group                | II           |
| 14.5 Environmentally hazardous    | --           |
| 14.6 Special precautions for user | yes          |
| EmS                               | F-A S-P      |

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code  
Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

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## SECTION 15. Regulatory information

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

#### *EU regulations*

|                       |                                   |
|-----------------------|-----------------------------------|
| Major Accident Hazard | 96/82/EC                          |
| Legislation           | Directive 96/82/EC does not apply |
|                       | SEVESO III                        |
|                       | Not applicable                    |

|                                                                         |               |
|-------------------------------------------------------------------------|---------------|
| Regulation (EC) No 1005/2009 on substances that deplete the ozone layer | not regulated |
|-------------------------------------------------------------------------|---------------|

|                                                                                                                                                               |               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC | not regulated |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

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|               | Fe-1                                                                                  |

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Substances of very high concern (SVHC)

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of  $\geq 0.1\%$  (w/w).

## National legislation

Storage class 6.1 D

The data applies to the entire pack.

Dust explosion class St1

## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

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## SECTION 16. Other information

### Merck (company-internal/in-house) Occupational Exposure Limit (Merck OEL)

Internal company value 2 mg/m<sup>3</sup>

Short Term Exposure (15 min) Factor 4

Pregnancy risk groups C

There is no reason to fear damage to the embryo, or foetus when the Merck OEL value is observed.

### Training advice

Provide adequate information, instruction and training for operators.

### Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

### Regional representation

This information is given on the authorised Safety Data Sheet for your country.

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*

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

### 1.1 Product identifier

|                           |                                                                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Catalogue No.             | 114660                                                                                                                                  |
| Product name              | Iron Test in freshwater and seawater Method: colorimetric with color card MColorTest™                                                   |
|                           | Fe-2                                                                                                                                    |
| REACH Registration Number | This product is a mixture. REACH Registration Number see section 3. This product is a mixture. REACH Registration Number see section 3. |

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

|                 |                                                                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identified uses | Reagent for analysis<br>For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merckgroup.com">www.merckgroup.com</a> ). |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 1.3 Details of the supplier of the safety data sheet

|                        |                                                                                       |
|------------------------|---------------------------------------------------------------------------------------|
| Company                | Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0                         |
| Responsible Department | LS-QHC * e-mail: <a href="mailto:prodsafe@merckgroup.com">prodsafe@merckgroup.com</a> |

|                                |                                                                     |
|--------------------------------|---------------------------------------------------------------------|
| 1.4 Emergency telephone number | Please contact the regional company representation in your country. |
|--------------------------------|---------------------------------------------------------------------|

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## SECTION 2. Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1, H290

Acute toxicity, Category 3, Oral, H301

Acute toxicity, Category 3, Inhalation, H331

Acute toxicity, Category 3, Dermal, H311

Skin corrosion, Category 1B, H314

Skin sensitisation, Category 1, H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## 2.2 Label elements

### Labelling (REGULATION (EC) No 1272/2008)

#### *Hazard pictograms*



#### *Signal word*

Danger

#### *Hazard statements*

H290 May be corrosive to metals.

H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

#### *Precautionary statements*

##### Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

##### Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

### Reduced labelling (≤125 ml)

#### *Hazard pictograms*



#### *Signal word*

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Danger

## *Hazard statements*

H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

## *Precautionary statements*

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Contains: Thioglycolic acid, Ammonium thioglycolate

## 2.3 Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Chemical nature Thioglycolic acid mixture.

### 3.1 Substance

Not applicable

### 3.2 Mixture

#### Hazardous components (REGULATION (EC) No 1272/2008)

##### *Chemical name (Concentration)*

| CAS-No. | Registration number | Classification |
|---------|---------------------|----------------|
|---------|---------------------|----------------|

|                                                  |  |  |
|--------------------------------------------------|--|--|
| Thioglycolic acid ( $\geq 50\%$ - $\leq 100\%$ ) |  |  |
|--------------------------------------------------|--|--|

|         |                   |  |
|---------|-------------------|--|
| 68-11-1 | 01-2119494933-24- |  |
|---------|-------------------|--|

|      |  |  |
|------|--|--|
| xxxx |  |  |
|------|--|--|

Acute toxicity, Category 3, H301

Acute toxicity, Category 3, H331

Acute toxicity, Category 3, H311

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Skin corrosion, Category 1B, H314

Ammonium thioglycolate ( $\geq 10\%$  -  $< 20\%$ )

5421-46-5 01-2119531489-31-

XXXX

Corrosive to metals, Category 1, H290

Acute toxicity, Category 3, H301

Skin sensitisation, Category 1, H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4. First aid measures

### 4.1 Description of first aid measures

#### *General advice*

First aider needs to protect himself.

