

CHEMICAL PRODUCTS CORPORATION

GHS SAFETY DATA SHEET

SDS No. 501
GHS 05: Corrosive
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1. PRODUCT IDENTIFIER

NAME: **Sodium Sulfide Solution**

SYNONYMS: Sodium Sulphide Solution, Disodium Sulfide Solution

RECOMMENDED USE: For industrial use to precipitate metals from solution and manufacture other substances.

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. HAZARDS IDENTIFICATION



DANGER

CAUSES SEVERE BURNS TO EYES, DIGESTIVE TRACT, AND SKIN.

HIGHLY ALKALINE LIQUID – CAUSES SERIOUS EYE DAMAGE.

Chemical burns result from contact with liquid or mist.

TOXIC IF SWALLOWED. HARMFUL IF MIST IS INHALED.

HARMFUL TO AQUATIC LIFE.

CONTACT WITH ACID RELEASES POISONOUS AND FLAMMABLE HYDROGEN SULFIDE GAS.

Hydrogen sulfide gas exposure causes eye irritation, headache, and dizziness. Acute exposure to hydrogen sulfide gas causes unconsciousness and paralysis of breathing muscles leading to death.

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

3. INFORMATION ON INGREDIENTS

<u>COMPONENT</u>	<u>CAS #</u>	<u>EXPOSURE LIMITS</u>	<u>% BY WT</u>
Sodium Sulfide	1313-82-2	No ACGIH TLV or OSHA PEL established for Sodium Sulfide. For Hydrogen Sulfide gas: OSHA PEL - 20 ppm. ACGIH TLV-TWA - 10 ppm	ca 10 -12
Water	7732-18-5		ca 88 - 90

4. FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.
GET IMMEDIATE MEDICAL AID.

Skin: Immediately rinse skin with plenty of water for at least 15 minutes. Get medical attention if redness, burning, or irritation is present. Wash contaminated clothing before reuse.

Ingestion: Wash out mouth with water; have victim drink as much milk or water as possible. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical attention and contact a poison control center.

Inhalation of mist: Remove from exposure and move to fresh air immediately. Get immediate medical attention and contact a poison control center.

Notes to Physician: Contact causes caustic burns.

Treat ingestion as hydrogen sulfide gas poisoning in addition to caustic burns.

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5. FIRE FIGHTING MEASURES

Flashpoint: Non-flammable..

Flammability: Hydrogen sulfide may collect in confined spaces above the liquid. It forms flammable mixtures with air from about 4% vapor up to about 45%.

Autoignition: Not applicable.

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 the vapors from this product burn.

6. ACCIDENTAL RELEASE MEASURES

General: Avoid generating mist and keep this product away from acids. Use appropriate Personnel Protective Equipment (PPE). Spilled product is a RCRA hazardous waste.

Small Spill: Absorb in dirt, sawdust, fly ash or other inert absorbant. Scoop up and store in sealed containers. Dispose of in accordance with local, state, or federal regulations.

Large Spill: Dike to prevent entry into sewers or drains. Recover as much of the solution as possible. Mix solution with dilute excess hydrogen peroxide to oxidize sulfide and eliminate danger of hydrogen sulfide evolution.

7. HANDLING AND STORAGE

Storage Temperature: Not critical.

Storage Pressure: Atmospheric.

General: Put a vapor trap or scrubber on tank vent.

--Poison hydrogen sulfide gas can be present in the vapor space above sodium sulfide solution and in tanks which have contained this product. 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.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Adequate ventilation is required to remove the toxic and flammable vapors or mist 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 if the PEL for hydrogen sulfide might be exceeded.

Skin Protection: Rubber suits and boots as needed for protection from splashing.

Eye Protection: Chemical safety goggles and safety shield for protection from splashing.

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance:** Yellow to amber colored liquid.
- **Odor:** "Rotten egg" odor.
- **Odor threshold:** Not Known.
- **pH:** approximately 12.5 – HIGHLY ALKALINE
- **Melting point/freezing point:** about -5°C for this aqueous solution.
- **Initial boiling point and boiling range:** About 105°C increasing as water is evaporated
- **Flash point:** Not applicable.
- **Evaporation Rate:** Unknown
- **Upper/lower flammability or explosive limits:** Not known.
- **Vapor Pressure:** Not known.
- **Vapor Density:** Not known.
- **Relative density (Specific Gravity):** about 1.17 at 20°C
- **Solubility in Water:** Complete.
- **Partition coefficient: n-octanol/water:** Not known.
- **Auto-ignition temperature:** Not applicable.
- **Decomposition temperature:** Not known.
- **Viscosity:** Not known.

