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

1.1 Product identifier

Identification of the substance: Streptomycin sulphate

Article number: HP66

Registration number (REACH): It is not required to list the identified uses because the substance is not subject to registration according to REACH (< 1 t/a)

EC number: 223-286-0

CAS number: 3810-74-0

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

Identified uses: laboratory chemical, laboratory and analytical use

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

Competent person: sicherheit@carlroth.de

1.4 Emergency telephone number

<table>
<thead>
<tr>
<th>Name</th>
<th>Street</th>
<th>Postal code/city</th>
<th>Telephone</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Poisons Information Service City Hospital</td>
<td>Dudley Rd</td>
<td>B187QH Birmingham</td>
<td>844 892 0111</td>
<td></td>
</tr>
</tbody>
</table>

Emergency information service: +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>Classification acc. to GHS</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. 4)</td>
<td>H302</td>
</tr>
<tr>
<td>3.7</td>
<td>reproductive toxicity</td>
<td>(Repr. 2)</td>
<td>H361d</td>
</tr>
</tbody>
</table>
2.2 Label elements

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

Signal word

Warning

Pictograms

GHS07, GHS08

Hazard statements

H302 Harmful if swallowed
H361d Suspected of damaging the unborn child

Precautionary statements - prevention

P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective clothing/eye protection.

Precautionary statements - response

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P308+P313 IF exposed or concerned: Get medical advice/attention.

For professional users only

Labelling of packages where the contents do not exceed 125 ml

Signal word: Warning

Symbol(s)

H361d Suspected of damaging the unborn child.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective clothing/eye protection.
P308+P313 IF exposed or concerned: Get medical advice/attention.

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>Streptomycin sulphate</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC number</td>
<td>223-286-0</td>
</tr>
<tr>
<td>CAS number</td>
<td>3810-74-0</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C₄₂H₆₄N₄O₃₆S₉</td>
</tr>
<tr>
<td>Molar mass</td>
<td>1.457 g/mol</td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
Take off contaminated clothing.

Following inhalation
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact
Rinse skin with water/shower.

Following eye contact
Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

Following ingestion
Rinse mouth with water (only if the person is conscious). In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Call a doctor.

4.2 Most important symptoms and effects, both acute and delayed
Malaise, Nausea, Vomiting

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
Combustible.

Hazardous combustion products
In case of fire may be liberated: nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO2), sulphur oxides (SOx)

5.3 Advice for firefighters
Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
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. Do not breathe dust. Avoid contact with skin, eyes and clothes.

6.2 Environmental precautions
Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up
Advice on how to contain a spill
Covering of drains.

Advice 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.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling
No special measures are necessary.

• Measures to prevent fire as well as aerosol and dust generation
Removal of dust deposits.

Advice on general occupational hygiene
Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities
Store in a dry place. Protect from sunlight. Keep in a cool place.

Incompatible substances or mixtures
Observe hints for combined storage.

Consideration of other advice

• Ventilation requirements
Use local and general ventilation.

• Specific designs for storage rooms or vessels
Recommended storage temperature: 4 °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)

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>CAS No</th>
<th>Notation</th>
<th>Identifier</th>
<th>TWA [mg/m³]</th>
<th>STEL [mg/m³]</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB</td>
<td>dust</td>
<td></td>
<td>i</td>
<td>WEL</td>
<td>10</td>
<td></td>
<td>EH40/2005</td>
</tr>
<tr>
<td>GB</td>
<td>dust</td>
<td></td>
<td>r</td>
<td>WEL</td>
<td>4</td>
<td></td>
<td>EH40/2005</td>
</tr>
</tbody>
</table>

Notation
i  Inhalable fraction
r  Respirable fraction
STEL  Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA  Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection

Use safety goggles with side protection.

Skin protection

- **hand protection**
  
  Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. 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. The times are approximate values from measurements at 22 °C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

  - **type of material**
    
    NBR (Nitrile rubber)
  
  - **material thickness**
    
    >0,11 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).
Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94% of airborne particles, colour code: White).

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 (powder)
- Colour: whitish
- Odour: odourless
- Odour threshold: No data available

Other physical and chemical parameters
- pH (value): 4.5 – 7 (water: 50 g/l, 20 °C)
- Melting point/freezing point: not determined
- 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: This information is not available.
Vapour density: This information is not available.
Bulk density: 400 – 600 kg/m³
Relative density: Information on this property is not available.

