64420 Sodium Polysulfide

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1. Identification of the Substance/Mixture and of the Company/Undertaking

1. 1. Product Identifier

Product Name: *Sodium Polysulfide*

Article No.: *64420*

UFI: *--*

1. 2. Relevant identified Uses of the Substance or Mixture and Uses advised against

Identified uses:

Additive in the leather and cellulose production.
Reducing agent used for textile coloring
Flocculant in waste water disposal
Removal of NOx in waste gases
Binding of heavy metals in pipelines and disposal installations
Basic substance for the manufacture of different chemicals (i.e. sulphur dyes)
Inhibitor for facilities and pipelines to increase the chemical resistance
Ore flotation

Uses advised against:

1. 3. Details of the Supplier of the Safety Data Sheet (Producer/Importer)

Company: *Kremer Pigmente GmbH & Co. KG*

Address: *Hauptstr. 41-47, 88317 Aichstetten, Germany*

Tel./Fax.: *Tel +49 7565 914480, Fax +49 7565 1606*

Internet: *www.kremer-pigmente.com*

EMail: *info@kremer-pigmente.com*

Importer: *--*

1. 4. Emergency No.

Emergency No.: *+49 7565 914480 (Mon-Fri 8:00 - 17:00)*

1. 4. 2 Poison Center:

2. Hazards Identification

2. 1. Classification of the Substance or Mixture

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

Corrosive to metals, hazard category 1
Acute toxicity (oral), hazard category 3
Acute toxicity (dermal), hazard category 3
Skin corrosion, hazard category 1B
Serious eye damage, hazard category 1
Hazardous to the aquatic environment, acute hazard category 1

H290	May be corrosive to metals.
Cat.: 1	
H301	Toxic if swallowed.
Cat.: 3	
H311	Toxic in contact with skin.
Cat.: 3	

Causes severe skin burns and eye damage.

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H314	
Cat.: 1	
H400	Very toxic to aquatic life.
Cat.: 1	

Possible Environmental Effects:

2. 2. Label Elements

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

Hazard designation:

GHS05-2

GHS06

GHS09

Signal word:

Danger

Hazard designation:

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
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.

Safety designation:

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/ clothing/ eye/ 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 victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses and continue rinsing.

Hazardous components for labelling:

2. 3. Other Hazards

Although it is stable at room temperature, it hydrolyzes with humidity and can react with the carbon dioxide of the air forming a very toxic and flammable hydrogen sulfide gas.
Causes chemical burns of skin, eyes and mucous membrane.

3.

3. 1. Substance

3. 2. Mixture

Chemical Characterization:

Information on Components / Hazardous Ingredients:

Sodium sulfide (H290-301-314-400); REACH Reg. No. 01-2119513694-38-0000	60-62 %	CAS-Nr: 1313-82-2 EINECS-Nr: 215-211-5 EC-Nr: 016-009-00-8

Additional information:

4. First Aid Measures

4. 1. Description of the First Aid Measures

General information:

Immediately get medical help.
Remove contaminated clothes.

After inhalation:

Supply fresh air. Consult physician if symptoms persist.

After skin contact:

Remove contaminated clothing immediately. Wash off immediately with plenty of water and soap.
If symptoms persist, consult a physician.
Neutralize with a diluted hydrogen peroxide solution.

After eye contact:

Rinse open eye for several minutes under running water. Should irritation continue, seek medical advice.

After ingestion:

Immediately get medical help.

4. 2. Most important Symptoms and Effects, both Acute and Delayed

Symptoms:

Asthmatic symptoms, drowsiness, unconsciousness.
Risk of pulmonary edema.

Effects:

4. 3. Indication of any Immediate Medical Attention and special Treatment needed

Treatment:

If swallowed, gastric irrigation with added, activated charcoal. Symptoms may be delayed.
Subsequent observation for pneumonia and pulmonary edema.
Treat symptomatically.

5. Fire-Fighting Measures

5. 1. Extinguishing Media

Suitable extinguishing media:

Product itself does not burn.
Use extinguishing media for surrounding fire.

Unsuitable extinguishing media:

Water
Carbon dioxide (CO2)

5. 2. Special Hazards arising from the Substance or Mixture

Special hazards:

When heated or in case of fire: formation of sulfur oxides (SOx).

