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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Ammonium sulfide solution

Product Number : W205303

Brand : Aldrich

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

**1.4 Emergency telephone number**

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 3), H226

Skin corrosion (Category 1B), H314

Serious eye damage (Category 1), H318

Acute aquatic toxicity (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

Hazard statement(s)

H226

Flammable liquid and vapour.

H314

Causes severe skin burns and eye damage.

H400

Very toxic to aquatic life.

Precautionary statement(s)

P210

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233

Keep container tightly closed.

P240

Ground/bond container and receiving equipment.

P241

Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242

Use only non-sparking tools.

P243

Take precautionary measures against static discharge.

P264

Wash skin thoroughly after handling.

|                           |                                                                                                                                                                           |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P273                      | Avoid release to the environment.                                                                                                                                         |
| P280                      | Wear protective gloves/ protective clothing/ eye protection/ 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 + 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.                                                                                                                                  |
| P370 + P378               | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.                                                                                      |
| P391                      | Collect spillage.                                                                                                                                                         |
| P403 + P235               | Store in a well-ventilated place. Keep cool.                                                                                                                              |
| P405                      | Store locked up.                                                                                                                                                          |
| P501                      | Dispose of contents/ container to an approved waste disposal plant.                                                                                                       |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Stench.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

Formula :  $\text{HgN}_2\text{S}$   
Molecular weight : 68.14 g/mol

#### Hazardous components

| Component                |            | Classification                                                                   | Concentration  |
|--------------------------|------------|----------------------------------------------------------------------------------|----------------|
| <b>Ammonium sulphide</b> |            |                                                                                  |                |
| CAS-No.                  | 12135-76-1 | Flam. Sol. 2; Skin Corr. 1B;<br>Eye Dam. 1; Aquatic Acute 1;<br>H228, H314, H400 | >= 20 - < 30 % |
| EC-No.                   | 235-223-4  |                                                                                  |                |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

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

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. 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. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

**Suitable extinguishing media**  
Dry powder

### 5.2 Special hazards arising from the substance or mixture

No data available

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

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## 6. ACCIDENTAL RELEASE MEASURES

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

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.  
For personal protection see section 8.

### 6.2 Environmental precautions

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

### 6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water.

### 6.4 Reference to other sections

For disposal see section 13.

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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid inhalation of vapour or mist.  
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.  
For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Never allow product to get in contact with water during storage. Do not store near acids.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.  
Hazardous components without workplace control parameters

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## Personal protective equipment

### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### 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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |                                            |                                       |
|--------------------------------------------|---------------------------------------|
| a) Appearance                              | Form: clear, liquid<br>Colour: yellow |
| b) Odour                                   | Stench.                               |
| c) Odour Threshold                         | No data available                     |
| d) pH                                      | No data available                     |
| e) Melting point/freezing point            | No data available                     |
| f) Initial boiling point and boiling range | No data available                     |
| g) Flash point                             | 32.2 °C (90.0 °F) - closed cup        |
| h) Evaporation rate                        | No data available                     |
| i) Flammability (solid, gas)               | No data available                     |

|                                                 |                                                                 |
|-------------------------------------------------|-----------------------------------------------------------------|
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 46 %(V)<br>Lower explosion limit: 4 %(V) |
| k) Vapour pressure                              | 600 hPa (450 mmHg) at 20 °C (68 °F)                             |
| l) Vapour density                               | No data available                                               |
| m) Relative density                             | 0.997 g/cm3 at 25 °C (77 °F)                                    |
| n) Water solubility                             | No data available                                               |
| o) Partition coefficient: n-octanol/water       | No data available                                               |
| p) Auto-ignition temperature                    | No data available                                               |
| q) Decomposition temperature                    | No data available                                               |
| r) Viscosity                                    | No data available                                               |
| s) Explosive properties                         | No data available                                               |
| t) Oxidizing properties                         | No data available                                               |

## 9.2 Other safety information

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Vapours may form explosive mixture with air.

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Nitrogen oxides (NOx), Sulphur oxides

Other decomposition products - No data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available

Inhalation: No data available

Dermal: No data available

No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitisation

No data available

**Germ cell mutagenicity**

No data available

**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.

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

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**

RTECS: Not available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

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**13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods****Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 2683      Class: 8 (6.1, 3)      Packing group: II  
Proper shipping name: Ammonium sulfide solution  
Reportable Quantity (RQ): 500 lbs

Poison Inhalation Hazard: No

### IMDG

UN number: 2683      Class: 8 (3, 6.1)      Packing group: II      EMS-No: F-E, S-C  
Proper shipping name: AMMONIUM SULPHIDE SOLUTION  
Marine pollutant: yes

### IATA

UN number: 2683      Class: 8 (3, 6.1)      Packing group: II  
Proper shipping name: Ammonium sulphide solution

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## 15. REGULATORY INFORMATION

### SARA 302 Components

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

### SARA 313 Components

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.

### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard

### Massachusetts Right To Know Components

|                   | CAS-No.    | Revision Date |
|-------------------|------------|---------------|
| Ammonium sulphide | 12135-76-1 | 1993-04-24    |

### Pennsylvania Right To Know Components

|                   | CAS-No.    | Revision Date |
|-------------------|------------|---------------|
| Water             | 7732-18-5  |               |
| Ammonium sulphide | 12135-76-1 | 1993-04-24    |

### New Jersey Right To Know Components

|                   | CAS-No.    | Revision Date |
|-------------------|------------|---------------|
| Water             | 7732-18-5  |               |
| Ammonium sulphide | 12135-76-1 | 1993-04-24    |

### 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.

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## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

|               |                                          |
|---------------|------------------------------------------|
| Aquatic Acute | Acute aquatic toxicity                   |
| Eye Dam.      | Serious eye damage                       |
| Flam. Sol.    | Flammable solids                         |
| H226          | Flammable liquid and vapour.             |
| H228          | Flammable solid.                         |
| H314          | Causes severe skin burns and eye damage. |
| H318          | Causes serious eye damage.               |
| H400          | Very toxic to aquatic life.              |
| Skin Corr.    | Skin corrosion                           |

**HMIS Rating**

|                        |   |
|------------------------|---|
| Health hazard:         | 3 |
| Chronic Health Hazard: |   |
| Flammability:          | 3 |
| Physical Hazard        | 0 |

**NFPA Rating**

|                    |   |
|--------------------|---|
| Health hazard:     | 3 |
| Fire Hazard:       | 3 |
| Reactivity Hazard: | 0 |

**Further information**

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**Preparation Information**

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

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