



Chemical Products Corporation  
**SAFETY DATA SHEET**

SDS No. 49A

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Approval date February 15, 2023

**1. PRODUCT IDENTIFIER**

Sodium sulfide, hydrated

**1.1 Trade Name: Sodium Sulfide Flake 60-62%**

Sodium Sulfide, hydrated with not less than 30% water

SYNONYMS: Sodium Sulphide Hydrated; Disodium Sulfide hydrate.

Molecular formula -  $\text{Na}_2\text{S}\cdot x\text{H}_2\text{O}$ ;  $x \geq 2.6$

CAS No. 27610-45-3

**1.2 Recommended industrial uses:**

- Precipitation of metals from solution
- Waste and wastewater treatment
- De-hairing agent in leather processing
- Pulp and paper manufacture
- Chemical and textile industrial processes

Industrial uses advised against: None.

**1.3 Supplier of this SDS:**

Chemical Products Corporation  
102 Old Mill Road SE  
Cartersville, Georgia 30120-4127  
Telephone: 1-770-382-2144

**1.4 EMERGENCY PHONE NUMBER: CHEMTREC, 800-424-9300**

(24 hours every day)

**2. HAZARD IDENTIFICATION**

**2.1 Classification in accordance with paragraph (d) of §1910.1200**

Acute toxicity, Oral (Category 3), H301

Skin Corrosion (Category 1B), H314

Causes serious eye damage (Category 1), H318

Substance or Mixture Corrosive to Metals (Category 1), H290

**2.2 Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200.**



Signal Word **DANGER**

**CAUSES SEVERE SKIN BURNS AND EYE DAMAGE**



FROM NATURE'S MINERALS TO PRODUCTS FOR OUR FUTURE

Sodium Sulfide Flake

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## Hazard Statements

- H290: May be corrosive to metals.
- H301: Toxic if swallowed.
- H314: Causes severe skin burns and eye damage.
- H318: Causes serious eye damage

## Precautionary Statements

### Prevention

- P234 Keep only in original packaging.
- P260 Do not breathe dusts or mists.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

### Response

- P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
- 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.
- P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
- P363 Wash contaminated clothing before reuse.
- P390 Absorb spillage to prevent material damage.

## 2.3 Other hazards not otherwise classified that have been identified during the classification process

- Contact with acids liberates toxic gas (Hydrogen Sulfide).
- Very toxic to aquatic life

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## 3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Common Name/Synonyms</u>	<u>CAS#</u>	<u>Concentration</u>
Disodium sulfide	Sodium sulfide	1313-82-2	ca. 61%
Sodium hydrogensulfide	Sodium hydrosulfide	16721-80-5	ca. 4%
Water	Water	7732-18-5	ca. 32%
Carbonic acid sodium salt	Sodium carbonate	497-19-8	ca. 1-2%
Thiosulfuric acid (H <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ), sodium salt	Sodium thiosulfate	7772-98-7	ca. 1-2%

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## 4. FIRST AID MEASURES

### 4.1 Description of necessary first-aid measures

In case of 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.

In case of 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 center immediately. Wash contaminated clothing before re-use.

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

In case of ingestion - Call a physician or poison control center 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.

### 4.2 Most important symptoms and effects, both acute and delayed

In case of inhalation – dust is corrosive to mucus membranes.

Effects – dust will cause painful burns to the respiratory tract.

In case of skin contact - Redness - Swelling of tissue – Painful burns.

Effects - Corrosive

In case of eye contact - Redness - Lachrymation - Swelling of tissue – Painful burns.

Effects - May cause irreversible eye damage. - May cause blindness.

In case of ingestion - Nausea - Abdominal pain - Bloody vomiting - Diarrhea -

Suffocation - Cough - Severe shortness of breath.

Effects - severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

### 4.3 Indication of any immediate medical attention and special treatment needed, if necessary

- This product is highly alkaline and corrosive to mucus membranes. Causes painful burns.

Notes to physician - Take victim immediately to hospital –  
Medical supervision for minimum 48 hours.

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## 5. FIRE FIGHTING MEASURES

**General Hazard:** POISON, FLAMMABLE HYDROGEN SULFIDE GAS WILL BE EVOLVED FROM THIS PRODUCT ON EXPOSURE TO ACID. If this product loses water of hydration and burns, toxic sulfur oxide gases will be produced.

Water used to fight a fire may dissolve this product to become highly alkaline and corrosive to skin and eyes.

### **5.1 Suitable (and unsuitable) extinguishing media.**

- Suitable extinguishing media: Foam, powder
- Unsuitable extinguishing media: Water, Carbon dioxide (CO<sub>2</sub>)

### **5.2 Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).**

- If this product is involved in a fire, toxic sulfur oxide gases may be produced.
- Poison, flammable hydrogen sulfide gas will be evolved from this product on exposure to acid.
- This product may melt and become a flammable liquid.

