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

1.1 Product identifier

Identification of the substance: Sodium sulphide hydrate

Sodium sulphide hydrate

Article number: 8634

Registration number (REACH): This information is not available.

Index No: 016-009-00-8

EC number: 215-211-5

CAS number: 27610-45-3

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

Identified uses: laboratory chemical

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
E-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet: Department Health, Safety and Environment
E-mail (competent person): sicherheit@carlroth.de

1.4 Emergency telephone number

Emergency information service: Poison Centre Munich: +49/(0)89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

<table>
<thead>
<tr>
<th>Section</th>
<th>Hazard class</th>
<th>Hazard class and category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1O</td>
<td>acute toxicity (oral)</td>
<td>(Acute Tox. 3)</td>
<td>H301</td>
</tr>
<tr>
<td>3.1D</td>
<td>acute toxicity (dermal)</td>
<td>(Acute Tox. 3)</td>
<td>H311</td>
</tr>
<tr>
<td>3.2</td>
<td>skin corrosion/irritation</td>
<td>(Skin Corr. 1B)</td>
<td>H314</td>
</tr>
<tr>
<td>3.3</td>
<td>serious eye damage/eye irritation</td>
<td>(Eye Dam. 1)</td>
<td>H318</td>
</tr>
<tr>
<td>4.1A</td>
<td>hazardous to the aquatic environment - acute hazard</td>
<td>(Aquatic Acute 1)</td>
<td>H400</td>
</tr>
<tr>
<td>4.1C</td>
<td>hazardous to the aquatic environment - chronic hazard</td>
<td>(Aquatic Chronic 1)</td>
<td>H410</td>
</tr>
</tbody>
</table>
For full text of Hazard- and EU Hazard-statements: see SECTION 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word

Danger

Pictograms

Hazard statements

H301+H311 Toxic if swallowed or in contact with skin.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

Precautionary statements - prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements - response

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353 IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water/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.

Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Symbol(s)

H301+H311 Toxic if swallowed or in contact with skin.
H314 Causes severe skin burns and eye damage.
P303+P361+P353 IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water/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.

2.3 Other hazards

There is no additional information.
SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Sodium sulphide hydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index No</td>
<td>016-009-00-8</td>
</tr>
<tr>
<td>EC number</td>
<td>215-211-5</td>
</tr>
<tr>
<td>CAS number</td>
<td>27610-45-3</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>Na₂S * x H₂O</td>
</tr>
<tr>
<td>Molar mass</td>
<td>78.04 g/mol</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
Take off immediately all contaminated clothing. Self-protection of the first aider.

Following inhalation
Provide fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact
After contact with skin, wash immediately with plenty of water. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

Following eye contact
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. Protect uninjured eye.

Following ingestion
Rinse mouth immediately and drink plenty of water. If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects). Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed
Irritation, Corrosion, Headache, Vertigo, Nausea, Vomiting, Unconsciousness, Narcosis, Risk of blindness

4.3 Indication of any immediate medical attention and special treatment needed
none
SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO2)

Unsuitable extinguishing media
water jet

5.2 Special hazards arising from the substance or mixture
Heating may cause an explosion. Spontaneous decomposition of the material.

Hazardous combustion products
In case of fire may be liberated: sulphur oxides (SOx)

5.3 Advice for firefighters
Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Do not breathe dust. Do not breathe vapour/spray. Avoid contact with skin, eyes and clothes. Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

6.2 Environmental precautions
Keep away from drains, surface and ground water. Retain contaminated washing water and dispose it.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill
Covering of drains.

Advices on how to clean up a spill
Take up mechanically. Control of dust.

Other information relating to spills and releases
Place in appropriate containers for disposal. Ventilate affected area.

Reference to other sections
SECTION 7: Handling and storage

7.1 Precautions for safe handling
Provide adequate ventilation as well as local exhaustion at critical locations. Handle and open container with care. Do not mix with acids. Clear contaminated areas thoroughly.

