

Material Safety Data Sheet According to 91/155 EEC

Printing date 27.01.2006

Reviewed on 27.01.2006

* 1 Identification of substance:

- **Product details:** Reagent for water analysis
- **Product name:** Molybdenum HR 1 F25 ml
- **Catalogue number:** CW/53.07.80
- **Supplier:**
Camlab Limited
Camlab House, Norman Way, Over, Cambridge CB4 5WE
United Kingdom
Tel: +44 (0)1954 233100
- **Informing department:** Technical Support
- **Emergency information:**
National Poisons Information Service, United kingdom
Tel: 0870 600 6266 (24 hours) • <http://www.npis.org/>

* 2 Composition/Data on components:

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with harmless additions.

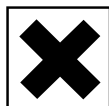
- **Dangerous components:**

| | | | |
|---|---------------|------------|--------|
| CAS: 110-15-6 EINECS: 203-740-4 | succinic acid | ☒ Xi; R 36 | 35-40% |
| CAS: 124-04-9 EINECS: 204-673-3 EC Number: 607-144-00-9 | adipic acid | ☒ Xi; R 36 | 35-40% |

- **Additional information** For the wording of the listed risk phrases refer to section 16.

* 3 Hazards identification

- **Hazard designation:**



Xi Irritant

- **Information pertaining to particular dangers for man and environment**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
R 36 Irritating to eyes.
- **Classification system**
The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

* 4 First aid measures

- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air and call for doctor for safety reasons.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly.

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Product name: Molybdenum HR 1 F25 ml

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- **After eye contact**
Rinse opened eye for several minutes under running water.
Seek medical treatment.
 - **After swallowing**
Rinse out mouth and then drink plenty of water.
Seek medical treatment.
 - **Information for doctor**
 - **The following symptoms may occur:**
after inhalation:
coughing
after swallowing:
sickness
vomiting
mucous membrane irritation
-

* 5 Fire fighting measures

- **Suitable extinguishing agents**
Water
Foam
 - **Special hazards caused by the material, its products of combustion or resulting gases:**
combustible
Formation of toxic gases is possible during heating or in case of fire.
Sulphur oxides (SO_x)
 - **Protective equipment:** Wear self-contained breathing apparatus.
 - **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter drains.
-

* 6 Accidental release measures

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
 - **Measures for environmental protection:** Do not allow product to reach sewage system or water bodies.
 - **Measures for cleaning/collecting:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.
-

* 7 Handling and storage

- **Handling**
 - **Information for safe handling:** Thorough dedusting.
 - **Information about protection against explosions and fires:** Protect from heat.
 - **Storage**
 - **Requirements to be met by storerooms and containers:**
Store in cool location.
Unsuitable material for container: steel.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:**
Keep container tightly sealed.
Protect from heat and direct sunlight.
Store under dry conditions.
Protect from humidity and keep away from water.
This product is hygroscopic.
-

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Protect from the effects of light.

* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**
Keep away from foodstuffs, beverages and food.
Take off immediately all contaminated clothing
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.
Do not eat, drink or smoke while working.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≥ 6 (480 min)
- **Eye protection:** Tightly sealed safety glasses.
- **Body protection:** Protective work clothing.

* 9 Physical and chemical properties:

| | |
|--|---------------------------|
| · Form: | Powder |
| · Colour: | White |
| · Odour: | Odourless |
| · Melting point/Melting range: | Not determined |
| · Boiling point/Boiling range: | 235°C |
| · Flash point: | > 100°C |
| · Danger of explosion: | Product is not explosive. |
| · Density at 20°C | 1.903 g/cm ³ |
| · Solubility in / Miscibility with Water: | Soluble |
| · pH-value (25 g/l) at 20°C: | 2.9 |
| · Solvent content: | |
| Organic solvents: | 0.0 % |
| · Solids content: | 100.0 % |

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* 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
 - **Materials to be avoided:**
 - alkalis
 - aluminium
 - halogen compounds
 - combustible substances
 - oxidizing agents
 - **Dangerous products of decomposition:** see chapter 5
-

