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

Product identifier
Product Name 4-hydroxyhexan-3-one
Product Code SC-362168

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

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 4
- Acute toxicity - Inhalation (Dusts/Mists): Category 4
- Flammable liquids: Category 3

Label elements
- Signal word: Warning
- Hazard statements:
  - Harmful in contact with skin
  - Harmful if inhaled
  - Harmful if swallowed
  - Flammable liquid and vapor

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 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
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all
contaminated clothing. Rinse skin with water/shower
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 you feel unwell
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 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

NFPA
Health hazards 1
Flammability 2
Stability 0
Physical and chemical
properties -

HMIS
Health hazards 1
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>4-hydroxyhexan-3-one</td>
<td>4984-85-4</td>
<td>&gt;98</td>
<td>-</td>
<td>-</td>
<td>-</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
No information available.

Specific hazards arising from the chemical
Specific hazards arising from the chemical
flammable.

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
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. Use personal protective equipment as required.

Environmental precautions
Environmental precautions
See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.

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
Soak up with inert absorbent material.

7. HANDLING AND STORAGE

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

Conditions for safe storage, including any incompatibilities
Storage Conditions
Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Store at room temperature.

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
Showers
Eyewash stations
Ventilation systems
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: Handle in accordance with good industrial hygiene and safety practice.

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>166 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>54 °C</td>
</tr>
<tr>
<td>Liquid Density</td>
<td>0.96 g/mL</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>0.70 mmHg</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</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>
<tr>
<td>Partition coefficient</td>
<td>0.72</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</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: 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
\[
\begin{align*}
\text{ATEmix (oral)} & : 500 \text{ mg/kg} \\
\text{ATEmix (dermal)} & : 1100 \text{ mg/kg} \\
\text{ATEmix (inhalation-dust/mist)} & : 1.5 \text{ mg/l}
\end{align*}
\]

12. ECOLOGICAL INFORMATION
Ecotoxicity
May cause long lasting harmful effects to aquatic life
100% 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
D001

14. TRANSPORT INFORMATION

DOT
\[
\begin{align*}
\text{UN/ID no} & : \text{UN1993} \\
\text{Hazard Class} & : 3 \\
\text{Packing Group} & : \text{III} \\
\text{Proper shipping name} & : \text{Flammable liquids, n.o.s.} \\
\text{Description} & : \text{UN1993, Flammable liquids, n.o.s., 3, III} \\
\text{Emergency Response Guide Number} & : 128
\end{align*}
\]

IMDG
\[
\begin{align*}
\text{UN/ID no} & : \text{UN1993} \\
\text{Hazard Class} & : 3 \\
\text{Packing Group} & : \text{III} \\
\text{Proper shipping name} & : \text{Flammable liquid, n.o.s.} \\
\text{Description} & : \text{UN1993, Flammable liquid, n.o.s., 3, III, (54°C c.c.)} \\
\text{Special Provisions} & : 223, 274, 955 \\
\text{EmS-No} & : \text{F-E, S-E}
\end{align*}
\]

IATA
\[
\begin{align*}
\text{UN/ID no} & : \text{UN1993}
\end{align*}
\]
Hazard Class: 3  
Packing Group: III  
Proper shipping name: Flammable liquid, n.o.s.  
Description: UN1993, Flammable liquid, n.o.s., 3, III  
ERG Code: 3L

15. REGULATORY INFORMATION

**International Inventories**  
All of the components in the product are on the following Inventory lists  
Europe (EINECS/ELINCS/NLP) 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>4-hydroxyhexan-3-one</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
</tr>
</tbody>
</table>

- 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: Yes  
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