1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name
   Ammonium sulfide solution
Product Code
   SC-214536

Recommended use of the chemical and restrictions on use
For research use only. Not intended for diagnostic or therapeutic use.

2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification
Flammable liquids
Category 3

Label elements
Signal word
   Warning
Hazard statements
   Flammable liquid and vapor

Precautionary Statements - Prevention
   Keep away from heat/sparks/open flames/hot surfaces. — No smoking
   Keep container tightly closed
   Ground/bond container and receiving equipment
   Use only non-sparking tools
   Take precautionary measures against static discharge
   Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
   IF exposed or concerned: Get medical advice/attention
   IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
   In case of fire: Use CO2, dry chemical, or foam for extinction
   Store in a well-ventilated place. Keep cool
   Dispose of contents/container to an approved waste disposal plant

Precautionary Statements - Storage
Precautionary Statements - Disposal

Hazards not otherwise classified (HNOC)
Hazards not otherwise classified (HNOC)
   Not applicable

Other Information
Unknown acute toxicity
   24% of the mixture consists of ingredient(s) of unknown toxicity.
3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS No | Molecular Weight | Formula |
-------|-----------------|---------|
12135-76-1 | 68.14 | 2NH₄•S |

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
<th>Oral LD₅₀</th>
<th>Dermal LD₅₀</th>
<th>Inhalation LC₅₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>70 - 90</td>
<td>&gt; 90 mL/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ammonium sulfide</td>
<td>12135-76-1</td>
<td>10 - 30</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

**General advice**

Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**Eye contact**

Wash with plenty of water.

**Skin Contact**

Wash off immediately with plenty of water.

**Inhalation**

Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

**Ingestion**

Never give anything by mouth to an unconscious person. Clean mouth with water.

**Self-protection of the first aider**

Remove all sources of ignition.

5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

Suitable Extinguishing Media: In case of fire: Use CO₂, dry chemical, or foam for extinction.

Unsuitable Extinguishing Media: DO NOT USE WATER.

**Specific hazards arising from the chemical**

Specific hazards arising from the chemical: No information available.


**Explosion data**

Sensitivity to Mechanical Impact: No information available.

Sensitivity to Static Discharge: No information available.

**Protective equipment and precautions for firefighters**

Protective equipment and precautions for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information.

Methods for containment and cleaning up
Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling
Advice on safe handling
Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded. Noxious vapor/odor.

Conditions for safe storage, including any incompatibilities
Storage Conditions
Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Store at room temperature.

Incompatible materials
Strong oxidizing agents. Water.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls
Engineering Controls
Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment
Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin and Body Protection
Wear protective gloves and protective clothing.

Respiratory protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations
When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES
Physical State: liquid
Appearance: No information available
Odor: No information available

**Property**                          **Values**
---                                ---
pH                                      No information available
Melting point/freezing point         No information available
Boiling point                        40 °C
Flash point                           32 °C CC (closed cup)
Density                                0.997 g/mL
Evaporation rate                      No information available
Upper flammability limits             46%
Lower flammability limit              4%
Vapor pressure                        450 mmHg
Vapor density                         No information available
Specific gravity                      No information available
Water solubility                      No information available
Solubility in other solvents         No information available
Partition coefficient                No information available
Autoignition temperature             No information available
Decomposition temperature            No information available
Kinematic viscosity                  No information available
Explosive properties                 No information available
Oxidizing properties                 No information available

10. STABILITY AND REACTIVITY

Reactivity                        Not applicable
Chemical stability                 Stable under recommended storage conditions.
Possibility of Hazardous Reactions None under normal processing.
Hazardous polymerization            No information available.
Conditions to avoid                 Heat, flames and sparks. Keep away from any possible contact with water, because of violent reaction and possible flash fire.
Incompatible materials              Strong oxidizing agents. Water.
Hazardous Decomposition Products    Hydrogen sulfide. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

Inhalation                        No data available.
Eye contact                       No data available.
Skin Contact                      No data available.
Ingestion                         No data available.

**Information on toxicological effects**

Symptoms                         No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

Chronic Toxicity                  No information available.

**Numerical measures of toxicity - Product Information**

Unknown acute toxicity            24% of the mixture consists of ingredient(s) of unknown toxicity

12. ECOLOGICAL INFORMATION
Ecotoxicity

May cause long lasting harmful effects to aquatic life.

24% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility
No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging
Do not reuse container.

US EPA Waste Number
D002

14. TRANSPORT INFORMATION

DOT
UN/ID no
UN2683
Hazard Class
8
Subsidiary class
6.1 3
Packing Group
II
Proper shipping name
Ammonium sulfide solution
Description
UN2683, Ammonium sulfide solution, 8 (6.1 3), II
Emergency Response Guide Number
132

IMDG
UN/ID no
UN2683
Hazard Class
8
Subsidiary hazard class
3 6.1
Packing Group
II
Proper shipping name
Ammonium sulphide solution
Description
UN2683, Ammonium sulphide solution, 8 (3 6.1), II, (32°C c.c.)
EmS-No
F-E, S-C

IATA
UN/ID no
UN2683
Hazard Class
8
Subsidiary hazard class
3 6.1
Packing Group
II
Proper shipping name
Ammonium sulphide solution
Description
UN2683, Ammonium sulphide solution, 8 (3 6.1), II

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists:
TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC) Philippines (PICCS)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
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<tr>
<td>Santa Cruz Biotechnology, Inc.</td>
<td><a href="http://www.scbt.com">www.scbt.com</a></td>
<td>5 / 6</td>
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Water

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<th>-</th>
<th>-</th>
<th>X</th>
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<tr>
<td>Ammonium sulfide</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

X - Listed
- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
- ENCS - Japan Existing and New Chemical Substances
- IECSC - China Inventory of Existing Chemical Substances
- KECL - Korean Existing and Evaluated Chemical Substances
- PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
- Acute health hazard: No
- Chronic Health Hazard: No
- Fire hazard: Yes
- Sudden release of pressure hazard: No
- Reactive hazard: No

CWA (Clean Water Act)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
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<tbody>
<tr>
<td>Ammonium sulfide 12135-76-1</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium sulfide 12135-76-1</td>
<td>X</td>
<td>X</td>
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</tbody>
</table>

16. OTHER INFORMATION

Revision note
No information available

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet