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

Product identifier
Product Name  3-Carene
Product Code  SC-225996

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
Skin corrosion/irritation  Category 2
Skin sensitization  Category 1
Aspiration toxicity  Category 1
Flammable liquids  Category 3

Label elements
Signal word  Warning
Hazard statements  Causes skin irritation
  May cause an allergic skin reaction
  May be fatal if swallowed and enters airways
  Flammable liquid and vapor

Symbols/Pictograms

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
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 or rash 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
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting
In case of fire: Use CO2, dry chemical, or foam for extinction
Store locked up 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

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td>Flammability</td>
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</tr>
<tr>
<td>Stability</td>
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<td></td>
</tr>
<tr>
<td>Physical and chemical properties</td>
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</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health hazards</th>
<th>2</th>
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<tbody>
<tr>
<td>Flammability</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Physical hazards</td>
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<td></td>
</tr>
<tr>
<td>Personal protection</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

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>
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<tbody>
<tr>
<td>3-Carene</td>
<td>13466-78-9</td>
<td>&gt;98</td>
<td>= 4800 mg/kg (Rat)</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.

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

Santa Cruz Biotechnology, Inc. www.scbt.com
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
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
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 and material 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.

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
None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
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<tbody>
<tr>
<td>Santa Cruz Biotechnology, Inc.  <a href="http://www.scbt.com">www.scbt.com</a></td>
<td>3 / 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 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**
When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical State</strong></td>
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<tr>
<td><strong>Appearance</strong></td>
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<td><strong>Odor</strong></td>
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<td><strong>pH</strong></td>
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<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>-79.99 °C</td>
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<tr>
<td><strong>Boiling point</strong></td>
<td>168 °C</td>
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<tr>
<td><strong>Flash point</strong></td>
<td>47 °C CC (closed cup)</td>
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<tr>
<td><strong>Density</strong></td>
<td>0.86 g/cm³</td>
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<td><strong>Evaporation rate</strong></td>
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<tr>
<td><strong>Upper flammability limits</strong></td>
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<tr>
<td><strong>Lower flammability limit</strong></td>
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<tr>
<td><strong>Vapor pressure</strong></td>
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<tr>
<td><strong>Vapor density</strong></td>
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<td><strong>Specific gravity</strong></td>
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<td><strong>Water solubility</strong></td>
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</tr>
<tr>
<td><strong>Solubility in other solvents</strong></td>
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<td><strong>Partition coefficient</strong></td>
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<tr>
<td><strong>Autoignition temperature</strong></td>
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<td><strong>Decomposition temperature</strong></td>
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<td><strong>Kinematic viscosity</strong></td>
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<tr>
<td><strong>Explosive properties</strong></td>
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<tr>
<td><strong>Oxidizing properties</strong></td>
<td>No information available</td>
</tr>
</tbody>
</table>

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### 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**: Carbon oxides.

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### 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)  4800 mg/kg

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.

14. TRANSPORT INFORMATION

DOT
UN/ID no       UN2319
Hazard Class   3
Packing Group  III
Proper shipping name Terpene hydrocarbons, n.o.s.
Description    UN2319, Terpene hydrocarbons, n.o.s., 3, III
Emergency Response Guide Number 128

IMDG
UN/ID no       UN2319
Hazard Class   3
Packing Group  III
Proper shipping name Terpene hydrocarbons, n.o.s.
Description    UN2319, Terpene hydrocarbons, n.o.s., 3, III, (47°C c.c.)
EmS-No          F-E, S-D
IATA
UN/ID no UN2319
Hazard Class 3
Packing Group III
Proper shipping name Terpene hydrocarbons, n.o.s.
Description UN2319, Terpene hydrocarbons, n.o.s., 3, III

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>
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<tr>
<td>3-Carene</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
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