* 11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

- **LD/LC50 values that are relevant for classification:**

110-15-6 succinic acid

| | | |
|------|------|------------------|
| Oral | LD50 | 2260 mg/kg (rat) |
|------|------|------------------|

124-04-9 adipic acid

| | | |
|------|------|------------------|
| Oral | LD50 | 5700 mg/kg (rat) |
|------|------|------------------|

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritant effect.
 - **Sensitization:** No sensitizing effect known.
 - **Subacute to chronic toxicity:**
 - CAS-No. 124-04-9:
 - Sensitization test (guinea pig): negative (IUCLID)
 - **Additional toxicological information:**
 - The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
 - Irritant
-

* 12 Ecological information:

- **Information about elimination (persistence and degradability):**
- **Other information:** Quantitative data on the ecological effect of this product are not available.

- **Behaviour in environmental systems:**

110-15-6 succinic acid

| | |
|------------|-----------|
| log P(o/w) | -0.59 (.) |
|------------|-----------|

124-04-9 adipic acid

| | |
|------------|------------------|
| log P(o/w) | 0.093 (25°C) (.) |
|------------|------------------|

- **Ecotoxicological effects:**

- **Aquatic toxicity:**

110-15-6 succinic acid

| | |
|------|--------------------------------|
| EC50 | 374.2 mg/l/48h (Daphnia magna) |
|------|--------------------------------|

124-04-9 adipic acid

| | |
|------|-----------------------------------|
| EC50 | 86 mg/l/48h (Daphnia magna) |
| LC50 | 511 mg/l/48h (Leuciscus idus) |
| | 97 mg/l/96h (Pimephales promelas) |

- **Remark:**
 - Harmful effect due to pH shift.
 - Toxic for fish:
 - sulphates > 7 g/l

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- **Additional ecological information:**

| | |
|----------------------|---------------|
| · BSB5-value: | |
| 124-04-9 adipic acid | |
| BSB5 | 0.598 g/g (-) |

- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.
 Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
 Must not reach sewage water or drainage ditch undiluted or unneutralized.

* 13 Disposal considerations

- **Product:**

- **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

| | |
|-----------------------------------|--|
| · European waste catalogue | |
| 16 05 06 | laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals |

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

14 Transport information

| | |
|--|----|
| · Land transport ADR/RID (cross-border) | |
| · ADR/RID-GGVS/E Class: - | |
| · Maritime transport IMDG: | |
| · IMDG Class: | - |
| · Marine pollutant: | No |
| · Air transport ICAO-TI and IATA-DGR: | |
| · ICAO/IATA Class: | - |

- **Transport/Additional information:** Not dangerous according to the above specifications.

* 15 Regulatory information

- **Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

- **Code letter and hazard designation of product:**

Xi Irritant

- **Risk phrases:**

36 Irritating to eyes.

- **Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 60 This material and its container must be disposed of as hazardous waste.

- **National regulations**

- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

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16 Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant R-phrases**

36 Irritating to eyes.

· **Department issuing data specification sheet:** Technical Department

· *** Data compared to the previous version altered.**

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Printing date 27.01.2006

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* 1 Identification of substance:

- **Product details:** Reagent for water analysis
- **Product name:** Molybdenum HR 2 F10, 25
- **Catalogue number:** CW/53.07.60, CW/53.07.90, CW/53.53.00, CW/53.54.00
- **Supplier:**
Camlab Limited
Camlab House, Norman Way, Over, Cambridge CB4 5WE
United Kingdom
Tel: +44 (0)1954 233100
- **Informing department:** Technical Support
- **Emergency information:**
National Poisons Information Service, United kingdom
Tel: 0870 600 6266 (24 hours) • <http://www.npis.org/>

* 2 Composition/Data on components:

- **Chemical characterization**
- **Description:** Mixture of anorganic compounds

- **Dangerous components:**

| | | | |
|-------------------|---------------------------|----------------------------------|--------|
| CAS: 7775-27-1 | disodium peroxodisulphate | ☒ Xn, ☒ O; R 8-22-36/37/38-42/43 | 35-40% |
| EINECS: 231-892-1 | | | |

- **Additional information** For the wording of the listed risk phrases refer to section 16.