10. STABILITY AND REACTIVITY

Chemical Stability: Mixing with acids liberates poisonous hydrogen sulfide. Mixing with strong oxidizers causes a violent reaction. Mixing with strong alkalies may form solid, hydrated sodium sulfide.

Incompatibility: Acids, strong oxidizers, and strong alkalies.

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

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

- Most likely routes of exposure in an industrial setting are skin contact and eye contact (ingestion and inhalation of produced mist or hydrogen sulfide gas considered to be less likely).
 - Description of the delayed, immediate, or chronic effects from short- and long-term exposure.
 - Immediate chemical burns can result from eye contact or skin contact due to this product's alkalinity. May be toxic when absorbed through skin.
 - No delayed or chronic effects are known other than possible irritation to the conjunctiva and cornea of the eye from vapors. Chronic acute exposures to hydrogen sulfide may cause neurologic deficits like those in survivors of other severe asphyxiant poisonings.
 - Acute toxicity estimate
 - Human Oral LD_{LO} reported to be 50 mg/kg for Na₂S. Equivalent to about 450 mg/kg for this product.
 - For inhalation of mist, hydrogen sulfide inhalation is assumed.
 - Human LC_{LO} is 600 ppm for 30 minutes for hydrogen sulfide; equivalent to about 12,000 ppm of respirable mist from this product.
 - Description of the symptoms associated with exposure
 - Pain from chemical burns if this product is contacts eyes or skin.
 - Irritation to the eyes from contact with vapors (hydrogen sulfide) or mist and a "rotten egg" odor. NOTE: The sense of smell is rapidly lost upon exposure to high levels of hydrogen sulfide - do not rely upon smell to detect hydrogen sulfide exposure.
 - No chronic long term effects are known.
 - No component of this product is listed in the National Toxicology Program (NTP) Report on Carcinogens or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs or found to be a potential carcinogen by OSHA.
- Mutagenicity:** This product is expected to be non-mutagenic in Salmonella typhimurium with or without exogenous metabolic activation (S9).

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12. ECOLOGICAL INFORMATION

TOXICITY: Toxic to aquatic organisms. Sulfide ion reacts with oxygen; waters containing significant concentrations of sulfide ion 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 preexisting natural sulfur cycle.

13. WASTE MANAGEMENT INFORMATION

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 : Corrosive liquid, basic. inorganic n.o.s. (Sodium sulfide solution)

Technical Shipping Name..... : Sodium sulfide solution.

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

U.N./N.A. Number..... : UN 3266.

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 solution.

15. REGULATORY INFORMATION

TSCA Inventory (United States) - Listed on Inventory

CERCLA Reportable Quantity..... : None.

SARA Title III:

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

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

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

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RCRA Status.....: If discarded in its purchased form, this product could 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.

Other National Chemical Inventories

Mexico INSQ (INSQ) - Listed on Inventory, Anhydrous form

Canadian Domestic Substances List (DSL) - Listed on Inventory

New Zealand; Inventory of Chemical Substances - Listed on Inventory, Anhydrous form

Australia Inventory of Chemical Substances (AICS) - Listed on Inventory

Japan. CSCL - Inventory of Existing and New Chemical Substances - Listed on Inventory

Korea; Korean Existing Chemicals Inventory (KECI) - Listed on Inventory

China; Inventory of Existing Chemical Substances in China (IECSC) - Listed on Inventory

Philippines Inventory of Chemicals and Chemical Substances (PICCS) - Listed on Inventory

16. OTHER INFORMATION

National Fire Protection Association (NFPA) Ratings: This information is intended solely for the use of individuals trained in the NFPA system.

Health: 3

Flammability: 1

Reactivity: 1

Revision Indicator: This GHS Safety Data Sheet replaces Safety Data Sheet dated July 2014.

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