

Material Safety Data Sheet

Revision Date: 14.10.2018

SODIUM SULPHIDE

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Identification of the substance or mixture

Product name : SODIUM SULPHIDE - YELLOW FLAKES 60-62 %
Chemical formula : Na₂S
CAS No. : 1313-82-2

1.2. Use of the Substance/Mixture

Recommended use : - Chemical industry
- Mining industry
- Water treatment
- Leather Tanning (De-hairing agent)
- Textile industry
- Pulp and paper

1.3. Company/Undertaking Identification

Address : **NOVICHEM CO.**
No.30, Magnolia Str, Qaem Maqam Farahani Ave.
Tehran 15886/13941 IRAN

1.4. Emergency and contact telephone numbers

Contact telephone number : **+98-21-88329799 (Hunting)**
(Product information):

2. HAZARDS IDENTIFICATION

2.1. Emergency Overview:

General Information

Appearance : Flakes
Colour : Yellow
Odour : Sulfurous, Rotten-egg like

Main effects

- Corrosive
- Causes burns.
- Harmful if swallowed.
- Contact with acids liberates toxic gas.
- Very toxic to aquatic organisms.

2.2. Potential Health Effects:

Inhalation

- No hazards to be specially mentioned.
- (in case of higher concentration): slight irritation.

Eye contact

- May cause irreversible eye damage.
- May cause blindness.
- Symptoms: Redness, Lachrymation, Swelling of tissue, Burn.

Skin contact

- Corrosive
- Symptoms: Redness, Swelling of tissue, Burn.

Ingestion

- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
- Symptoms: Nausea, Abdominal pain, Bloody vomiting, Diarrhoea, Suffocation, Cough, Severe shortness of breath.

2.3. Environmental Effects:

- See section 12: Ecological Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Disodium sulfide (hydrate)

CAS-No. : 27610-45-3
Concentration : **>= 91,0 %**

Sodium hydrogensulfide (hydrate)

CAS-No. : 207683-19-0
Concentration : **<= 6,5 %**

Sodium carbonate

CAS-No. : 497-19-8
Concentration : **<= 2,5 %**

4. FIRST AID MEASURES

4.1. Inhalation

- Move to fresh air.
- Oxygen or artificial respiration if needed.
- Victim to lie down in the recovery position, cover and keep him warm.
- Call a physician immediately.

4.2. Eye contact

- Call a physician or poison control centre immediately.
- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
- Take victim immediately to hospital.

4.3. Skin contact

- Take off contaminated clothing and shoes immediately.
- Wash off immediately with plenty of water.
- Keep warm and in a quiet place.
- Call a physician or poison control centre immediately.
- Wash contaminated clothing before re-use.

4.4. Ingestion

- Call a physician or poison control centre immediately.
- Take victim immediately to hospital.
- If swallowed, rinse mouth with water (only if the person is conscious).
- Do NOT induce vomiting.
- Artificial respiration and/or oxygen may be necessary.

4.5. Notes to physician

Exposure to decomposition products :

- None.

5. FIREFIGHTING MEASURES

5.1. Suitable extinguishing media

- Foam
- powder

5.2. Extinguishing media which shall not be used for safety reasons

- Water
- Carbon dioxide (CO₂)

5.3. Special exposure hazards in a fire

- Not combustible.
- Hazardous decomposition products

5.4. Hazardous decomposition products

- Sulphur oxides

5.5. Special protective equipment for firefighters

- Exposure to decomposition products may be a hazard to health.
- In the event of fire, wear self-contained breathing apparatus.

- Use personal protective equipment.
- Wear chemical resistant oversuit

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. Advice for non-emergency personnel

- Prevent further leakage or spillage if safe to do so.

6.1.2. Advice for emergency responders

- Isolate the area.
- Wear self-contained breathing apparatus and protective suit.

6.2. Environmental precautions

- Do not flush into surface water or sanitary sewer system.
- If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

- Pick up and arrange disposal without creating dust.
- Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

- Refer to protective measures listed in sections 7 and 8.

7. HANDLING AND STORAGE

7.1. Handling

- Use product only in closed system.
- Ensure adequate ventilation.
- Keep away from heat.
- Keep away from Incompatible products.

7.2. Storage

- Store in original container.
- Store in a well-ventilated place.
- Keep in a dry place.
- Keep in properly labelled containers.
- Keep container closed.
- Keep away from heat.
- Avoid dust formation.
- Keep away from Incompatible products.