### **5.3 Special protective equipment and precautions for fire-fighters.**

- 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.
- Cool containers/tanks with water spray.
- Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **6. ACCIDENTAL RELEASE MEASURES**

### **6.1 Personal precautions, protective equipment and emergency procedures**

- Advice for emergency responders - Isolate the area. Wear self-contained breathing apparatus and protective suit.
- Advice for non-emergency personnel - Prevent further leakage or spillage if safe to do so. Sweep up to prevent slipping hazard. Avoid dust formation.
- Discharge into the environment must be avoided. Do not flush into surface water or sanitary sewer system.

### **6.2 Methods and materials for containment and cleaning up**

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

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## **7. HANDLING AND STORAGE**

### **7.1 Precautions for safe handling**

- Keep container tightly closed in a dry and well-ventilated place.
- Ensure adequate ventilation.
- Do not store near acids.
- Keep away from heat. Product becomes a highly alkaline, corrosive liquid above about 46 °C (dissolves in its water of hydration).
- Provide 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.



## 7.2 Conditions for safe storage, including any incompatibilities

- Store in original container.
- Keep in a well-ventilated place.
- Keep in a dry place. Product is sensitive to moisture - hygroscopic.
- Keep in properly labeled containers.
- Keep container closed.
- Keep away from heat.
- Avoid dust formation.
- **Keep away from incompatible products – acids and strong oxidizers**

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Value (TLV)

No data available for this product.

### 8.2 Appropriate engineering controls.

- Adequate ventilation is required to remove any dust which may be present. Dust is toxic and corrosive. Safety shower and eye-wash fountain should always be available in the work area.

### 8.3 Individual protection measures, such as personal protective equipment.

- Use a NIOSH-approved dust mask if dust is present. Cover exposed skin areas and wear general-purpose gloves. Wear safety glasses. Use chemical goggles if dust is present or product may enter eyes. Use self-contained breathing apparatus or supplied-air respirator if the PEL for hydrogen sulfide might be exceeded.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.): Solid yellow flakes.

Odor: Slight "rotten egg" odor; more pronounced if damp.

Odor Threshold: No data available.

PH: 11.2 for a 1 % aqueous solution; 12.1 for a saturated aqueous solution.

Melting point/Freezing point: 111-118 °F (44-48 °C)

Initial boiling point and boiling range: No data available.

Flash point: No data available.

Evaporation rate: No data available.

Flammability (solid, gas): No data available. Not flammable or pyrophoric.

Upper/lower flammability or explosive limits: No data available. Not explosive.

Vapor pressure: No data available.

Vapor density: No data available.

Relative density – Specific Gravity: about 1.55 at 20 °C (68 °F).

Solubility: water soluble - 548 g/l at 68 °F (20 °C).  
Partition coefficient: n-octanol/water: No data available.  
Auto-ignition temperature: No data available.  
Decomposition temperatures: No data available.  
Viscosity: No data available.

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

- Reacts with acids to release toxic hydrogen sulfide gas. May react with strong oxidizing agents to release toxic sulfur dioxide gas.
- Corrosive to metals.

### 10.2 Chemical Stability

- Stable under recommended storage conditions.

### 10.3 Possibility of Hazardous Reactions

- Corrosive in contact with metals. Contact with acids liberates toxic gas.

### 10.4 Conditions to avoid (e.g., static discharge, shock, or vibration)

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

### 10.5 Incompatible materials

- No data available.

### 10.6 Hazardous decomposition products

- Hazardous Sulfur oxides decomposition products formed under fire conditions.
  - Other decomposition products - No data available
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## 11. TOXICOLOGICAL INFORMATION

### **11.1 Information on the likely routes of exposure** (inhalation, ingestion, skin and eye contact)

- Most likely route of exposure to the relatively large solid flakes is skin contact.

### **11.2 Symptoms related to the physical, chemical and toxicological characteristics**

This product is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Painful chemical burns result from ingestion, inhalation, or skin or eye contact.

