1 Identification

· Product identifier
  · Trade name: Sodium Hydrogen Sulfide (hydrate)
  · Article number: 10012555
  · CAS Number: 207683-19-0
  · EC number: 683-666-0
· Application of the substance / the mixture
  This product is for research use - Not for human or veterinary diagnostic or therapeutic use.

· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier: Cayman Chemical Co.
    1180 E. Ellsworth Rd.
    Ann Arbor, MI 48108
    USA
  · Information department: Product safety department
  · Emergency telephone number:
    During normal opening times: +1 (734) 971-3335
    US/CANADA: 800-424-9300
    Outside US/CANADA: 703-741-5970

2 Hazard(s) identification

· Classification of the substance or mixture
  GHS05 Corrosion
  Skin Corr. 1B H314 Causes severe skin burns and eye damage.
  Eye Dam. 1 H318 Causes serious eye damage.

· Label elements
  · GHS label elements
    The substance is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms
    GHS05
Trade name: Sodium Hydrogen Sulfide (hydrate)

· **Signal word** Danger

· **Hazard statements**
  H314 Causes severe skin burns and eye damage.

· **Precautionary statements**
  P260 Do not breathe dusts or mists.
  P264 Wash thoroughly after handling.
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
  P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P310 Immediately call a poison center/doctor.
  P313 Avoid contact with skin and eyes.
  P314 Keep container tightly closed.
  P321 Specific treatment (see on this label).
  P330 Rinse mouth.
  P332 Rinse mouth vigorously with water.
  P363 Wash contaminated clothing before reuse.
  P405 Store locked up.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**
  · **NFPA ratings (scale 0 - 4)**
    Health = 3
    Fire = 0
    Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**
  HEALTH Health = *3
  FIRE Fire = 0
  REACTIVITY Reactivity = 0

· **Other hazards**
  · **Results of PBT and vPvB assessment**
    · PBT: Not applicable.
    · vPvB: Not applicable.

3 Composition/information on ingredients

· **Chemical characterization:** Substances
  · **CAS No. Description**
    207683-19-0 Sodium Hydrogen Sulfide (hydrate)
  · **Identification number(s)**
    · EC number: 683-666-0

4 First-aid measures

· **Description of first aid measures**
  · **General information:** Immediately remove any clothing soiled by the product.
  · **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
  · **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
  · **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
  · **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
Trade name: Sodium Hydrogen Sulfide (hydrate)

5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents:
    Use fire fighting measures that suit the environment.
    A solid water stream may be inefficient.
  - Special hazards arising from the substance or mixture: No further relevant information available.
  - Advice for firefighters
    - Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  - Wear protective equipment. Keep unprotected persons away.
- Environmental precautions: Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up:
  - Use neutralizing agent.
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- Reference to other sections
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
- Protective Action Criteria for Chemicals
  - PAC-1: Substance is not listed.
  - PAC-2: Substance is not listed.
  - PAC-3: Substance is not listed.

7 Handling and storage

- Handling:
  - Precautions for safe handling: Thorough dedusting.
  - Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
  - Storage: Store in accordance with information listed on the product insert.
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep receptacle tightly sealed.
  - Specific end use(s): No further relevant information available.
8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
- Components with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing.
  - Wash hands before breaks and at the end of work.
  - Avoid contact with the eyes.
  - Avoid contact with the eyes and skin.
- Breathing equipment: Not required.
- Protection of hands:

  Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- Material of gloves
  - 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.
- Eye protection:

  Tightly sealed goggles

9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
- Appearance:
  - Form: Solid
  - Color: Not determined.
  - Odor: Characteristic
- Structural Formula
  - HNaS • XH2O
- Molecular Weight
  - 56.1 g/mol
- Odor threshold:
  - Not determined.
- pH-value:
  - Not applicable.
10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability
  - Thermal decomposition / conditions to be avoided:
    - No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: strong oxidizing agents
- Hazardous decomposition products: sodium oxides, sulfur oxides

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
  - Primary irritant effect:
  - on the skin: Caustic effect on skin and mucous membranes.