Solubility(ies)
- Water solubility: miscible in any proportion

Partition coefficient
- n-octanol/water (log KOW): This information is not available.
- Auto-ignition temperature: Information on this property is not available.
- Decomposition temperature: no data available
- Viscosity: not relevant (solid matter)
Explosive properties  Shall not be classified as explosive
Oxidising properties  none

9.2  **Other information**
There is no additional information.

### SECTION 10: Stability and reactivity

10.1  **Reactivity**
The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

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**
Violent reaction with: Strong oxidiser

10.4  **Conditions to avoid**
There are no specific conditions known which have to be avoided.

10.5  **Incompatible materials**
There is no additional information.

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

### SECTION 11: Toxicological information

11.1  **Information on toxicological effects**

**Acute toxicity**
Harmful if swallowed.

<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>430 mg/kg</td>
<td>rat</td>
<td></td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**
Shall not be classified as corrosive/irritant to skin.

**Serious eye damage/eye irritation**
Shall not be classified as seriously damaging to the eye or eye irritant.

**Respiratory or skin sensitisation**
Shall not be classified as a respiratory or skin sensitiser.

**Summary of evaluation of the CMR properties**

**Reproductive toxicity:**
Suspected of damaging the unborn child

- **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
  nausea, vomiting

• If in eyes
  data are not available

• If inhaled
  data are not available

• If on skin
  data are not available

Other information
None

SECTION 12: Ecological information

12.1 Toxicity
acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50</td>
<td>650 mg/l</td>
<td>daphnia magna</td>
<td></td>
<td>48 h</td>
</tr>
<tr>
<td>LC50</td>
<td>&gt;180 mg/l</td>
<td>rainbow trout (Onco-rhynchus mykiss)</td>
<td></td>
<td>96 h</td>
</tr>
</tbody>
</table>

12.2 Process of degradability
Theoretical Oxygen Demand with nitrification: 1,089 mg/mg
Theoretical Oxygen Demand: 0,8563 mg/mg
Theoretical Carbon Dioxide: 1,268 mg/mg

12.3 Bioaccumulative potential
Data are not available.

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
Data are not available.
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.

Sewage disposal-relevant information
Do not empty into drains.

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
(not subject to transport regulations)

14.2 UN proper shipping name
not relevant

14.3 Transport hazard class(es)
not relevant

Class -

14.4 Packing group
not relevant not assigned to a packing group

14.5 Environmental hazards
none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user
There is no additional information.

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)
  Not subject to ADR, RID and ADN.

• International Maritime Dangerous Goods Code (IMDG)
  Not subject to IMDG.

• International Civil Aviation Organization (ICAO-IATA/DGR)
  Not subject to ICAO-IATA.
SECTION 15: Regulatory information

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
- Restrictions according to REACH, Title VIII
  None.
- List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list
  Not listed
- Seveso Directive

<table>
<thead>
<tr>
<th>2012/18/EU (Seveso III)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>Dangerous substance/hazard categories</td>
</tr>
<tr>
<td>Qualifying quantity (tonnes) for the application of lower and upper-tier requirements</td>
</tr>
<tr>
<td>Notes</td>
</tr>
<tr>
<td>not assigned</td>
</tr>
</tbody>
</table>

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

Regulation 98/2013/EU on the marketing and use of explosives precursors
Not listed

Regulation 111/2005/EC laying down rules for the monitoring of trade between the Community and third countries in drug precursors
Not listed

National inventories
Substance is listed in the following national inventories:
Streptomycin sulphate  CELLPURE® ≥720 I.U./mg

article number: HP66

### 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>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>EC50</td>
<td>Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval</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>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IATA/DGR</td>
<td>Dangerous Goods Regulations (DGR) for the air transport (IATA)</td>
</tr>
</tbody>
</table>

### Section 16: Other information

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.
Abbr. | Descriptions of used abbreviations
---|---
ICAO | International Civil Aviation Organization
IMDG | International Maritime Dangerous Goods Code
LC50 | Lethal Concentration 50%; the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
MARPOL | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NLP | No-Longer Polymer
PBT | Persistent, Bioaccumulative and Toxic
REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals
RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL | short-term exposure limit
SVHC | Substance of Very High Concern
TWA | time-weighted average
vPvB | very Persistent and very Bioaccumulative
WEL | workplace exposure limit

Key literature references and sources for data
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

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>H302</td>
<td>harmful if swallowed</td>
</tr>
<tr>
<td>H361d</td>
<td>suspected of damaging the unborn child</td>
</tr>
</tbody>
</table>

Disclaimer
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.