* 3 Hazards identification

- **Hazard designation:**



Xn Harmful

- **Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

R 22 Harmful if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 42/43 May cause sensitisation by inhalation and skin contact.

- **Classification system**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

* 4 First aid measures

- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air or oxygen; call for doctor.
- **After skin contact**
Instantly rinse with water.
Seek medical treatment.

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- **After eye contact**
 - Rinse opened eye for several minutes under running water.
 - Call a doctor immediately.
 - **After swallowing**
 - Rinse out mouth and then drink plenty of water.
 - Do not induce vomiting; instantly call for medical help.
 - **Information for doctor**
 - **The following symptoms may occur:**
 - allergic reactions
 - after inhalation:
 - breathing difficulty
 - coughing
 - after swallowing:
 - sickness
 - vomiting
 - mucous membrane irritation
 - headache
 - **Danger**
 - Danger of impaired breathing.
 - Danger of pulmonary oedema.
 - risk of airways sensitization
 - risk of skin sensitization
-

* 5 Fire fighting measures

- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **Special hazards caused by the material, its products of combustion or resulting gases:**
 - Development of hazardous combustion gases or vapours possible in the event of fire.
 - Sulphur oxides (SO_x)
 - **Protective equipment:** Wear self-contained breathing apparatus.
 - **Additional information**
 - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
 - Collect contaminated fire fighting water separately. It must not enter drains.
-

* 6 Accidental release measures

- **Person-related safety precautions:**
 - Ensure adequate ventilation
 - Wear protective equipment. Keep unprotected persons away.
 - Avoid causing dust.
 - **Measures for environmental protection:** Do not allow product to reach sewage system or water bodies.
 - **Measures for cleaning/collecting:**
 - Dispose of contaminated material as waste according to item 13.
 - Collect mechanically.
 - Ensure adequate ventilation.
-

* 7 Handling and storage

- **Handling**
 - **Information for safe handling:**
 - Thorough dedusting.
 - Work only in fume cupboard.
 - **Information about protection against explosions and fires:** Dust can combine with air to form an explosive mixture.
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store in cool location.
-

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- **Information about storage in one common storage facility:** Store away from reducing agents.
 - **Further information about storage conditions:**
 - Keep container tightly sealed.
 - Protect from heat and direct sunlight.
 - Store under dry conditions.
 - Protect from humidity and keep away from water.
 - This product is hygroscopic.
 - Protect from the effects of light.
-

* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
 - **Components with limit values that require monitoring at the workplace:**
 - The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
 - **Additional information:** The lists that were valid during the compilation were used as basis.
 - **Personal protective equipment**
 - **General protective and hygienic measures**
 - Keep away from foodstuffs, beverages and food.
 - Take off immediately all contaminated clothing
 - Wash hands during breaks and at the end of the work.
 - Avoid contact with the eyes and skin.
 - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
 - **Recommended filter device for short term use:** Filter P2
 - **Protection of hands:**
 - Only use chemical-protective gloves with CE-labelling of category III.
 - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
 - After use of gloves apply skin-cleaning agents and skin cosmetics.
 - **Material of gloves**
 - nitrile rubber, NBR
 - Recommended thickness of the material: ≥ 0.11 mm
 - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
 - **Penetration time of glove material**
 - Value for the permeation: Level ≥ 6 (480 min)
 - The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - **Eye protection:** Tightly sealed safety glasses.
 - **Body protection:** Protective work clothing.
-

* 9 Physical and chemical properties:

| | |
|--|-----------------------------|
| · Form: | Powder |
| · Colour: | White |
| · Odour: | Odourless |
| · Melting point/Melting range: | Not determined |
| · Boiling point/Boiling range: | 891°C |
| · Flash point: | Not applicable |
| · Inflammability (solid, gaseous) | Product is not inflammable. |
| · Danger of explosion: | Product is not explosive. |
| · Density at 20°C | 2.14 g/cm ³ |
| · Solubility in / Miscibility with Water: | Soluble |

