

MATERIAL SAFETY DATA SHEET

1. PRODUCT IDENTIFIERNAME: **Sodium Hydrosulfide, 72% Flake**SYNONYMS: Sodium Hydrosulphide; Sodium Hydrogen Sulfide, Hydrated; Sodium Bisulfide Flake; Sodium Sulphydrate Flake; **Sodium Hydrosulfide with not less than 25% water of crystallization.**MANUFACTURER: Chemical Products Corporation (CPC)
P.O. Box 2470
102 Old Mill Road, S.E.
Cartersville, Georgia 30120-1692
Telephone: Day, 770-382-2144; Night, 770-382-2212

24-hour Emergency Phone Number: CHEMTREC 800-424-9300

2. INFORMATION ON INGREDIENTS

<u>COMPONENT</u>	<u>CAS #</u>	<u>EXPOSURE LIMITS</u>	<u>% BY WT</u>
Sodium Hydrosulfide	16721-80-5	No ACGIH TLV or OSHA PEL established for Sodium Hydrosulfide. For Hydrogen Sulfide gas: OSHA PEL - 20 ppm. ACGIH TLV-TWA - 10 ppm	70 - 74 %
Water	7732-18-5		26- 30 %

3. HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW: WARNING! CORROSIVE TO SKIN AND MUCOUS MEMBRANES. CAN CAUSE PERMANENT EYE INJURY. DUST CAUSES SEVERE RESPIRATORY TRACT IRRITATION. HARMFUL IF SWALLOWED. HARMFUL IF INHALED.**

Do not taste or swallow. Avoid breathing dust. Use only with adequate ventilation. Avoid skin contact. Wash thoroughly after handling.

CONTACT WITH ACID RELEASES POISONOUS AND FLAMMABLE HYDROGEN SULFIDE GAS.

POTENTIAL HEALTH EFFECTS: Chemical burns can result from contact with this material or with its dust. If hydrogen sulfide gas is present, acute exposure to it causes unconsciousness and paralysis of breathing muscles leading to death; lower exposure levels cause eye irritation, headache, and dizziness.

Routes of Entry: Ingestion, skin absorption, and inhalation.

Human Effects: High alkalinity makes this product corrosive to mucous membranes - chemical burns result from contact. Dust can cause irritation to the conjunctiva and cornea of the eye.

Acute Inhalation: Severe respiratory distress because of corrosivity. Hydrogen sulfide gas, produced if this product contacts acid, causes confusion, weakness of the extremities, unconsciousness, pulmonary edema, asphyxiation and central respiratory paralysis leading to death.

Chronic Inhalation: Extreme irritation to respiratory passages.

Acute Skin Contact: Painful chemical burns. Systemic poisoning by sulfide causes headache, nausea, dizziness, confusion, weakness of the extremities, and possible unconsciousness.

Chronic Skin Contact: Extreme irritation to skin.

Acute Eye Contact: Alkali burns to conjunctiva and cornea with possible irreversible destruction of tissue.

Chronic Eye Contact: Extreme irritation to the eyes caused by dust; can cause corneal opacity.

Acute Ingestion: Destruction of the lining of the esophagus and stomach. Rapid breathing, confusion, unconsciousness, paralysis of respiratory muscles leading to death.

Chronic Ingestion: Headache, nausea, dizziness, confusion, and painful alkali burns to the esophagus.

Carcinogenicity: NTP.....: Not listed. IARC.....Not listed OSHA.....Not Listed

Medical Conditions Aggravated by Exposure: None are known.

4. FIRST AID MEASURES

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Have victim drink as much milk or water as possible. Never give anything by mouth to an unconscious person.

If dust is inhaled, remove to fresh air. Get medical attention immediately and contact a poison control center.

For eye contact, flush eyes with large amounts of water for at least 15 minutes and get IMMEDIATE medical attention. For skin contact, wash with soap and water. Wash clothing before reuse.

Physician: Contact causes caustic burns. Treat ingestion as hydrogen sulfide gas poisoning in addition to caustic burns.

5. FIRE FIGHTING MEASURES

Flashpoint: Not applicable. This product does not burn readily.

Flammability: Hydrogen sulfide can collect in confined spaces above this product especially when it is not in sealed containers. Hydrogen sulfide forms flammable mixtures with air from about 4% by volume to about 45%.

Autoignition: Not applicable to this product, but hydrogen sulfide gas decomposition product has an autoignition temperature of 250 Deg. C.

General Hazard: Poison, flammable hydrogen sulfide gas will be evolved from this product on exposure to acid or excessive heat.

Fire Fighting Instructions: Firefighters should wear self-contained breathing apparatus. Do not use carbon dioxide fire extinguishers because toxic hydrogen sulfide gas will be liberated from this product.

Fire Fighting Equipment: Use water in flooding quantities. A heavy fog of water may be effective in knocking down vapors.

Hazardous Combustion Products: Poisonous sulfur dioxide gas will be generated if this product burns.

6. ACCIDENTAL RELEASE MEASURES

Small Spill: Avoid contact with water. Scoop up and store in sealed containers. Dispose of in accordance with local, state, or federal regulations.

Large Spill: Recover as much of the material as possible. Mix spilled material with dilute excess hydrogen peroxide to oxidize sulfide and eliminate danger of hydrogen sulfide evolution.

7. HANDLING AND STORAGE

Storage Temperature: Store in a cool place. This product will dissolve in its water of hydration at about 54°C (129°F) to become a highly alkaline, corrosive liquid.