Advice on general occupational hygiene
When using do not eat or drink. Thorough skin-cleansing after handling the product.

7.2 Conditions for safe storage, including any incompatibilities
Store in a well-ventilated place. Keep container tightly closed.

Incompatible substances or mixtures
Observe hints for combined storage.

Consideration of other advice
Keep only in original container. Store locked up.

• Ventilation requirements
Use local and general ventilation.

• Specific designs for storage rooms or vessels
Recommended storage temperature: 20 - 25 °C.

7.3 Specific end use(s)
No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)
No data available.

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection
Use safety goggle with side protection. Wear face protection.

Skin protection

• hand protection
Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. 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.
Sodium sulphide hydrate 60%, in flakes

article number: 8634

- type of material
  NBR (Nitrile rubber)
- material thickness
  0,4 mm.
- breakthrough times of the glove material
  >480 minutes (permeation: level 6)
- other protection measures
  Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection

Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P3 (filters at least 99,95 % of airborne particles, colour code: White). Aerosol or mist formation. Type: B-P2 (combined filters for acidic gases and particles, colour code: Grey/White). Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

Environmental exposure controls
Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance
- Physical state: solid (scales)
- Colour: whitish yellow
- Odour: like rotten eggs
- Odour threshold: No data available

Other physical and chemical parameters
- pH (value): 13 - 14 (water: 10 g/l, 20 °C)
- Melting point/freezing point: 85 - 90 °C
- Initial boiling point and boiling range: This information is not available.
- Flash point: not applicable
- Evaporation rate: no data available
- Flammability (solid, gas): These information are not available
- Explosive limits
  - lower explosion limit (LEL): this information is not available
  - upper explosion limit (UEL): this information is not available
- Explosion limits of dust clouds: these information are not available
- Vapour pressure: This information is not available.
- Density: 1,43 g/cm³
- Vapour density: This information is not available.
- Bulk density: 600 - 750 kg/m³
- Relative density: Information on this property is not available.
Sodium sulphide hydrate 60%, in flakes

Solubility(ies)
- Water solubility: 170 g/l at 20 °C
- Partition coefficient: n-octanol/water (log KOW) = -3.5 (OECD-107)
- Auto-ignition temperature: Information on this property is not available.
- Decomposition temperature: no data available
- Viscosity: not relevant (solid matter)
- Explosive properties: heating may cause an explosion
- Oxidising properties: none

9.2 Other information
There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity
Contact with acids liberates toxic gas. May be corrosive to metals.

10.2 Chemical stability
The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions
Dangerous/dangerous reactions with: Strong oxidiser, Metals, Acids

10.4 Conditions to avoid
Keep away from heat.

10.5 Incompatible materials
aluminium, iron, zinc, copper

10.6 Hazardous decomposition products
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>LD50</td>
<td>208 mg/kg</td>
<td>rat</td>
<td>TOXNET</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Causes severe burns.
Sodium sulphide hydrate  60%, in flakes

Summary of evaluation of the CMR properties
Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

• Specific target organ toxicity - single exposure
Shall not be classified as a specific target organ toxicant (single exposure).

• Specific target organ toxicity - repeated exposure
Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed
If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects), nausea, vomiting

• If in eyes
causes burns, Causes serious eye damage, risk of blindness

• If inhaled
data are not available

• If on skin
causes severe burns, causes poorly healing wounds

Other information
Other adverse effects: Headache, Unconsciousness, Narcosis, Nausea, Vertigo

SECTION 12: Ecological information

12.1 Toxicity
Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute)
Very toxic to aquatic organisms.

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>0,024 mgl/l</td>
<td>Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td>EC50</td>
<td>2,1 mgl/l</td>
<td>daphnia magna</td>
<td>48 hours</td>
</tr>
</tbody>
</table>

Aquatic toxicity (chronic)
May cause long-term adverse effects in the aquatic environment.