7.3. Packaging material

- Steel drum
- Polyethylene

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure Limit Values

Disodium sulfide (hydrate)

- Threshold Limit Values
Remarks: none established

Sodium hydrogensulfide (hydrate)

- Threshold Limit Values
Remarks: none established

8.2. Engineering controls

- Provide appropriate exhaust ventilation at places where dust is formed.
- Apply technical measures to comply with the occupational exposure limits.

8.3. Personal protective equipment

8.3.1. Respiratory protection

- In case of insufficient ventilation, wear suitable respiratory equipment.
- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- In case of decomposition (see section 10), face mask with combined type B-P3 cartridge.
- Use only respiratory protection that conforms to international/ national standards.
- Use NIOSH approved respiratory protection.

8.3.2. Hand protection

- chemical resistant gloves
- Suitable material: PVC, Neoprene, Natural Rubber

8.3.3. Eye protection

- Goggles

8.3.4. Skin and body protection

- Dust impervious protective suit
- Apron
- Boots
- Neoprene
- PVC

8.3.5. Hygiene measures

- Eye wash bottles or eye wash stations in compliance with applicable standards.
- When using, do not eat, drink or smoke.
- Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General Information

Appearance	:	Flakes
Colour	:	Yellow
Odour	:	Sulfurous, Rotten-egg like

9.2. Important health safety and environmental information

pH	:	12,9 (1 % solution) 13,1 (saturated aqueous solution)
Flash point	:	() (inorganic) <i>Remarks: not applicable</i>
Explosive properties	:	<u>Explosion danger:</u> <i>Remarks: Not explosive</i>
Oxidizing properties	:	<i>Remarks: Non oxidizer</i>
Relative density / Density	:	1,64 <i>Temperature: 21 °C (70 °F)</i>
Solubility(ies)	:	Water 178 g/l <i>Temperature: 20 °C (68 °F)</i> Alcohol <i>Remarks: slightly soluble</i>
Viscosity	:	<i>Remarks: not applicable</i>

9.3. Other data

Melting point/range	:	69 - 93 °C (156 - 199 °F)
Auto-flammability	:	> 430 °C (806 °F)
Granulometry	:	3500 µm <i>Remarks: d 50</i>
Decomposition temperature	:	<i>Remarks: not applicable</i>

10. STABILITY AND REACTIVITY

10.1. Stability

- Stable under recommended storage conditions.

10.2. Conditions to avoid

- Keep away from flames and hot surfaces.
- Exposure to moisture.

10.3. Materials to avoid

- Carbon dioxide (CO₂), Acids, Oxidizing agents, Metals

10.4. Hazardous decomposition products

- Sulphur oxides: Hydrogen sulphide

11. TOXICOLOGICAL INFORMATION

Toxicological data

Acute oral toxicity

- LD50, rat, 246 mg/kg

Acute inhalation toxicity

- , Remarks: no data available

Acute dermal irritation/corrosion

- Remarks: study scientifically unjustified

Skin irritation

- rabbit, corrosive effects

Eye irritation

- Corrosive

Chronic toxicity

- Inhalation, 90-day, rat, NOEL: 80 ppm, (Hydrogen sulphide), Remarks: NOAEC

Carcinogenicity

- Remarks: no data available

Reproductive toxicity

- no data available

Remarks

- no data available
- In vitro tests did not show mutagenic effects
- In vivo tests did not show mutagenic effects

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity effects

Acute toxicity

- Fishes, LC50, 96 h, 0,0027 mg/l (Hydrogen sulphide)
- Fishes, Lepomis macrochirus, NOEC, 826 Days, 0,0046 mg/l (Hydrogen sulphide)
- Crustaceans, EC50, 96 h, 0,02 mg/l (Fresh water) (Hydrogen sulphide)
- Crustaceans, EC50, 96 h, 0,032 mg/l (Marine water) (Hydrogen sulphide)

Chronic toxicity

- Amphipod (Eohaustorius estuarius), LOEC, 48 h, 1,92 mg/l (Hydrogen sulphide)
- Amphipod (Eohaustorius estuarius), LC50, 3,32 mg/l (Hydrogen sulphide)
- Algae, Nitzscheria linearis, EC50, 120 h, 1.900 mg/l (Sodium sulfate)
Remarks: fresh water
- Algae, Skeletonema costatum, EC50, 4 h, 0,104 mg/l (Sodium sulfide)
Remarks: salt water

