SAFETY DATA SHEET
Santa Cruz Biotechnology, Inc.
Revision date 17-Apr-2018
Version 1

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

Product identifier
Product Name: Heptaldehyde
Product Code: SC-250089

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
Skin corrosion/irritation: Category 2
Flammable liquids: Category 3

Label elements
Signal word: Warning
Hazard statements:
Causes skin irritation
Flammable liquid and vapor

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
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

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
In case of fire: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant
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>Heptaldehyde</td>
<td>111-71-7</td>
<td>&gt;98</td>
<td>= 3200 mg/kg (Rat)</td>
<td>&gt; 5 g/kg (Rabbit)</td>
<td>&gt; 4.7 mg/L (Rat) 4 h</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures
- **General advice**: Consult a physician if necessary. Remove to fresh air.
- **Eye contact**: Wash with plenty of water.
- **Skin Contact**: Wash skin with soap and 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.

Most important symptoms and effects, both acute and delayed
- **Symptoms**: No information available.

Indication of any immediate medical attention and special treatment needed
- **Note to physicians**: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
- **Suitable Extinguishing Media**: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- **Unsuitable Extinguishing Media**: None.

Specific hazards arising from the chemical
- **Specific hazards arising from the chemical**: No information available.
- **Hazardous combustion products**: Carbon oxides.

Explosion data
- **Sensitivity to Mechanical Impact**: No information available.
- **Sensitivity to Static Discharge**: No information available.
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
Ensure adequate ventilation, especially in confined areas.

Environmental precautions
See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up
Prevent further leakage or spillage if safe to do so.
Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling
Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities
May form explosive peroxides. Store at room temperature.
None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Appropriate engineering controls
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment
Wear safety glasses with side shields (or goggles).
Wear protective gloves and protective clothing.
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.
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State
liquid
10. STABILITY AND REACTIVITY

Reactivity

Not applicable

Chemical stability

May form explosive peroxides.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization

No information available.

Conditions to avoid

Extremes of temperature and direct sunlight.

Incompatible materials

Strong oxidizing agents.

Hazardous Decomposition Products

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) 3200 mg/kg

ATEmix (dermal) 5000 mg/kg
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>Heptaldehyde 111-71-7</td>
<td>-</td>
<td>12: 96 h Oncorhynchus mykiss mg/L LC50 static</td>
<td>-</td>
<td>43 - 69: 48 h Daphnia magna mg/L EC50</td>
</tr>
</tbody>
</table>

0% 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.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptaldehyde 111-71-7</td>
<td>2.8</td>
</tr>
</tbody>
</table>

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.

14. TRANSPORT INFORMATION

DOT
- UN/ID no: UN3056
- Hazard Class: 3
- Packing Group: III
- Proper shipping name: n-Heptaldehyde
- Description: UN3056, n-Heptaldehyde, 3, III, Marine pollutant
- Marine pollutant: This product contains a chemical which is listed as a marine pollutant according to DOT
- Emergency Response Guide Number: 129

IMDG
- UN/ID no: UN3056
- Hazard Class: 3
- Packing Group: III
- Proper shipping name: n-Heptaldehyde
- Description: UN3056, n-Heptaldehyde, 3, III, (35°C c.c.)
- EmS-No: F-E, S-D

IATA
- UN/ID no: UN3056
- Hazard Class: 3
- Packing Group: III
- Proper shipping name: n-Heptaldehyde
- Description: UN3056, n-Heptaldehyde, 3, III
- ERG Code: 3L

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)
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>Heptaldehyde</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</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 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
This product does not contain any substances regulated by state right-to-know regulations

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