

GHS SAFETY DATA SHEET

1. Identification

Product Name: Ammonium Sulfide Solution 40-44%

Synonyms: Ammonium Bisulfide, Ammonium Hydrogen Sulfide, Ammonium Hydrosulfide, Ammonium Sulphydrate Solution, Diammonium Sulfide Solution

CAS Number: 12135-76-1

Product Use: Industrial use only for manufacture of substances, mining

Manufacturer:

Chemical Products Corporation

102 Old Mill Road SE, Cartersville, GA 30120

General Information: 770-382-2144

Transportation Emergency Number:

CHEMTREC: 800-424-9300

2. Hazards Identification

GHS Classification:

Health

Acute Toxicity -Oral - Category 3

Acute Toxicity-Inhalation - Category 3

Serious eye damage - Category 1

Skin Corrosion/Irritation - Category 1B

Corrosive to metals - Category 1

Specific Target Organ Toxicity (Single exposure)

Category 3 Target Organs – Respiratory System

Physical

Flammable Liquid - Category 2

GHS Label:

Symbols: flame, corrosion, health hazard



Signal Word **DANGER**

Hazard Statements

Toxic if swallowed
Toxic if inhaled
Causes severe skin burns and eye damage
Causes serious eye damage
Highly flammable liquid and vapor

Precautionary Statements

Prevention

Do not breathe mist/vapors/spray.
Wear protective chemical gloves/full-face shield.
Store in well-ventilated place. Keep cool.
Use only outdoors or in well-ventilated area.
Keep away from heat/sparks/open flames/hot surfaces/electrical ignition sources. Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilation/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
No smoking. Do not eat, drink or use tobacco when using this product.
Wash face, hands and any exposed skin thoroughly after handling

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing.
Rinse skin with water/shower
Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Fire

In case of fire: Use dry chemical or foam for extinction.

Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Contact with acids liberates toxic gas

3. Composition / Information on Ingredients

<u>COMPONENT</u>	<u>CAS #</u>	<u>EXPOSURE LIMITS</u>	<u>% BY WT</u>
Ammonium Sulfide	12135-76-1	No ACGIH TLV or OSHA PEL established for Ammonium Sulfide. For Hydrogen Sulfide gas: OSHA PEL - 20 ppm. ACGIH TLV-TWA - 10 ppm For Ammonia: OSHA PEL - 50 ppm. ACGIH TLV-TWA - 25 ppm	40 - 44 %
Water	7732-18-5		56 - 60 %

4. First Aid Measures

Symptoms:

Acute: **Severe inhalation hazard.** Product is alkaline and corrosive to skin and eyes.

Chronic: No known chronic effects.

Inhalation:

Nasal irritation, headache, dizziness, nausea, vomiting, loss of consciousness. If breathed in, move person into fresh air. If not breathing, give artificial respiration. Get immediate medical attention.

Skin:

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

Eye:

Rinse thoroughly with plenty of water for at least 15 minutes and get immediate medical attention. Continue rinsing eyes during transport to hospital.

If swallowed:

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Get immediate medical attention.

5. Fire Fighting Measures

Ammonium sulfide solutions do not support a continuous pooling liquid fire. The released vapors will flash off and then have to build again in concentration for an outside ignition source to re-ignite the vapors.

Suitable Extinguishing Media: Use dry chemical or foam to extinguish fire. Water may be ineffective but should be used to cool fire-exposed containers, structures and to protect personnel. Use water to dilute spills and to flush them away from sources of ignition.

Fire Fighting Procedures: Do not flush down sewers or other drainage systems. Exposed firefighters must wear NIOSH-approved positive pressure self-contained breathing apparatus with full-face mask and full protective clothing.

Unusual Fire and Explosion Hazards: Dangerous when exposed to heat or flame. Poison, flammable hydrogen sulfide gas and/or poison, flammable ammonia will be evolved from this product on exposure to heat, acid, or strong alkali. Containers may explode in heat of fire. Vapors may concentrate in confined areas.

Combustion Products: Irritating or toxic substances may be emitted upon thermal decomposition. Thermal decomposition products may include ammonia, hydrogen sulfide, nitrogen oxides, and sulfur oxides.

6. Accidental Release Measures

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. (Also see Section 8).

Wear respiratory protection for spills and leaks. Avoid breathing vapors or mist. Shut off ignition sources; no flares, smoking or flames in hazard area. Small spills: Take up with sand or other noncombustible absorbent material and place into containers for later disposal. Large spills: Dike far ahead of liquid spill for later disposal. Do not flush to sewer or waterways. Prevent release to the environment if possible.

7. Handling and Storage

Handling

Do not get in eyes, on skin or on clothing. Do not breathe vapors or mists. Keep container closed. Use only with adequate ventilation. Use good personal hygiene practices. Wash hands before eating, drinking, smoking. Remove contaminated clothing and clean before re-use.

Keep away from heat and flame.

Storage

Store in tightly closed containers in cool, dry, well-ventilated area away from heat, sources of ignition and incompatibles. Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Store at ambient or lower temperature. Store out of direct sunlight. Keep containers tightly closed and upright when not in use. Protect against physical damage.

Empty containers may contain toxic, flammable and explosive residue or vapors. Do not cut, grind, drill, or weld on or near containers unless precautions are taken against these hazards.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Appropriate engineering exposure controls

Handle in accordance with good industrial hygiene and safety practice. The use of local ventilation is recommended to control emissions near the source. Provide mechanical ventilation for confined spaces.

Personal Protective Equipment (PPE)

Eye Protection: Wear chemical safety goggles and face shield. Have eye-wash stations available where eye contact can occur.