12.2. Mobility

- Air
Remarks: mobility as solid aerosols
- Water/soil
Remarks: considerable solubility and mobility

12.3. Persistence and degradability

Abiotic degradation

- Air, indirect photo-oxidation, Chemical degradation 0,6 - 2 %, from 1 h (hydrogen sulphide)
Conditions: sensitizer: OH/O₃ radicals
Degradation products: Sulphur dioxide / sulfates / Sulphides
- Water/soil
Result: complexation/precipitation of inorganic and organic materials
- Water/soil
Result: oxidation
Degradation products: sulfates

Biodegradation

- aerobic, Tested according to: oxidation (Sulphides)
Degradation products: sulfites / sulfates
- anaerobic, Tested according to: biodegradation by sulforeduction (sulfates)
Degradation products: hydrogen sulphide
- anaerobic, Tested according to: methanogenesis (sulfates)
Remarks: inhibitory action

12.4. Bioaccumulative potential

- Result: Does not bioaccumulate.

12.5. Other adverse effects

- no data available

12.6. Remarks

- Very toxic to aquatic organisms.

- Product fate is highly dependent on environmental conditions: pH, temperature, redox potential, mineral and organic content of the medium,...

13. DISPOSAL CONSIDERATIONS

13.1. Waste from residues / unused products

- In accordance with local and national regulations.
- Where possible recycling is preferred to disposal or incineration.
- Use an FeCl₃ solution to precipitate FeS.
- Filtrate the product and send the cake to a landfill for industrial waste.

13.2. Packaging treatment

- The empty and clean containers are to be reused in conformity with regulations.
- Uncleaned empty packaging
- Dispose of as unused product.

14. TRANSPORT INFORMATION

IATA-DGR

UN number	UN 1849
Class	8
Packing group	II
ICAO-Labels	8 - Corrosive
Remarks	Environmentally hazardous
Proper shipping name:	SODIUM SULPHIDE HYDRATED

IMDG

UN number	UN 1849
Class	8
Packing group	II
IMDG-Labels	8 - Corrosive
EmS	F-A S-B
Remarks	Marine pollutant
Proper shipping name:	SODIUM SULPHIDE HYDRATED

15. REGULATORY INFORMATION
15.1. Inventory Information

Australia. Inventory of Chemical Substances (AICS)	: -	yes (Anhydrous form).
Korea. Existing Chemicals Inventory (KECI (KR))	: -	yes (Anhydrous form).
EU list of existing chemical substances (EINECS)	: -	yes (Anhydrous form).
Japan. Inventory of Existing & New Chemical Substances (ENCS)	: -	yes (Anhydrous form).
Inventory of Existing Chemical Substances (China) (IECS)	: -	yes (Anhydrous form).
Philippine. Inventory of Chemicals and Chemical Substances (PICCS)	: -	yes (Anhydrous form).
New Zealand. Inventory of Chemicals (NZIOC)	: -	yes (Anhydrous form).

15.2. Other regulations
15.3. Classification and labelling
Canada. Canadian Environmental Protection Act (CEPA). WHMIS Ingredient Disclosure List (Can. Gaz., Part II, Vol. 122, No. 2)

- D1A - Very Toxic Material Causing Immediate and Serious Toxic Effects
- E - Corrosive Material

Remarks: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

EC Label - According to Regulation (EC) 1272/2008, as amended

Name(s) on label

Hazardous components : Disodium sulfide (hydrate)

Signal word

Danger

Hazard pictograms



Hazard statements

- | | | |
|--------|---|--|
| H290 | - | May be corrosive to metals. |
| H301 | - | Toxic if swallowed. |
| H314 | - | Causes severe skin burns and eye damage. |
| H400 | - | Very toxic to aquatic life. |
| EUH031 | - | Contact with acids liberates toxic gas. |
| EUH071 | - | Corrosive to the respiratory tract. |

Precautionary statements

- | | | | |
|-------------------|---------------|---|---|
| Prevention | P273 | - | Avoid release to the environment. |
| | P280 | - | Wear protective gloves/ protective clothing / eye protection / face protection. |
| Response | P302 + P352 | - | IF ON SKIN: Wash with plenty of soap and water. |
| | P305 + P351 + | - | IF IN EYES: Rinse cautiously with water for several |
| | P338 | | minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |

16. OTHER INFORMATION

Information contained herein is provided in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.