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| | |
|---------------------------------------|---------|
| · pH-value (10.8 g/l) at 20°C: | 5.6 |
| · Solvent content: | |
| Organic solvents: | 0.0 % |
| · Solids content: | 100.0 % |

*10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
 - **Materials to be avoided:**
 - combustible substances
 - alcohols
 - reducing agents
 - aluminium
 - **Dangerous reactions** Develops toxic gases / fumes
 - **Dangerous products of decomposition:**
 - oxygen
 - sodium monoxide
 - see chapter 5
-

*11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

| | | |
|---|------|--------------------|
| · LD/LC50 values that are relevant for classification: | | |
| 7757-82-6 sodium sulphate | | |
| Oral | LD50 | 5989 mg/kg (mouse) |
| 7775-27-1 disodium peroxodisulphate | | |
| Oral | LD50 | 930 mg/kg (rat) |

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritant effect.
 - **Sensitization:**
 - Sensitization possible by inhalation.
 - Sensitization possible by skin contact.
 - **Subacute to chronic toxicity:**
 - CAS-No. 7727-54-0:
 - MERCK: Sensitization test (guinea pig): positiv (OECD 406)
 - **Additional toxicological information:**
 - The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
 - Harmful
 - Irritant
-

*12 Ecological information:

- **Information about elimination (persistence and degradability):**
- **Other information:**
 - Quantitative data on the ecological effect of this product are not available.
 - Methods for the determination of biodegradability are not applicable to inorganic substances.

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Product name: Molybdenum HR 2 F10, 25

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- **Ecotoxicological effects:**

| | |
|--|--|
| · Aquatic toxicity: | |
| 7757-82-6 sodium sulphate | |
| EC50 | 2564 mg/l/48h (Daphnia magna) |
| LC50 | 13500-14500 mg/l/96h (Pimephales promelas) |
| 7775-27-1 disodium peroxodisulphate | |
| EC50 | 133 mg/l/48h (Daphnia magna) |
| LC50 | 771 mg/l/96h (Onchorhynchus mykiss) |

- **Remark:**

Toxic for fish:
sulphates > 7 g/l
Reacts with water to form toxic decomposition products.

- **Bacterial toxicity:** sulphates toxic > 2.5 g/l

- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralized.

* 13 Disposal considerations

- **Product:**

- **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

| | |
|-----------------------------------|--|
| · European waste catalogue | |
| 16 05 07 | discarded inorganic chemicals consisting of or containing dangerous substances |

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

* 14 Transport information

| | |
|--|----|
| · Land transport ADR/RID (cross-border) | |
| · ADR/RID-GGVS/E Class: - | |
| · Maritime transport IMDG: | |
| · IMDG Class: | - |
| · Marine pollutant: | No |
| · Air transport ICAO-TI and IATA-DGR: | |
| · ICAO/IATA Class: | - |

- **Transport/Additional information:** Not dangerous according to the above specifications.

* 15 Regulatory information

- **Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

- **Code letter and hazard designation of product:**

Xn Harmful

- **Hazard-determining components of labelling:**

disodium peroxodisulphate

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· Risk phrases:

- 22 Harmful if swallowed.
- 36/37/38 Irritating to eyes, respiratory system and skin.
- 42/43 May cause sensitisation by inhalation and skin contact.

· Safety phrases:

- 22 Do not breathe dust.
- 24 Avoid contact with skin.
- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 37 Wear suitable gloves.
- 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- 60 This material and its container must be disposed of as hazardous waste.

· National regulations**· Information about limitation of use:**

- Employment restrictions concerning young persons must be observed.
 - Employment restrictions concerning pregnant and lactating women must be observed.
-

***16 Other information**

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant R-phrases

- 22 Harmful if swallowed.
- 36/37/38 Irritating to eyes, respiratory system and skin.
- 42/43 May cause sensitisation by inhalation and skin contact.
- 8 Contact with combustible material may cause fire.