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

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

Irritation and corrosion, Allergic reactions, Cough, Shortness of breath

Risk of blindness!

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

No information available.

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## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

#### *Suitable extinguishing media*

Water, Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

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## *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

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

Combustible.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

Fire may cause evolution of:

Sulphur oxides

### **5.3 Advice for firefighters**

#### *Special protective equipment for firefighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### *Further information*

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

## **SECTION 6. Accidental release measures**

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

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### **6.2 Environmental precautions**

Do not let product enter drains.

### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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

Indications about waste treatment see section 13.

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## **SECTION 7. Handling and storage**

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

#### *Advice on safe handling*

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

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## *Hygiene measures*

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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

### *Requirements for storage areas and containers*

No metal containers.

### *Storage conditions*

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

Recommended storage temperature see product label.

The data applies to the entire pack.

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

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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

### **8.1 Control parameters**

#### **Derived No Effect Level (DNEL)**

##### *Thioglycolic acid (68-11-1)*

|                       |                  |            |                       |
|-----------------------|------------------|------------|-----------------------|
| Worker DNEL, acute    | Systemic effects | inhalation | 4,5 mg/m <sup>3</sup> |
| Worker DNEL, longterm | Systemic effects | dermal     | 1,6 mg/kg Body weight |

#### **Predicted No Effect Concentration (PNEC)**

##### *Thioglycolic acid (68-11-1)*

|                           |              |
|---------------------------|--------------|
| PNEC Fresh water sediment | 0,0009 mg/kg |
| PNEC Soil                 | 0,0053 mg/kg |

### **8.2 Exposure controls**

#### **Engineering measures**

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

See section 7.1.

#### **Individual protection measures**

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

##### *Eye/face protection*

Tightly fitting safety goggles

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|               |                                                                                                  |
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## *Hand protection*

full contact:

|                     |                 |
|---------------------|-----------------|
| Glove material:     | polychloroprene |
| Glove thickness:    | 0,65 mm         |
| Break through time: | > 60 min        |

splash contact:

|                     |               |
|---------------------|---------------|
| Glove material:     | natural latex |
| Glove thickness:    | 0,6 mm        |
| Break through time: | > 30 min      |

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 720 Camapren® (full contact), KCL 706 Lapren® (splash contact).

This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

## *Other protective equipment*

Acid-resistant protective clothing

## *Respiratory protection*

required when vapours/aerosols are generated.

Recommended Filter type: filter ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

## **Environmental exposure controls**

Do not let product enter drains.

---

## **SECTION 9. Physical and chemical properties**

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

|                 |                           |
|-----------------|---------------------------|
| Form            | liquid                    |
| Colour          | colourless                |
| Odour           | unpleasant                |
| Odour Threshold | No information available. |
| pH              | strongly acid             |
| Melting point   | No information available. |
| Boiling point   | No information available. |

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|                                        |                                                                  |
|----------------------------------------|------------------------------------------------------------------|
| Flash point                            | No information available.                                        |
| Evaporation rate                       | No information available.                                        |
| Flammability (solid, gas)              | No information available.                                        |
| Lower explosion limit                  | No information available.                                        |
| Upper explosion limit                  | No information available.                                        |
| Vapour pressure                        | 0,1 hPa<br>at 20 °C<br>Information refers to the main component. |
| Relative vapour density                | No information available.                                        |
| Density                                | ca. 1,2 g/cm <sup>3</sup><br>at 20 °C                            |
| Relative density                       | No information available.                                        |
| Water solubility                       | at 20 °C<br>soluble                                              |
| Partition coefficient: n-octanol/water | No information available.                                        |
| Auto-ignition temperature              | No information available.                                        |
| Decomposition temperature              | No information available.                                        |
| Viscosity, dynamic                     | No information available.                                        |
| Explosive properties                   | Not classified as explosive.                                     |
| Oxidizing properties                   | none                                                             |

## 9.2 Other data

|           |                             |
|-----------|-----------------------------|
| Corrosion | May be corrosive to metals. |
|-----------|-----------------------------|

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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

highly reactive  
Forms explosive mixtures with air on intense heating.