(Contd. from page 4)

Trade name: Sodium Hydrogen Sulfide (hydrate)

<table>
<thead>
<tr>
<th>· Change in condition</th>
<th>· Flash point:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/Melting range: Undetermined.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Boiling point/Boiling range: Undetermined.</td>
<td></td>
</tr>
</tbody>
</table>

| · Flammability (solid, gaseous): Product is not flammable. |
| · Decomposition temperature: Not determined. |
| · Auto igniting: Not determined. |
| · Danger of explosion: Product does not present an explosion hazard. |

<table>
<thead>
<tr>
<th>· Explosion limits:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower: Not determined.</td>
</tr>
<tr>
<td>Upper: Not determined.</td>
</tr>
</tbody>
</table>

| · Vapor pressure: Not applicable. |
| · Density: Not determined. |
| · Relative density: Not determined. |
| · Vapor density: Not applicable. |
| · Evaporation rate: Not applicable. |

| · Solubility in / Miscibility with |
| Water: Not determined. |

| · Partition coefficient (n-octanol/water): Not determined. |

| · Viscosity: |
| Dynamic: Not applicable. |
| Kinematic: Not applicable. |

| SOLUBILITY |
| DMF: 3 mg/ml; DMSO: 3 mg/ml; Ethanol: 3 mg/ml; PBS (pH 7.2): 10 mg/ml |

| · Other information |
| No further relevant information available. |
12 Ecological information

- **Toxicity**
  - *Aquatic toxicity*: No further relevant information available.
  - *Persistence and degradability*: No further relevant information available.
  - *Behavior in environmental systems*:
    - *Bioaccumulative potential*: No further relevant information available.
    - *Mobility in soil*: No further relevant information available.
  - *Additional ecological information*:
    - *General notes*:
      - Water hazard class 1 (Self-assessment): slightly hazardous for water
      - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
      - Must not reach bodies of water or drainage ditch undiluted or unneutralized.
    - *Results of PBT and vPvB assessment*:
      - *PBT*: Not applicable.
      - *vPvB*: Not applicable.
    - *Other adverse effects*: No further relevant information available.

13 Disposal considerations

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

- **Uncleaned packagings**
  - *Recommendation*:
    - Disposal must be made according to official regulations.

14 Transport information

<table>
<thead>
<tr>
<th><strong>UN-Number</strong></th>
<th>UN1759</th>
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<tr>
<td><strong>DOT, IMDG, IATA</strong></td>
<td></td>
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<tr>
<td><strong>UN proper shipping name</strong></td>
<td>Corrosive solids, n.o.s. (Sodium Hydrogen Sulfide (hydrate))</td>
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</table>
### Transport hazard class(es)

<table>
<thead>
<tr>
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<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
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<td>Class</td>
<td>8 Corrosive substances</td>
</tr>
<tr>
<td>IMDG, IATA</td>
<td>Class</td>
<td>8 Corrosive substances</td>
</tr>
<tr>
<td>DOT, IMDG, IATA</td>
<td>Packing group</td>
<td>1</td>
</tr>
<tr>
<td>IMDG, IATA</td>
<td>Environmental hazards:</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

### Special precautions for user
- **Warning:** Corrosive substances
- **Hazard identification number (Kemler code):** 88
- **EMS Number:** F-A,S-B
- **Stowage Category:** B

### Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
- Not applicable.

### Transport/Additional information:
- **DOT**
  - **Quantity limitations**
    - On passenger aircraft/rail: 1 kg
    - On cargo aircraft only: 25 kg
- **IMDG**
  - **Limited quantities (LQ)**: 0
  - **Excepted quantities (EQ)**
    - Code: E0
    - Not permitted as Excepted Quantity
- **IATA**
  - **Remarks:**
    - When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  No further relevant information available.
- Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): Substance is not listed.
- Hazardous Air Pollutants Substance is not listed.
- Proposition 65
  - Chemicals known to cause cancer: Substance is not listed.
  - Chemicals known to cause reproductive toxicity for females: Substance is not listed.
  - Chemicals known to cause reproductive toxicity for males: Substance is not listed.
  - Chemicals known to cause developmental toxicity: Substance is not listed.
- Carcinogenic categories
- EPA (Environmental Protection Agency) Substance is not listed.
- TLV (Threshold Limit Value) Substance is not listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user’s responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- Department issuing SDS: Environment protection department.
- Contact: -
- Date of preparation / last revision 09/29/2022 / -
- Abbreviations and acronyms:
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Skin Corr. 1B: Skin corrosion/irritation – Category 1B
  - Eye Dam. 1: Serious eye damage/eye irritation – Category 1