· Department issuing data specification sheet: Technical Department**· * Data compared to the previous version altered.**

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* 1 Identification of substance:

- **Product details:** Reagent for water analysis
- **Product name:** Molybdenum HR 3 F10, 25
- **Catalogue number:** CW/53.07.70, CW/53.08.00
- **Supplier:**
Camlab Limited
Camlab House, Norman Way, Over, Cambridge CB4 5WE
United Kingdom
Tel: +44 (0)1954 233100
- **Informing department:** Technical Support
- **Emergency information:**
National Poisons Information Service, United kingdom
Tel: 0870 600 6266 (24 hours) • <http://www.npis.org/>

2 Composition/Data on components:

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with harmless additions.

- **Dangerous components:**

| | | | |
|-------------------|-----------------------------------|------------------|--------|
| CAS: 65208-41-5 | calcium thioglycollate trihydrate | ☒ Xn; R 22-37-43 | 20-25% |
| EINECS: 249-881-5 | | | |

- **Additional information** For the wording of the listed risk phrases refer to section 16.

3 Hazards identification

- **Hazard designation:**



Xi Irritant

- **Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

R 37 Irritating to respiratory system.

R 43 May cause sensitisation by skin contact.

- **Classification system**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

* 4 First aid measures

- **General information**

Instantly remove any clothing soiled by the product.

Take affected persons into the open air.

- **After inhalation** Supply fresh air and call for doctor for safety reasons.

- **After skin contact** Instantly wash with water and soap and rinse thoroughly.

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Product name: Molybdenum HR 3 F10, 25

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- **After eye contact**
Rinse opened eye for several minutes under running water.
Call a doctor immediately.
 - **After swallowing**
Rinse out mouth and then drink plenty of water.
Induce vomiting.
 - **Information for doctor**
 - **The following symptoms may occur:**
after inhalation:
coughing
breathing difficulty
mucous membrane irritation
after swallowing:
absorption
sickness
vomiting
gastric or intestinal trouble
cramps
diarrhoea
CNS disorders
 - **Danger** risk of skin sensitization
-

5 Fire fighting measures

- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **Special hazards caused by the material, its products of combustion or resulting gases:**
Formation of toxic gases is possible during heating or in case of fire.
Sulphur oxides (SO_x)
 - **Protective equipment:** Wear self-contained breathing apparatus.
 - **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter drains.
Ambient fire may liberate hazardous vapours.
-

6 Accidental release measures

- **Person-related safety precautions:**
Wear protective equipment. Keep unprotected persons away.
Avoid causing dust.
Use breathing protection against the effects of fumes/dust/aerosol.
 - **Measures for environmental protection:** Do not allow product to reach sewage system or water bodies.
 - **Measures for cleaning/collecting:**
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Collect mechanically.
-

* 7 Handling and storage

- **Handling**
- **Information for safe handling:** Thorough dedusting.
- **Information about protection against explosions and fires:** The product is not flammable
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:** Not required.

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Further information about storage conditions:

- Keep container tightly sealed.
 - Protect from heat and direct sunlight.
 - Store under dry conditions.
 - Protect from humidity and keep away from water.
 - This product is hygroscopic.
 - Protect from the effects of light.
-

* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

| |
|---|
| <ul style="list-style-type: none"> · Components with limit values that require monitoring at the workplace: |
|---|

| |
|--|
| 1330-43-4 disodium tetraborate, anhydrous |
|--|

| |
|--|
| WEL (Great Britain) Long-term value: 1 mg/m ³ |
|--|

- **Additional information:** The lists that were valid during the compilation were used as basis.

- **Personal protective equipment**

- **General protective and hygienic measures**

- Keep away from foodstuffs, beverages and food.
- Take off immediately all contaminated clothing
- Wash hands during breaks and at the end of the work.
- Avoid contact with the eyes and skin.

- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

- **Recommended filter device for short term use:** Filter P2

- **Protection of hands:**

- Only use chemical-protective gloves with CE-labelling of category III.
- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- After use of gloves apply skin-cleaning agents and skin cosmetics.

- **Material of gloves**

nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

Value for the permeation: Level ≥ 6 (480 min)

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:** Tightly sealed safety glasses.