12.2 Process of degradability
The methods for determining the biological degradability are not applicable to inorganic substances.
Sodium sulphide hydrate 60%, in flakes

article number: 8634

12.3 Bioaccumulative potential
Does not significantly accumulate in organisms.
n-octanol/water (log KOW) -3.5

12.4 Mobility in soil
Data are not available.

12.5 Results of PBT and vPvB assessment
Data are not available.

12.6 Other adverse effects
Hazardous to water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information
Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings
It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks
Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number 1849

14.2 UN proper shipping name SODIUM SULPHIDE, HYDRATED
Hazardous ingredients Sodium sulphide hydrate

14.3 Transport hazard class(es)
Class 8 (corrosive substances)

14.4 Packing group II (substance presenting medium danger)

14.5 Environmental hazards hazardous to the aquatic environment

14.6 Special precautions for user
Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.
14.8 Information for each of the UN Model Regulations

• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

<table>
<thead>
<tr>
<th>UN number</th>
<th>1849</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>SODIUM SULPHIDE, HYDRATED</td>
</tr>
<tr>
<td>Particulars in the transport document</td>
<td>UN1849, SODIUM SULPHIDE, HYDRATED, 8, II, (E), environmentally hazardous</td>
</tr>
<tr>
<td>Class</td>
<td>8</td>
</tr>
<tr>
<td>Classification code</td>
<td>C6</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Danger label(s)</td>
<td>8 + &quot;fish and tree&quot;</td>
</tr>
</tbody>
</table>

Environmental hazards       yes (hazardous to the aquatic environment)
Special provisions (SP)      523
Excepted quantities (EQ)     E2
Limited quantities (LQ)      1 kg
Transport category (TC)      2
Tunnel restriction code (TRC) E
Hazard identification No     80

• International Maritime Dangerous Goods Code (IMDG)

<table>
<thead>
<tr>
<th>UN number</th>
<th>1849</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>SODIUM SULPHIDE, HYDRATED</td>
</tr>
<tr>
<td>Particulars in the shipper's declaration</td>
<td>UN1849, SODIUM SULPHIDE, HYDRATED, 8, II, MARINE POLLUTANT</td>
</tr>
<tr>
<td>Class</td>
<td>8</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>yes (hazardous to the aquatic environment)</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Danger label(s)</td>
<td>8 + &quot;fish and tree&quot;</td>
</tr>
</tbody>
</table>

Special provisions (SP)       -
Excepted quantities (EQ)      E2
Limited quantities (LQ)       1 kg
EmS                          F-A, S-B
Stowage category             A
Segregation group             18 - Alkalis
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant provisions of the European Union (EU)

- Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)
  Not listed.
- Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)
  Not listed.
- Regulation 850/2004/EC on persistent organic pollutants (POP)
  Not listed.
- Restrictions according to REACH, Annex XVII
  Not listed
- List of substances subject to authorisation (REACH, Annex XIV)
  Not listed

- Seveso Directive

<table>
<thead>
<tr>
<th>2012/18/EU (Seveso III)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>E1</td>
</tr>
</tbody>
</table>

Notation
56) Hazardous to the Aquatic Environment in category Acute 1 or Chronic 1

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II
Not listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)
Not listed

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)
Not listed

National inventories
Substance is listed in the following national inventories:
- EINECS/ELINCS/NLP (Europe)

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.
### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>CMR</td>
<td>Carcinogenic, Mutagenic or toxic for Reproduction</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>EmS</td>
<td>Emergency Schedule</td>
</tr>
<tr>
<td>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>Index No</td>
<td>the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>NLP</td>
<td>No-Longer Polymer</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

### Key literature references and sources for data
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)

### List of relevant phrases (code and full text as stated in chapter 2 and 3)

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H301</td>
<td>toxic if swallowed</td>
</tr>
<tr>
<td>H311</td>
<td>toxic in contact with skin</td>
</tr>
<tr>
<td>H314</td>
<td>causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H318</td>
<td>causes serious eye damage</td>
</tr>
<tr>
<td>H400</td>
<td>very toxic to aquatic life</td>
</tr>
<tr>
<td>H410</td>
<td>very toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>
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.