Skin Protection: Avoid skin contact. Wear gloves impervious to conditions of use. Additional protection may be necessary to prevent skin contact including use of apron, face shield, boots or full body protection. A safety shower should be located in the work area. Recommended protective materials include nitrile rubber.

Respiratory Protection: Engineering controls are the preferred means for controlling chemical exposures. Respiratory protection may be needed for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA 29 CFR 1910.134.

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. Physical and Chemical Properties

Flash point: 22 °C (72 °F)

Lower flammability limit: 4 %(V)

Upper flammability limit: 46 %(V)

Boiling Point: about 40° C (1° F)

Appearance: Yellow, transparent liquid.

Vapor pressure: about 600 hPa (450 mmHg) at 20 °C (68 °F)

Specific Gravity: About 0.98

Solubility in Water: Complete.

pH: about 10.0

Melting Point: about -15° C (5° F).

Vapor Density: no data available.

Evaporation Rate: no data available.

Odor: Ammonia odor combined with "rotten egg" odor.

Odor Threshold: no data available

Auto-ignition temperature: no data available

Decomposition temperature: no data available

10. Stability and Reactivity

Stability/Incompatibility: Incompatible with strong oxidizers, strong bases and strong acids.

Hazardous Reactions/Decomposition Products:

Mixing with acids liberates poisonous hydrogen sulfide.

Mixing with strong alkalies liberates poisonous ammonia gas.

Mixing with strong oxidizers causes a rapid reaction which liberates heat. Thermal decomposition products include oxides of sulfur and nitrogen. Vapors may form explosive mixture with air.

Stable under recommended storage conditions.

Avoid heat, sparks, flames.

11. Toxicological Information

Signs and Symptoms of Overexposure: Eye and nasal irritation, headache, dizziness, nausea, vomiting, difficulty breathing, itching or burning of the skin.

Acute Effects:

Eye Contact: may cause severe damage to the cornea and conjunctiva.

Skin Contact: may cause reddening, blistering or burns. Harmful if absorbed through the skin. May cause allergic skin reaction.

Inhalation: may cause severe irritation with possible lung damage (pulmonary edema).

Ingestion: may cause severe gastrointestinal burns.

Target Organ Effects: May cause gastrointestinal (oral), respiratory tract, nervous system and blood effects

Carcinogenicity

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.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Additional Information

This product is extremely destructive to mucous membranes and tissue of the upper respiratory tract, eyes, and skin.

12. Ecological Information

Bioaccumulation is not expected to be significant. This product is readily biodegradable.

For mosquito fish (*Gambusia Affinis*), the 96 hour TLM in turbid water at 21° C has been reported to be 248 mg/l of ammonium sulfide – 620 mg/l of this product.

Only the strength of this product contributes to its environmental toxicity. Dilution yields only naturally-occurring chemical species.

CHEMICAL FATE: With dilution, both the ammonia and the sulfide are expected to be readily incorporated into the preexisting natural nitrogen cycle and sulfur cycle, respectively.

13. Disposal Considerations

As sold, this product, when discarded or disposed of, is a hazardous waste according to Federal regulations (40 CFR 261). It is listed as Hazardous Waste Number D003, classified as a characteristic reactive waste. The transportation, storage, treatment and disposal of this waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Disposal can occur only in properly permitted facilities. Refer to state and local requirements for any additional requirements, as these may be different from Federal laws and regulations. Chemical additions, processing or otherwise altering this material may make waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Contact a licensed professional waste disposal service to dispose of this material.

14. Transport Information

U.S. Department of Transportation (DOT)

Proper Shipping Name: Ammonium sulfide solution (Ammonium sulfide)

Hazard Class: 8 (6.1, 3)

UN/NA Number: UN2683

Packing Group: PG 2

Labels Required: Corrosive, Poison, Flammable Liquid

Reportable Quantity (RQ): about 240 lbs of this 40-44% solution (100 lbs of ammonium sulfide).

Marine pollutant: No

Poison Inhalation Hazard: No

IATA

UN number: 2683 **Class:** 8 (3, 6.1) **Packing group:** II

Proper shipping name: Ammonium sulphide solution (Ammonium sulphide)

15. Regulatory Information

U.S. Federal Regulations

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA):

The reportable quantity (RQ) for this 40-44% ammonium sulfide solution is about 240 pounds (100 pounds of ammonium sulfide). If appropriate, immediately report to the National Response Center (800/424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies.

Toxic Substances Control Act (TSCA): All components of this product are included on the TSCA inventory.

Superfund Amendments and Reauthorization Act (SARA) Title III Information:

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA Section 311/312 (40 CFR 370) Hazard Categories:

Immediate Hazard: X (Accute Health Hazard)

Delayed Hazard:

Fire Hazard: X

Pressure Hazard:

Reactivity Hazard:

SARA 313 Components

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

State Regulations

Massachusetts Right To Know Components

Ammonium sulfide CAS No. 12135-76-1

Pennsylvania Right To Know Components

Ammonium sulfide 12135-76-1

New Jersey Right To Know Components

Ammonium sulfide 12135-76-1

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

International Regulations

Canadian Environmental Protection Act: All of the components of this product are included on the Canadian Domestic Substances list (DSL).

European Inventory of Existing Chemicals (EINECS): All of the components of this product are included on EINECS.

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: 2

Reactivity: 1

Revision Indicator: This GHS Safety Data Sheet replaces Material Safety Data Sheet dated July 2011.

Disclaimer: The information contained herein is accurate to the best knowledge of Chemical Products Corporation. 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.

