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

Product identifier
Product Name: Fipronil
Product Code: SC-201546

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 3
Acute toxicity - Dermal: Category 3
Acute toxicity - Inhalation (Dusts/Mists): Category 2
Serious eye damage/eye irritation: Category 2A
Carcinogenicity: Category 1B
Specific target organ toxicity (repeated exposure): Category 1

Label elements
Signal word: Danger
Hazard statements:
-Fatal if inhaled
-Causes serious eye irritation
-May cause cancer
-Causes damage to organs through prolonged or repeated exposure
-Toxic in contact with skin
-Toxic if swallowed

Symbols/Pictograms

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
-Do not breathe dust/fume/gas/mist/vapors/spray
-Use only outdoors or in a well-ventilated area
-Wear respiratory protection
Precautionary Statements - Response

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Stability</th>
<th>Physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>-</td>
</tr>
</tbody>
</table>

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)
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.

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>Fipronil</td>
<td>120068-37-3</td>
<td>&gt;98</td>
<td>= 97 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rat)</td>
<td>= 0.68 mg/L (Rat) 4 h = 0.42 mg/L (Rat) 4 h = 0.36 mg/L (Rat) 4 h</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

General advice
Immediate medical attention is required.

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. Call a physician immediately.

Skin Contact
Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation
Immediate medical attention is required. Remove to fresh air. If not breathing, give artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Ingestion
Do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Drink plenty of water.
Self-protection of the first aider
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

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
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
Thermal decomposition can lead to release of toxic/corrosive gases and vapors.

Hazardous combustion products

Explosion data
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
Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

Environmental precautions
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.

Methods and material for containment and cleaning up
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
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.

7. HANDLING AND STORAGE

Precautions for 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. Handle in accordance with good industrial hygiene and safety practice. Corrosive hazard. Wear protective gloves/clothing and eye/face protection. Thermal decomposition can lead to release of toxic/corrosive gases and 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. 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**
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. Avoid contact with skin, eyes or clothing. Wash hands thoroughly after handling. Keep away from food, drink and animal feeding stuffs.

---

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical State</strong></td>
<td>Solid</td>
</tr>
<tr>
<td><strong>Appearance</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>characteristic May be unpleasant</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>203.92 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>510.1 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>262.3 °C</td>
</tr>
<tr>
<td>Liquid Density</td>
<td>1.9 g/cm$^3$</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>1</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>4.00</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>
</tbody>
</table>
Explosive properties          No information available
Oxidizing properties         No information available

10. STABILITY AND REACTIVITY

Reactivity            Not applicable
Chemical stability    Stable under recommended storage conditions.
Possibility of Hazardous Reactions  Contact with acids may liberate toxic gas.
Hazardous polymerization No information available.
Conditions to avoid    Extremes of temperature and direct sunlight.
Incompatible materials  Strong oxidizing agents.

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.
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>Fipronil</td>
<td></td>
<td>Group 2A</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>120068-37-3</td>
<td></td>
<td></td>
<td></td>
<td></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)        97 mg/kg
ATEmix (dermal)     300 mg/kg
ATEmix (inhalation-dust/mist) 0 mg/l

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.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>California Hazardous Waste Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fipronil</td>
<td>Toxic</td>
</tr>
<tr>
<td>120068-37-3</td>
<td></td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

**DOT**
- UN/ID no: UN2811
- Hazard Class: 6.1
- Packing Group: III
- Proper shipping name: Toxic solids, organic, n.o.s.
- Description: UN2811, Toxic solids, organic, n.o.s. (Fipronil), 6.1, III
- Emergency Response Guide Number: 154

**IMDG**
- UN/ID no: UN2811
- Hazard Class: 6.1
- Packing Group: III
- Proper shipping name: Toxic solid, organic, n.o.s.
- Description: UN2811, Toxic solid, organic, n.o.s. (Fipronil), 6.1, III, Marine pollutant
- Special Provisions: 223, 274
- EmS-No: F-A, S-A

**IATA**
- UN/ID no: UN2811
- Hazard Class: 6.1
- Packing Group: III
- Proper shipping name: Toxic solid, organic, n.o.s.
- Description: UN2811, Toxic solid, organic, n.o.s. (Fipronil), 6.1, III
- ERG Code: 6L

15. REGULATORY INFORMATION

**International Inventories**
All of the components in the product are on the following Inventory lists:
- Europe (EINECS/ELINCS/NLP)
- South Korea (KECL)
- ENCS (Japan)

<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>Fipronil</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</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
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

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