5. 3. Advice for Firefighters

Protective equipment:

Wear self-contained respiratory protective device and protective clothing.

Further information:

Do not inhale explosion and fire gases.
Collect contaminated extinguishing water and debris separately; avoid contamination of sewage system.
Keep away from heat, sparks and flames.

6. Accidential Release Measures

6. 1. Personal Precautions, Protective Equipment and Emergency Procedures

Personal precautions:

Wear appropriate protective equipment. Keep spectators away.
Use respiratory protection.
Avoid formation of dust.
Avoid contact with eyes and skin.

6. 2. Environmental Precautions

Environmental precautions:

Prevent contamination of soils, drains and surface water.
If product is discarded into sewage system it has to be diluted with large amounts of water.

6. 3. Methods and Material for Containment and Cleaning Up

Methods and material:

Use neutralizing agents.
Take up mechanically and collect in suitable containers for disposal. Avoid dust formation.
Avoid dust formation.
Remove remains with copious amounts of water or with a diluted solution of hydrogen peroxide.

6. 4. Reference to other Sections

For information for safe handling see Section 7.
See Section 13 for information on disposal.

7. Handling and Storage

7. 1. Precautions for Safe Handling

Instructions on safe handling:

Provide adequate ventilation.

Avoid formation of dust.

Hygienic measures:

Avoid contact with skin, eyes and clothing. Do not inhale dust.

7. 2. Conditions for Safe Storage, including any Incompatibilities

Storage conditions:

Store in tightly sealed containers in a cool and well ventilated location.
Keep away from ignitable sources, heat and fire.
Accesible for authorized persons only.
Keep product shut away or kept in a manner so as to ensure that only qualified persons may have access.

Requirements for storage areas and containers:

Store in a room with a alkaline-proof floor.
Suitable container material: stainless steel L304, L316, rubber, polyethylene, polypropylene, PVC, glass.
Unsuitable container material: aluminium.

Information on fire and explosion protection:

Do not store together with: acids and heat sources.

Storage class:

6.1 D; Non combustible, acute toxic cat. 3 / toxic products (TRGS 510)

Further Information:

7. 3. Specific End Use(s)

Further information:

8. Exposure Controls/Personal Protection

8. 1. Parameters to be Controlled

Parameters to be controlled (DE):

No occupational exposure limits known.

Parameters to be controlled:

Derived No-Effect Level (DNEL):

Sodium sulfide (1313-82-2): 13.84 mg/m3 (consumer, inhalation, long-term exposure- systemic effects)
1.6 mg/m3 (consumer, inhalation, long-term exposure - local effects)

Predicted No-Effect Concentration (PNEC):

Fresh water / Sea water: 0.00027 mg/l
Fresh water sediment / Sea water sediment: 0.0176 mg/kg
Sewage treatment system (STP): 0.016 mg/l

Additional Information:

8. 2. Exposure Controls

Technical protective measures:

No further measures, see Section 7.

Facilities storing or utilizing this material should be equipped with an eyewash and shower facility.

Personal Protection

General protective measures:

Remove contaminated clothing immediately.

Keep away from foodstuffs and drinks. Do not eat, drink or smoke during work. Wash hands before breaks and at the end of work.

Respiratory protection:

Respirator mask required if ventilation is insufficient. Wear filter respirator in case of short-term or low exposure, and wear a self-contained breathing apparatus in case of long-term or higher exposure.

Recommended: filter P2

Hand protection:

Protective gloves

Protective glove material:

Nitrile rubber, polyvinyl chloride (> 480 min, 0.5 mm)

Eye protection:

Tightly fitting safety goggles (EN 166).

Body protection:

Protective clothing.

Environmental precautions:

Take appropriate risk management measures to avoid the release of sulfides into the environment during the production or application of sodium sulfide.