- **Body protection:** Protective work clothing.
-

* 9 Physical and chemical properties:

- | | |
|------------------|----------------|
| · Form: | Powder |
| · Colour: | White |
| · Odour: | Characteristic |

- | | |
|---------------------------------------|----------------|
| · Melting point/Melting range: | Not determined |
|---------------------------------------|----------------|

- | | |
|---------------------------------------|--------|
| · Boiling point/Boiling range: | 891 °C |
|---------------------------------------|--------|

- | | |
|-----------------------|----------------|
| · Flash point: | Not applicable |
|-----------------------|----------------|

- | | |
|-------------------------------|---------------------------|
| · Danger of explosion: | Product is not explosive. |
|-------------------------------|---------------------------|

- | | |
|------------------|----------------|
| · Density | Not determined |
|------------------|----------------|

- | | |
|--|---------|
| · Solubility in / Miscibility with Water: | Soluble |
|--|---------|

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| | |
|-------------------------------------|---------|
| · pH-value (10 g/l) at 20°C: | 11 |
| · Solvent content: | |
| Organic solvents: | 0.0 % |
| · Solids content: | 100.0 % |

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Materials to be avoided:**
 - metals
 - aluminium
- **Dangerous products of decomposition:**
 - hydrogen sulphide
 - sodium monoxide
 - see chapter 5

* 11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

| | | |
|---|------|---------------------------------------|
| · LD/LC50 values that are relevant for classification: | | |
| 1330-43-4 disodium tetraborate, anhydrous | | |
| Oral | LD50 | 709 mg/kg (human) 2660 mg/kg (rat) |
| 65208-41-5 calcium thioglycollate trihydrate | | |
| Oral | LD50 | 352 mg/kg (rat) |

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritant effect.
- **Sensitization:** Sensitization possible by skin contact.
- **Additional toxicological information:**
 - The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
 - Irritant

* 12 Ecological information:

- **Information about elimination (persistence and degradability):**
- **Other information:** Quantitative data on the ecological effect of this product are not available.
- **Ecotoxicological effects:**

| | | |
|--|--|--|
| · Aquatic toxicity: | | |
| 7757-82-6 sodium sulphate | | |
| EC50 | 2564 mg/l/48h (Daphnia magna) | |
| LC50 | 13500-14500 mg/l/96h (Pimephales promelas) | |
| 1330-43-4 disodium tetraborate, anhydrous | | |
| LC50 | 807 mg/l (fish) | |

- **Remark:**
 - Toxic for fish:
 - sulphates > 7 g/l

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- **Bacterial toxicity:** sulphates toxic > 2.5 g/l
 - **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralized.
-

13 Disposal considerations

- **Product:**
- **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

| | |
|---------------------------------|--|
| European waste catalogue | |
| 16 05 06 | laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals |

- **Uncleaned packagings:**
 - **Recommendation:** Disposal must be made according to official regulations.
 - **Recommended cleaning agent:** Water, if necessary with cleaning agent.
-

14 Transport information

- | | |
|--|---|
| Land transport ADR/RID (cross-border) | |
| ADR/RID-GGVS/E Class: | - |

- | | |
|---------------------------------|----|
| Maritime transport IMDG: | |
| IMDG Class: | - |
| Marine pollutant: | No |

- | | |
|--|---|
| Air transport ICAO-TI and IATA-DGR: | |
| ICAO/IATA Class: | - |

- **Transport/Additional information:** Not dangerous according to the above specifications.
-

*15 Regulatory information

- **Designation according to EC guidelines:**
The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)
- **Code letter and hazard designation of product:**
Xi Irritant
- **Hazard-determining components of labelling:**
calcium thioglycollate trihydrate
- **Risk phrases:**
37 Irritating to respiratory system.
43 May cause sensitisation by skin contact.
- **Safety phrases:**
24/25 Avoid contact with skin and eyes.
37 Wear suitable gloves.
60 This material and its container must be disposed of as hazardous waste.
- **National regulations**
- **Information about limitation of use:**
Employment restrictions concerning young persons must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.

— GB —
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16 Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant R-phrases**

22 Harmful if swallowed.

37 Irritating to respiratory system.

43 May cause sensitisation by skin contact.

· **Department issuing data specification sheet:** Technical Department

· *** Data compared to the previous version altered.**