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

1.1 Product identifier

Identification of the substance: Sodium polytungstate hydrate

- Article number: 8828
- Registration number (REACH): 01-2120061128-61-xxxx
- Index No: 074-001-00-X
- EC number: 412-770-9
- CAS number: 12141-67-2

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

- e-mail (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>NSW Poisons Information Centre</td>
<td>Hawkesbury Road</td>
<td>2145 Westmead, NSW</td>
<td>131126</td>
<td></td>
</tr>
</tbody>
</table>

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS
### Classification acc. to GHS

<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. 4)</td>
<td>H302</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>4.1C</td>
<td>hazardous to the aquatic environment - chronic hazard</td>
<td>(Aquatic Chronic 3)</td>
<td>H412</td>
</tr>
</tbody>
</table>

#### 2.2 Label elements

**Labelling GHS**

**Signal word**

Danger

**Pictograms**

GHS05, GHS07

**Hazard statements**

- **H302**: Harmful if swallowed
- **H318**: Causes serious eye damage
- **H412**: Harmful to aquatic life with long lasting effects

**Precautionary statements**

**Precautionary statements - prevention**

- **P270**: Do not eat, drink or smoke when using this product.
- **P273**: Avoid release to the environment.
- **P280**: Wear eye protection/face protection.

**Precautionary statements - response**

- **P305+P351+P338**: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P310**: Immediately call a POISON CENTER or doctor/physician.
- **P330**: Rinse mouth.

**Precautionary statements - disposal**

- **P501**: Dispose of contents/container to industrial combustion plant.

**Labelling of packages where the contents do not exceed 125 ml**

**Signal word**: Danger

**Symbol(s)**

- **H318**: Causes serious eye damage.
- **H412**: Harmful to aquatic life with long lasting effects.
- **P280**: Wear eye protection/face protection.
- **P305+P351+P338**: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P310**: Immediately call a POISON CENTER or doctor/physician.
2.3 Other hazards

There is no additional information.

SECTION 3: Composition/information on ingredients

3.1 Substances

- Name of substance: Sodium polytungstate hydrate
- Index No: 074-001-00-X
- Registration number (REACH): 01-2120061128-61-xxxx
- EC number: 412-770-9
- CAS number: 12141-67-2
- Molecular formula: \( \text{Na}_6\text{O}_{39}\text{W}_{12} \times \text{H}_2\text{O} \)
- Molar mass: 2,986 g/mol

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. In all cases of doubt, or when symptoms persist, seek medical advice.

**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.

**Following ingestion**
Rinse mouth with water (only if the person is conscious). Call a doctor.

4.2 Most important symptoms and effects, both acute and delayed
Irritation, Vomiting, Nausea, Risk of serious damage to eyes

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
Non-combustible.

Hazardous combustion products
in case of fire and/or explosion do not breathe fumes

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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe dust.

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

6.4 Reference to other sections
SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid dust formation.
  - 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
Keep container tightly closed. Store in a dry 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: 15 – 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)

<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>AU</td>
<td>tungsten, soluble compounds</td>
<td>W</td>
<td>WES</td>
<td>1</td>
<td>3</td>
<td>WES</td>
<td></td>
</tr>
</tbody>
</table>

Notation
- 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)
- W: Calculated as W (tungsten)

8.2 Exposure controls
Individual protection measures (personal protective equipment)

Eye/face protection

Use safety goggle 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.

  • **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). 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**

<table>
<thead>
<tr>
<th>Physical state</th>
<th>solid (granulate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>white - light grey</td>
</tr>
<tr>
<td>Odour</td>
<td>odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Other physical and chemical parameters**

<table>
<thead>
<tr>
<th>pH (value)</th>
<th>~ 3 (water: 4,000 g/l, 20 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/freezing point</td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>These information are not available</td>
</tr>
</tbody>
</table>
Sodium polytungstate hydrate ≥99,9 %
article number: 8828

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  
5.47 g/cm³ at 20 °C

Vapour density  
This information is not available.

Bulk density  
~ 1,570 kg/m³

Relative density  
Information on this property is not available.

Solubility(ies)

Water solubility  
>1,000 g/l at 20 °C

Partition coefficient  
n-octanol/water (log KOW)  
<-5.2 (20 °C) (ECHA)

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.