9. Physical and Chemical Properties

9. 1. Information on Basic Physical and Chemical Properties

Form:	*solid*
Color:	*yellow*
Odor:	*like rotten eggs*
Odor threshold:	*no information available*
pH-Value:	*not applicable*
Melting temperature:	*ca. 85°C*
Boiling temperature:	*not determined*
Flash point:	*not applicable*
Evaporation rate:	*No information available.*

Flammability (solid, gas):	*not flammable*
Upper explosion limit:	*no information available*
Lower explosion limit:	*no information available*
Vapor pressure:	*not applicable*
Vapor density:	*No information available.*
Density:	*1.5 g/cm3*
Solubility in water:	*178 g/l (20°C; OECD 105)*
Coefficient of variation (n-Octanol/Water):	*not determined*
Auto-ignition temperature:	*Product is not auto-ignitable.*
Decomposition temperature:	*No data available.*
Viscosity, dynamic:	*not applicable*
Explosive properties:	*Product does not present an explosion hazard.* *The risk of dust explosion is generally possible with organic solids.*
Oxidizing properties:	*not oxidizing*
Bulk density:	*600 - 750 kg/m3*

9. 2. Further Information

Solubility in solvents:	
Viscosity, kinematic:	
Burning class:	
Solvent content:	
Solid content:	
Particle size:	
Other information:	

10. Stability and Reactivity

10.1. Reactivity

Sodium sulfide can form gaseous hydrogen sulfide under acidic conditions.

10.2. Chemical Stability

No decomposition if used according to specifications (dry storage).
May be corrosive to metals.

10.3. Possibility of Hazardous Reactions

Reacts with acids: development of hydrogen sulfide.
Reactions with light metals in presence with humidity under development of hydrogen.
Reacts with oxidants, carbon dioxide.

10.4. Conditions to Avoid

Conditions to avoid:

Do not overheat.
Avoid humidity.

Thermal decomposition:

10.5. Imcompatible Materials

Strong acids, oxidizing agents, carbon dioxide.
Corrodes cement, aluminium, copper and zinc.

10.6. Hazardous Decomposition Products

Sulfur dioxide, hydrogen sulfide gas.

10.7. Further Information

11. Toxicological Information

11. 1. Information on Hazard Classes as defined in Regulation (EC) No. 1272/2008

Acute Toxicity

LD50, oral: *246 mg/kg (rat; OECD 401)*
Sodium sulfide is acute toxic when orally intaken.

LD50, dermal: *< 340 mg/kg (rabbit)*

LC50, inhalation:

Primary effects

Irritant effect on skin:

Causes chemical burns.
Repeated skin contact can cause dry or chapped skin.

Irritant effect on eyes:

Causes severe chemical burns.

Inhalation:

No information available.

Ingestion:

Harmful. Can cause chemical burns in mouth, throat and stomach.
Risk of perforation of esophagus and stomach.

Sensitization:

No sensitizing effects known.

Mutagenicity:

No mutagenic effects known.

Reproductive toxicity:

No negative effects known.

Carcinogenicity:

This product is not considered to be a carcinogen by IARC,ACGIH, NTP or OSHA.

Teratogenicity:

Did not show any teratogenic effects in animal studies (IUCLID).

Specific target organ toxicity (STOT):

Single exposure: no organospecific toxicity expected.

Repeated exposure: no organospecific toxicity expected.

Aspiration hazard:

No risk of aspiration.

11. 2. Information on other Hazards

Endocrine Disrupting Properties: no information available.

12. Ecological Information

12. 1. Aquatic Toxicity

After the release to water, NaHS ist hydrolyzed (balance between S2, HS and H2S) and/or oxidized.

The toxicity of NaHS is mainly based on the toxicity of H2S, which is the most toxic sulfur compound formed after the decomposition of NaHS, especially at a low pH level, low oxygen content and in strong organic aquatic environment.

The released sulfides are oxidized to sulfates in an oxygen rich enviroment. In this case the toxicity data of sulfates should be used, such as Na2SO4.

LC50 (fresh water fish): 0.0027 mg H2S/l (96h; Puntius gonionotus); results based on Na2S.9H20; OECD 203)

EC10/LC10 or NOEC (Algae): 0.77 mg S2/l, which corresponds to 0.041 mg H2S/l (4h; (Skeletonema costatum); results based on Na2S.9H2O)

Fish toxicity:

Sodium sulfide: LC50: 0.0027-7969 mg/l (96h, Puntius gonionotus; OECD 203); NOEC: 0.0092 mg/l (28d, Lepomis macrochirus)

Daphnia toxicity:

Sodium sulfide: EC50: 2083-3080 mg/l (48h, Ceriodaphnia dubia)

Bacteria toxicity:

no information available

Algae toxicity:

No information available.