### **11.3 Delayed and immediate effects and also chronic effects from short- and long-term exposure**

- Immediate effects are corrosion/irritation.
- Specific target organ toxicity - STOT  
STOT-single exposure - not classified as specific target organ toxicant, single exposure according to GHS criteria.  
STOT-repeated exposure - not classified as specific target organ toxicant, repeated exposure according to GHS criteria.
- Experience with human exposure: No data available

### **11.4 Numerical measures of toxicity** (such as acute toxicity estimates)

For sodium sulfide, CAS # 1313-82-2:

Dermal - LD<sub>50</sub> Rabbit < 340 mg/kg

Oral - LD<sub>50</sub> Rat 208 mg/kg

### **11.5 Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.**

- **IARC:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- **ACGIH:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- **NTP:** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- **OSHA:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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## **12. ECOLOGICAL INFORMATION**

### **12.1 Ecotoxicity**

#### **- Very toxic to aquatic life.**

Fish: LC50 - 96 h: 0.0027 mg/l

Test substance: Hydrogen sulfide (by analogy)

Crustaceans: Fresh water EC50 - 96 h : 0.02 mg/l

Salt water EC50 - 96 h : 0.032 mg/l

Test substance: Hydrogen sulfide (by analogy)



- Toxicity to aquatic plants  
EC50 - 4 h : 0.104 mg/l - Skeletonema costatum (marine diatom)  
Salt water  
Test substance: Hydrogen sulfide (by analogy)

### 12.2 Persistence and degradability

- No data available. Only the strength of this product contributes to its environmental toxicity. Dilution yields only naturally-occurring chemical species. Sulfide is part of the naturally-occurring sulfur cycle and is present throughout the lithosphere.

### 12.3 Bioaccumulative potential

- No data available. No appreciable bioconcentration is expected in the environment.

### 12.4 Mobility in soil

- No data available. Considerable solubility and mobility expected.

### 12.5 Other adverse effects

- No data available. Very toxic to aquatic organisms. Product fate is highly dependent on environmental conditions: pH, temperature, redox potential, mineral and organic content of the medium. Waters containing sulfide ions will be depleted of dissolved oxygen.

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## 13. DISPOSAL CONSIDERATIONS

- Any disposal practice must be in compliance with local, state, and federal laws and regulations.
- Where possible recycling is preferred to disposal or incineration.
- Reaction with excess ferric chloride solution precipitates sulfur and ferrous sulfide; filter cake could be sent to a landfill for industrial waste.

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## 14. TRANSPORT INFORMATION

D.O.T. Shipping Name.....: Sodium sulfide, hydrated

Technical Shipping Name.....: Sodium sulfide flakes – 60-62%

D.O.T. Hazard Class.....: 8 - Corrosive. Packing Group II.

U.N./N.A. Number.....: UN1849.

Product R.Q. (lbs).....: None





D.O.T. Label.....: CORROSIVE.  
D.O.T. Placard.....: CORROSIVE.  
Freight Class Bulk.....: Inorganic chemical.  
Freight Class Package.....: Inorganic chemical.  
Product Label.....: Sodium Sulfide Flakes – 60-62%

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG

UN number: 1849

Class:8 Packing group: II

Proper shipping name: Sodium sulfide, hydrated

Marine pollutant: No

IATA

UN number: 1849 Class:8 Packing group: II

Proper shipping name: Sodium sulfide, hydrated

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## 15. REGULATORY INFORMATION

OSHA Status: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200. It's GHS classification is: Corrosive to Metals, Category 1; Acute toxicity (oral), Category 3; Skin corrosion, Category 1B; and Serious eye damage, Category 1.

TSCA Status.....: Listed on TSCA Inventory as ACTIVE

CERCLA Reportable Quantity.....: No

SARA Title III:

Section 302: Extremely Hazardous Substances....: None.

Section 311/312: Hazard Categories:

Physical hazard - Corrosive to Metals

Health Hazards

- Acute toxicity

- Skin corrosion or irritation

- Serious eye damage or eye irritation



Section 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

RCRA Status: If discarded in its purchased form, this product should be expected to be a D003 reactive hazardous waste because of its sulfide content. Under RCRA, it is the responsibility of the product user to determine, at the time of disposal, whether a waste containing the product, or derived from the product, should be classified as a hazardous waste under 40 CFR 261.20-24.

## 16. OTHER INFORMATION

**NFPA Rating** (National Fire Protection Association):

- Health - 2** (Materials which on intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given)
- Fire - 1** (Materials which must be preheated before ignition can occur)
- Reactivity - 1** (Materials that are normally stable, but become explosive at elevated temperatures and pressure)
- Special - NA**

**Reason for Issue**..... : Review and reapproval.

**Prepared by**..... : Jerry A. Cook.

**Title**..... : Technical Director.

**Approval Date**..... : February 15, 2023.

**Supersedes Date**.....: February 8, 2019.

**MSDS Number**.....: 49A.

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**Disclaimer:** The information contained herein is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions; it does not represent any guarantee of the properties of the product. Chemical Products Corporation makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. The data on this sheet relates only to the specific material designated herein. Chemical Products Corporation assumes no legal responsibility for use or reliance upon these data.