### 10.2 Chemical stability

tendency towards instability

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## 10.3 Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents, strong alkalis, Organic Substances

## 10.4 Conditions to avoid

no information available

## 10.5 Incompatible materials

various metals

## 10.6 Hazardous decomposition products

in the event of fire: See section 5.

---

## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

#### Mixture

##### *Acute oral toxicity*

Acute toxicity estimate: 97,79 mg/kg

Calculation method

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

##### *Acute inhalation toxicity*

absorption

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract, Inhalation may lead to the formation of oedemas in the respiratory tract., Symptoms may be delayed.

Acute toxicity estimate: 4,98 mg/l; 4 h ; vapour

Calculation method

##### *Acute dermal toxicity*

Acute toxicity estimate : 498,59 mg/kg

Calculation method

##### *Skin irritation*

Mixture causes burns.

##### *Eye irritation*

Risk of blindness!

Mixture causes serious eye damage.

##### *Sensitisation*

Mixture may cause an allergic skin reaction.

##### *Germ cell mutagenicity*

This information is not available.

##### *Carcinogenicity*

This information is not available.

##### *Reproductive toxicity*

This information is not available.

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## *Teratogenicity*

This information is not available.

## *Specific target organ toxicity - single exposure*

This information is not available.

## *Specific target organ toxicity - repeated exposure*

This information is not available.

## *Aspiration hazard*

This information is not available.

## 11.2 Further information

The following applies to mercaptans in general: offensive odour.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## Components

### *Thioglycolic acid*

#### *Acute oral toxicity*

LD50 Rat: 73 mg/kg

OECD Test Guideline 401

#### *Acute dermal toxicity*

Acute toxicity estimate : 300,1 mg/kg

Expert judgement

#### *Sensitisation*

Sensitisation test: Guinea pig

Result: negative

Method: OECD Test Guideline 406

#### *Germ cell mutagenicity*

##### *Genotoxicity in vivo*

Micronucleus test

Result: negative

Method: OECD Test Guideline 474

#### *Genotoxicity in vitro*

Ames test

Result: negative

(IUCLID)

### *Ammonium thioglycolate*

#### *Acute oral toxicity*

LD50 Rat: > 35 - < 142 mg/kg

OECD Test Guideline 423

#### *Sensitisation*

Local lymph node assay (LLNA) Mouse

Result: positive

Method: OECD Test Guideline 429

#### *Germ cell mutagenicity*

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## *Genotoxicity in vitro*

Ames test

Result: negative

Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test

Result: negative

Method: OECD Test Guideline 476

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

Method: OECD Test Guideline 473

(calculated on the free acid)

---

## SECTION 12. Ecological information

### Mixture

#### 12.1 Toxicity

No information available.

#### 12.2 Persistence and degradability

No information available.

#### 12.3 Bioaccumulative potential

No information available.

#### 12.4 Mobility in soil

No information available.

#### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

#### 12.6 Other adverse effects

*Additional ecological information*

Discharge into the environment must be avoided.

### Components

#### *Thioglycolic acid*

*Toxicity to fish*

LC50 Pimephales promelas (fathead minnow): 30 mg/l; 96 h (ECOTOX Database)

*Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): 38 mg/l; 48 h (External MSDS)

*Toxicity to algae*

IC50 algae: 13 mg/l; 72 h

OECD Test Guideline 201

*Biodegradability*

70 %; 28 d

OECD Test Guideline 301D

Readily biodegradable

*Theoretical oxygen demand (ThOD)*

1.220 mg/g

(Lit.)