12. 2. Persistency and Degradability

A release of Na2S and NaHS into air is not expected due to their low vapor pressure. Should, however, H2S be formed, this can be released to air. In the atmosphere, sulfur compounds such H2S are oxidized to SO2 and further to sulfate compounds. With the exception of water saturated and/or organic soils, a relatively fast oxidation of the released sulfides is expected.

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12. 3. Bioaccumulation

The sulfide intaken by the organisms apparently oxidizes to the less harmful thiosulfate. The studies available show that sulfide does not have the potential for bioaccumulation.

12. 4. Mobility

Na2S is not available as such in the environment, as is it either hydrolyzed or oxidized, depending on the environment. The hydrolysis products (HS- and S2) and oxidation products (e.g. sulfate) do not have an adsorption potential due their negative charge. The third hydrolysis product, H2S, can be absorbed to a certain extent by soil and sediment particles.

12. 5. Results of PBT- und vPvP Assessment

Not classified as PBT substance / Not classified as a vPvB substance.

12. 6. Endocrine Disrupting Properties

This product does not contain components considered to have endocrine disrupting properties.

12. 7. Other Adverse Effects

Water hazard class:

3, hazardous
Do not let product contaminate ground water, waterways or sewage system.
Danger to drinking water even if small quantities leak into the ground.

Behaviour in sewage systems:

Further ecological effects:

AOX Value:

13. Disposal Considerations

13. 1. Waste Treatment Methods

Product:

Do not empty into drains. Avoid release into the environment.
Disposal in accordance with local regulations.

European Waste Code (EWC):

Uncleaned packaging:

This material and its containter must be disposed of as hazardous waste.
Contaminated packaging must be treated like the substance.

Waste Code No.:

14. Transport Information

14. 1. UN Number

ADR, IMDG, IATA *1849*

14. 2. UN Proper Shipping Name

ADR/RID: *NATRIUMSULFID, HYDATISIERT*

IMDG/IATA: *SODIUM SULPHIDE, HYDRATED*

14. 3. Transport Hazard Classes

ADR Class:	*8*
Hazard no.:	*8*
Classification code:	*C6*
Tunnel restriction code:	*E*
IMDG Class (sea):	*8*
Hazard no.:	*8*
EmS No.:	*F-A, S-B*
IATA Class:	*8*
Hazard no.:	*8*

14. 4. Packaging Group

ADR/RID:	*II*
IMDG:	*II*
IATA:	*II*

14. 5. Environmental Hazards

Labelling according 5.2.1.8 ADR/RID: fish and tree
Labelling according 5.2.1.6.3 IMDG: fish and tree
Classification as environmentally hazardous according 2.9.3 IMDG: yes
Labelled with "P" according 2.10 IMDG: yes

14. 6. Special Precautions for User

none known

14. 7. Maritime Transport in Bulk according to IMO Instruments

14. 8. Further Information

15. Regulatory Information

15. 1. Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

Water hazard class:

3, very hazardous for water (German Regulation; Self-assessment)

Local regulations on chemical accidents:

Seveso III:
Category E1: Hazardous to the aquatic environment
Acute toxic (H2): Amount 1: 50 t; Amount 2: 200 t

Employment restrictions:

The employment restrictions for young workers in accordance with the Youth Employment Protection Law (§ 22 JArbSchG) are to be observed.
The employment restrictions for expectant and nursing mothers are to be observed (§§11 and 12 MuSchRiV).

Restriction and prohibition of application:

The product underlies the sales restrictions of the Chemical

Prohibition Ordinance.

Technical instructions on air quality:

15. 2. Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out for this product.

15. 3. Further Information

Listed in the following inventories:
EINECS (215-211-5), TSCA (US), AICS (AUS), DSL (CA), ENCS (JP), KECI (KR), PICCS (PH), IECS (CN), NZIoC (NZ)
RoHS Directive 2011/65/EC on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHs): not listed.
Regulation (EC) 273/2004, On Drug Precursors, Category 3: None of the ingredients is listed.
Regulation (EC) No. 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors: not forbidden and/or not restricted

16. Other Information

This product should be stored, handled and used in accordance with good hygiene practices and in conformity with any legal regulations. This information contained herein is based on the present state of knowledge and is intended to describe our product from the point of view of safety requirements. It should be therefore not be construed as guaranteeing specific properties.