Surface tension  
73.4 mN/m (20 °C)

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

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**

<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>1,715 mg/kg</td>
<td>rat</td>
<td>ECHA</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**

Shall not be classified as corrosive/irritant to skin.

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Respiratory or skin sensitisation**

Shall not be classified as a respiratory or skin sensitiser.

**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**
  Nausea, vomiting

- **If in eyes**
  Causes serious eye damage, risk of blindness

- **If inhaled**
  Inhalation of dust may cause irritation of the respiratory system

- **If on skin**
  Frequently or prolonged contact with skin may cause dermal irritation

**Other information**

None

SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects.
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>83.4 mg/l</td>
<td>aquatic invertebrates</td>
<td>ECHA</td>
<td>48 h</td>
</tr>
<tr>
<td>ErC50</td>
<td>&gt;79.16 mg/l</td>
<td>algae</td>
<td>ECHA</td>
<td>72 h</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.

12.3 Bioaccumulative potential
Does not significantly accumulate in organisms.

n-octanol/water (log KOW) <-5.2 (20 °C)

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. Avoid release to the environment. Refer to special instructions/safety data sheets.

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

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.
Safety data sheet
Safe Work Australia - Code of Practice

Sodium polytungstate hydrate ≥99.9 %
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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

National inventories
Substance is listed in the following national inventories:

<table>
<thead>
<tr>
<th>Country</th>
<th>National Inventories</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>AICS</td>
<td>substance is listed</td>
</tr>
<tr>
<td>CA</td>
<td>NDSL</td>
<td>substance is listed</td>
</tr>
<tr>
<td>EU</td>
<td>ECSI</td>
<td>substance is listed</td>
</tr>
<tr>
<td>EU</td>
<td>REACH Reg.</td>
<td>substance is listed</td>
</tr>
<tr>
<td>JP</td>
<td>CSCL-ENCS</td>
<td>substance is listed</td>
</tr>
<tr>
<td>NZ</td>
<td>NZIoC</td>
<td>substance is listed</td>
</tr>
<tr>
<td>TW</td>
<td>TCSI</td>
<td>substance is listed</td>
</tr>
<tr>
<td>US</td>
<td>TSCA</td>
<td>substance is listed</td>
</tr>
</tbody>
</table>

Legend

AICS  Australian Inventory of Chemical Substances
CSCL-ENCS  List of Existing and New Chemical Substances (CSCL-ENCS)
ECSI  EC Substance Inventory (EINECS, ELINCS, NLP)
NDSL  Non-domestic Substances List (NDSL)
NZIoC  New Zealand Inventory of Chemicals
REACH Reg.  REACH registered substances
TCSI  Taiwan Chemical Substance Inventory
TSCA  Toxic Substance Control Act
15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

16.1 Indication of changes (revised safety data sheet)

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
<th>Safety-relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Classification acc. to GHS: change in the listing (table)</td>
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</tr>
<tr>
<td>2.2</td>
<td>Pictograms: change in the listing (table)</td>
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<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Hazard statements: change in the listing (table)</td>
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<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Precautionary statements - prevention: change in the listing (table)</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Precautionary statements - response: change in the listing (table)</td>
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<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Labelling of packages where the contents do not exceed 125 ml: change in the listing</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Labelling of packages where the contents do not exceed 125 ml: change in the listing</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>8.1</td>
<td>Occupational exposure limit values (Workplace Exposure Limits): Data are not available</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>8.1</td>
<td>Occupational exposure limit values (Workplace Exposure Limits)</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>14.4</td>
<td>Packing group: not relevant</td>
<td>Packing group: not relevant not assigned to a packing group</td>
<td>yes</td>
</tr>
</tbody>
</table>

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>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>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>“Globally Harmonized System of Classification and Labelling of Chemicals” 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>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
</tbody>
</table>
Sodium polytungstate hydrate ≥99.9 %

article number: 8828

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<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>STEL</td>
<td>short-term exposure limit</td>
</tr>
<tr>
<td>TWA</td>
<td>time-weighted average</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>WES</td>
<td>Safe Work Australia: Workplace exposure standards for airborne contaminants</td>
</tr>
</tbody>
</table>

Key literature references and sources for data
- UN Recommendations on the Transport of Dangerous Good
- 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>H318</td>
<td>causes serious eye damage</td>
</tr>
<tr>
<td>H412</td>
<td>harmful to aquatic life with long lasting effects</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.