Storage Pressure: Atmospheric.

General: Do not store near acids. Store in sealed containers - this product is hygroscopic and will absorb moisture from the air to become a highly alkaline, corrosive liquid.

-- Keep in a cool, well-ventilated place.

-- Keep away from heat and sources of ignition.

-- Do not enter tanks or other vessels that have contained this product unless fresh air breathing apparatus is used.

--Do not store in contact with copper, zinc, or aluminum.

--Preferred material of construction for storage tanks is stainless steel; however, carbon steel is acceptable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Adequate ventilation is required to remove the toxic and flammable dust and fumes which may be present. Safety shower and eyewash fountain should always be available in the work area.

Respiratory Protection: Use self-contained breathing apparatus or supplied-air respirator in confined areas where the PEL for hydrogen sulfide might be exceeded.

Skin Protection: Rubber suits and boots as needed to prevent contact.

Eye Protection: Chemical safety goggles and safety shield if potential for eye contact exists.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid.

Vapor Pressure: Not applicable.

Specific Gravity: About 1.45

Solubility in Water: Complete.

pH: Highly alkaline, about 12.5 for a diluted solution.

Boiling Point: About 165 Deg. C. (329 Deg. F.)

Melting Point: About 54 Deg. C. (129 Deg. F.)

Vapor Density: Not applicable.

Evaporation Rate: Not applicable.

Odor: Slight "Rotten egg" odor.

Appearance: Yellow solid flakes.

10. STABILITY AND REACTIVITY

Chemical Stability: CONTACT WITH ACIDS LIBERATES POISONOUS, FLAMMABLE HYDROGEN SULFIDE GAS. Mixing with strong oxidizers causes a violent reaction. Mixing with strong alkalis may form solid, hydrated sodium sulfide.

Incompatibility: Acids, strong oxidizers, and strong alkalies.

Hazardous Decomposition Products: High temperatures will decompose this product to form poisonous hydrogen sulfide gas.

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Eye: Corrosive due to product's alkalinity.

Skin: Corrosive to skin due to product's alkalinity. May be toxic when absorbed through the skin.

Ingestion: TOXIC - Human Oral LD₅₀ reported to be 50 mg/kg for Na₂S. Equivalent to 49 mg/kg for this product (based on sulfur content).

Inhalation: TOXIC - Hydrogen sulfide inhalation is assumed. Human LC₅₀ is 600 ppm for 30 minutes for hydrogen sulfide; equivalent to 1330 ppm respirable dust from this product.

Sub-chronic: Irritation to the conjunctiva and cornea of the eye from dust.

Chronic/Carcinogenic: Not a known carcinogen. Chronic acute exposures to dust may cause neurologic deficits like those in survivors of other severe asphyxiant poisonings.

Teratogenic: Not known.

Reproductive: Not known.

Mutagenic: Not known.

12. ECOLOGICAL INFORMATION

TOXICITY: Toxic to aquatic organisms. Only the strength of this product contributes to its environmental toxicity. Dilution yields only naturally-occurring chemical species. Hydrosulfide ion reacts with oxygen; waters containing hydrosulfide ions will not contain dissolved oxygen.

DISTRIBUTION: All components of this product are found naturally in all ecosystems.

CHEMICAL FATE: With dilution, the sulfide will be readily incorporated into the pre-existing natural sulfur cycle.

13. WASTE MANAGEMENT INFORMATION

Waste with a pH of 12.5 or above is a RCRA hazardous waste because of its corrosivity. Waste containing sulfide may be hazardous and may require disposal in an approved hazardous waste landfill. Sulfide can be oxidized with dilute hydrogen peroxide or any other oxidizing agent to non-hazardous sulfate; care should be taken as the reaction may be violent.

14. TRANSPORT INFORMATION

D.O.T. Shipping Name..... : Sodium hydrosulfide with not less than 25% water of crystallization.

Technical Shipping Name..... : Sodium hydrosulfide, hydrated.

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

U.N./N.A. Number..... : UN 2949

Product R.Q. (lbs)..... : 5000 lbs. of Sodium hydrosulfide;
6,750 lbs. of this product.

D.O.T. Label..... : CORROSIVE.

D.O.T. Placard..... : CORROSIVE.

Freight Class Bulk..... : Inorganic chemical.

Freight Class Package..... : Inorganic Chemical.

Product Label..... : Sodium Hydrosulfide, 72% Flake.

15. REGULATORY INFORMATION

OSHA Status..... : This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200. It is classified as toxic based on ingestion information and corrosive based on its alkalinity.

TSCA Status..... : Listed on TSCA Inventory.

CERCLA Reportable Quantity..... : 5000 lbs. of Sodium Hydrosulfide
6,750 lbs. of this product.

SARA Title III:

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

Section 311/312, Hazard Categories..... : Category 1 (Acute Hazard).

Section 313, Toxics Release Inventory..... : None.

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

16. OTHER INFORMATION

NFPA Rating (National Fire Protection Association):

Health -3 (Materials which on short exposure could cause serious temporary or residual injury).

Fire -1 (Materials which will burn in air when exposed to a temperature of 1500 Deg. F.)

Reactivity -1 (Materials which are normally stable but which can become unstable at elevated temperature and pressure).

Special - NA

Reason for Issue.....: Minor format revision.

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

Title..... : Technical Director.

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