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

**Product identifier**
Product Name: Tetramethrin
Product Code: SC-251196

**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 - Inhalation (Dusts/Mists): Category 3
Carcinogenicity: Category 1B
Specific target organ toxicity (single exposure): Category 2

**Label elements**
Signal word: Danger
Hazard statements:
- Harmful if swallowed
- May be harmful in contact with skin
- Toxic if inhaled
- May cause cancer
- May cause damage to organs

**Precautionary Statements - Prevention**
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**
IF exposed or concerned: Get medical advice/attention
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
Precautionary Statements - Storage
Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC)
Not applicable

Other Information
Other hazards
Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life.

NFPA Health hazards 0 Flammability 1 Stability 0 Physical and chemical properties -
HMIS Health hazards 0 Flammability 1 Physical hazards 0 Personal protection -

* = Chronic Health Hazard

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>Tetramethrin</td>
<td>7696-12-0</td>
<td>&gt;98</td>
<td>= 4640 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rat)</td>
<td>&gt; 2500 mg/kg (Rat)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt; 1.18 mg/L (Rat) 3 h</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures
General advice
If symptoms persist, call a physician.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician. 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.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. Wash contaminated clothing before reuse. Wash off immediately with plenty of water. Immediate medical attention is not required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation
Remove to fresh air. If symptoms persist, call a physician. Artificial respiration and/or oxygen may be necessary. Call a physician. Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors.

Ingestion
Immediate medical attention is not required. Rinse mouth. Drink plenty of water. 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
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**

<table>
<thead>
<tr>
<th></th>
<th>Suitable Extinguishing Media</th>
<th>Unsuitable Extinguishing Media</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

**Specific hazards arising from the chemical**

<table>
<thead>
<tr>
<th></th>
<th>Specific hazards arising from the chemical</th>
<th>Hazardous combustion products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No information available.</td>
<td>Carbon oxides.</td>
</tr>
</tbody>
</table>

**Explosion data**

<table>
<thead>
<tr>
<th></th>
<th>Sensitivity to Mechanical Impact</th>
<th>Sensitivity to Static Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No information available.</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

**Protective equipment and precautions for firefighters**

<table>
<thead>
<tr>
<th></th>
<th>Protective equipment and precautions for firefighters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.</td>
</tr>
</tbody>
</table>

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

<table>
<thead>
<tr>
<th></th>
<th>Personal precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use personal protective equipment as required. Avoid contact with eyes and skin. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.</td>
</tr>
</tbody>
</table>

**Environmental precautions**

<table>
<thead>
<tr>
<th></th>
<th>Environmental precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information. Should not be released into the environment.</td>
</tr>
</tbody>
</table>

**Methods and material for containment and cleaning up**

<table>
<thead>
<tr>
<th></th>
<th>Methods for containment</th>
<th>Methods for cleaning up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prevent further leakage or spillage if safe to do so. Use personal protective equipment as required. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Avoid creating dust. Soak up with inert absorbent material. Dam up. Pick up and transfer to properly labeled containers. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water. Take precautionary measures against static discharges.</td>
<td></td>
</tr>
</tbody>
</table>

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

<table>
<thead>
<tr>
<th></th>
<th>Advice on safe handling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required. Use with local exhaust ventilation. Do not breathe dust/fume/gas/mist/vapors/spray.</td>
</tr>
</tbody>
</table>

**Conditions for safe storage, including any incompatibilities**

<table>
<thead>
<tr>
<th></th>
<th>Storage Conditions</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Incompatible materials</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None known based on information supplied.</td>
</tr>
</tbody>
</table>
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
Shower
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment
Eye/face protection
Tight sealing safety goggles. Face protection shield.
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. Wash contaminated clothing before reuse. 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>Solid</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>60 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>455 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>227.9 °C</td>
</tr>
<tr>
<td>Liquid Density</td>
<td>1.11 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>0 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>4.73</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  Avoid repeated exposure.
Carcinogenicity  The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetramethrin</td>
<td>-</td>
<td>Group 2A</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

IARC (International Agency for Research on Cancer)  Group 2A - Probably Carcinogenic to Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)  X - Present

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)  500  mg/kg
ATEmix (dermal)  2002  mg/kg
ATEmix (inhalation-dust/mist)  0.9  mg/l
ATEmix (inhalation-vapor)  1.2

12. ECOLOGICAL INFORMATION

Ecotoxicity  Very toxic to aquatic life with long lasting effects
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.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations. Should not be released into the environment.
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.
California Hazardous Waste Status
This product contains one or more substances that are listed with the State of California as a hazardous waste.
14. TRANSPORT INFORMATION

DOT
UN/ID no: UN3077
Hazard Class: 9
Packing Group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
Description: UN3077, Environmentally hazardous substance, solid, n.o.s. (Tetramethrin), 9, III, Marine pollutant
Emergency Response Guide Number: 171

IMDG
UN/ID no: UN3077
Hazard Class: 9
Packing Group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
Description: UN3077, Environmentally hazardous substance, solid, n.o.s. (Tetramethrin), 9, III, Marine pollutant
Special Provisions: 274, 335, 966, 967, 969
EmS-No: F-A, S-F
Marine pollutant: This product contains a chemical which is listed as a marine pollutant according to DOT/IMO

IATA
UN/ID no: UN3077
Hazard Class: 9
Packing Group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
Description: UN3077, Environmentally hazardous substance, solid, n.o.s., 9, III
ERG Code: 9L

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists:
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>Tetramethrin</td>
<td>-</td>
<td>-</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: Yes
- Chronic Health Hazard: Yes
- Fire hazard: No
- 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**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetramethrin</td>
<td>X</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>7696-12-0</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