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

Product identifier
Product Name 3-(Methylthio)propionaldehyde
Product Code SC-231383

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

Details of the supplier of the safety data sheet
Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

Emergency telephone number
Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

2. HAZARDS IDENTIFICATION

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

Classification
Acute toxicity - Oral Category 4
Acute toxicity - Dermal Category 3
Acute toxicity - Inhalation (Vapors) Category 3
Acute toxicity - Inhalation (Dusts/Mists) Category 4
Serious eye damage/eye irritation Category 1
Flammable liquids Category 4

Label elements
Signal word Danger
Hazard statements Causes serious eye damage
Harmful if inhaled
Harmful if swallowed
Combustible liquid

Symbols/Pictograms

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep cool
Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
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 or doctor/physician
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor/physician if you feel unwell
Remove/Take off immediately all contaminated clothing
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
In case of fire: Use CO2, dry chemical, or foam for extinction
Store locked up Store in a well-ventilated place. Keep container tightly closed
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

Other hazards

Harmful to aquatic life with long lasting effects. Toxic to aquatic life.

NFPA

Health hazards 2
Flammability 2
Stability 0
Physical and chemical properties -

HMIS

Health hazards 2
Flammability 2
Physical hazards 0
Personal protection -

3. COMPOSITION/INFORMATION ON INGREDIENTS

<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>3-(Methylthio)propionaldehyde</td>
<td>3268-49-3</td>
<td>&gt;98</td>
<td>496 mg/kg (Rat)</td>
<td>1700 mg/kg (Rabbit)</td>
<td>&gt; 4.84 mg/L (Rat) 4 h</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

General advice

If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.

Eye contact

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin Contact

Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is not required. If skin irritation persists, call a physician.

Inhalation

Remove to fresh air. Call a physician. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation
Immediate medical attention is not required. If symptoms persist, call a physician. Move to fresh air in case of accidental inhalation of vapors or decomposition products.

**Ingestion**
Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

**Self-protection of the first aider**
Use personal protective equipment as required.

**Most important symptoms and effects, both acute and delayed**
<table>
<thead>
<tr>
<th>Symptoms</th>
<th>No information available.</th>
</tr>
</thead>
</table>

**Indication of any immediate medical attention and special treatment needed**
<table>
<thead>
<tr>
<th>Note to physicians</th>
<th>Treat symptomatically.</th>
</tr>
</thead>
</table>

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
- **Use.** Dry chemical. Carbon dioxide (CO2). Water spray (fog). Alcohol resistant foam.
- **Unsuitable Extinguishing Media.** No information available.

**Specific hazards arising from the chemical**
- **Specific hazards arising from the chemical.** Keep product and empty container away from heat and sources of ignition. Risk of ignition.
- **Hazardous combustion products.** Hydrogen sulfide. Carbon oxides.

**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.** Use personal protective equipment as required. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Pay attention to flashback. Take precautionary measures against static discharges.

**Environmental precautions**
- **Environmental precautions.** Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

**Methods and material for containment and cleaning up**
- **Methods for containment.** Prevent further leakage or spillage if safe to do so.
- **Methods for cleaning up.** Cover liquid spill with sand, earth or other non-combustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Pick up and transfer to properly labeled containers. Soak up with inert absorbent material. Dam up. Take precautionary measures against static discharges.

### 7. HANDLING AND STORAGE
Precautions for safe handling
Advice on safe handling
Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Noxious vapor/odor. Ensure adequate ventilation, especially in confined areas. Use with local exhaust ventilation. All equipment used when handling the product must be grounded. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).

Conditions for safe storage, including any incompatibilities
Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat. Keep in properly labeled containers. Store at 4 °C.

Incompatible materials
None known based on information supplied.

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
Tight sealing safety 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>165 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>74 °C CC (closed cup)</td>
</tr>
<tr>
<td>Liquid Density</td>
<td>1.04 g/cm³</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Upper flammability limits</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>3.6</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
</tbody>
</table>
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.

**Incompatible materials**
Strong oxidizing agents.

**Hazardous Decomposition Products**
Hydrogen sulfide. Carbon oxides.

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**
No information available

The following values are calculated based on chapter 3.1 of the GHS document

- **ATEmix (oral)**
  496 mg/kg

- **ATEmix (dermal)**
  300 mg/kg

- **ATEmix (inhalation-dust/mist)**
  1.5 mg/l

- **ATEmix (inhalation-vapor)**
  4.8 mg/l

12. ECOLOGICAL INFORMATION

**Ecotoxicity**
Harmful to aquatic life with long lasting effects

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to Microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-(Methylthio)propionaldehyde</td>
<td>2.45: 72 h Desmodesmus subspicatus mg/L EC50</td>
<td>14: 24 h Brachydanio rerio mg/L LC50 static</td>
<td>-</td>
<td>25: 24 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>3268-49-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.
### 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.

Other Information
- Waste codes should be assigned by the user based on the application for which the product was used.

### 14. TRANSPORT INFORMATION

**DOT**
- UN/ID no: UN2785
- Hazard Class: 6.1
- Packing Group: III
- Proper shipping name: 4-Thiapentanal
- Description: UN2785, 4-Thiapentanal, 6.1, III
- Emergency Response Guide Number: 152

**IMDG**
- UN/ID no: UN2785
- Hazard Class: 6.1
- Packing Group: III
- Proper shipping name: 4-Thiapentanal
- Description: UN2785, 4-Thiapentanal, 6.1, III
- EmS-No: F-A, S-A

**IATA**
- UN/ID no: UN2785
- Hazard Class: 6.1
- Packing Group: III
- Proper shipping name: 4-Thiapentanal
- Description: UN2785, 4-Thiapentanal, 6.1, III
- ERG Code: 6L

### 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) China (IECSC) ENCS (Japan): 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>
</tr>
</thead>
<tbody>
<tr>
<td>3-(Methylthio)propionaldehyde</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</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
**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**

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute health hazard</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Fire hazard</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Sudden release of pressure hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Reactive hazard</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**CWA (Clean Water Act)**
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**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>3-(Methylthio)propionaldehyde</td>
<td>X</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>3268-49-3</td>
<td></td>
<td></td>
<td></td>
</tr>
</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*