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## *Ammonium thioglycolate*

### *Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): 38 mg/l; 48 h  
OECD Test Guideline 202 (calculated on the free acid)

### *Toxicity to algae*

EC50 Pseudokirchneriella subcapitata (green algae): 13 mg/l; 72 h  
OECD Test Guideline 201 (calculated on the free acid)

### *Biodegradability*

100 %; 28 d  
OECD Test Guideline 301C  
(calculated on the free acid)  
Readily biodegradable

70 %; 28 d  
OECD Test Guideline 301D  
The 10 day time window criterion is not fulfilled. (calculated on the free acid)  
Biodegradable

21 %; 28 d  
OECD Test Guideline 301A  
(calculated on the free acid)  
Not readily biodegradable.

### *Partition coefficient: n-octanol/water*

log Pow: -2,99 (22 °C)  
OECD Test Guideline 107  
Bioaccumulation is not expected.

---

## SECTION 13. Disposal considerations

### *Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

---

## SECTION 14. Transport information

### Land transport (ADR/RID)

|                                   |              |
|-----------------------------------|--------------|
| 14.1 UN number                    | UN 3316      |
| 14.2 Proper shipping name         | CHEMICAL KIT |
| 14.3 Class                        | 9            |
| 14.4 Packing group                | II           |
| 14.5 Environmentally hazardous    | --           |
| 14.6 Special precautions for user | yes          |
| Tunnel restriction code           | E            |

### Inland waterway transport (ADN)

Not relevant

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## Air transport (IATA)

|                                   |              |
|-----------------------------------|--------------|
| 14.1 UN number                    | UN 3316      |
| 14.2 Proper shipping name         | CHEMICAL KIT |
| 14.3 Class                        | 9            |
| 14.4 Packing group                | II           |
| 14.5 Environmentally hazardous    | --           |
| 14.6 Special precautions for user | no           |

## Sea transport (IMDG)

|                                   |              |
|-----------------------------------|--------------|
| 14.1 UN number                    | UN 3316      |
| 14.2 Proper shipping name         | CHEMICAL KIT |
| 14.3 Class                        | 9            |
| 14.4 Packing group                | II           |
| 14.5 Environmentally hazardous    | --           |
| 14.6 Special precautions for user | yes          |
| EmS                               | F-A S-P      |

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code  
Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

---

## SECTION 15. Regulatory information

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

#### *EU regulations*

|                       |                                                                          |
|-----------------------|--------------------------------------------------------------------------|
| Major Accident Hazard | 96/82/EC                                                                 |
| Legislation           | Toxic<br>2<br>Quantity 1: 50 t<br>Quantity 2: 200 t                      |
|                       | SEVESO III<br>ACUTE TOXIC<br>H2<br>Quantity 1: 50 t<br>Quantity 2: 200 t |

|                           |                                                                                                                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational restrictions | Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable. |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                         |               |
|-------------------------------------------------------------------------|---------------|
| Regulation (EC) No 1005/2009 on substances that deplete the ozone layer | not regulated |
|-------------------------------------------------------------------------|---------------|

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|                                                                                                                                                               |               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC | not regulated |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

|                                        |                                                                                                                                                                                                        |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Substances of very high concern (SVHC) | This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of $\geq 0.1\%$ (w/w). |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## National legislation

Storage class 6.1 D  
The data applies to the entire pack.

## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

---

## SECTION 16. Other information

### Full text of H-Statements referred to under sections 2 and 3.

|      |                                          |
|------|------------------------------------------|
| H290 | May be corrosive to metals.              |
| H301 | Toxic if swallowed.                      |
| H311 | Toxic in contact with skin.              |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction.     |
| H331 | Toxic if inhaled.                        |

### Training advice

Provide adequate information, instruction and training for operators.

### Labelling

#### Hazard pictograms





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## *Signal word*

Danger

## *Hazard statements*

H290 May be corrosive to metals.

H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

## *Precautionary statements*

### Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

### Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Contains: Thioglycolic acid, Ammonium thioglycolate

## **Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

## **Regional representation**

This information is given on the authorised Safety Data Sheet for your country.

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*