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

Product identifier
Product Name Spiromesifen
Product Code SC-236933

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
Acute toxicity - Inhalation (Dusts/Mists) Category 4
Carcinogenicity Category 1B

Label elements
Signal word Danger
Hazard statements Harmful if inhaled
May cause cancer

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
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
Precautionary Statements - Storage
Store locked up

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.

NFPA
Health hazards
Flammability
Stability
Physical and chemical properties

HMIS
Health hazards
Flammability
Physical hazards
Personal protection

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS No
283594-90-1
Molecular Weight
370.48
Formula
C_{23}H_{30}O_{4}

<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>Spiromesifen</td>
<td>283594-90-1</td>
<td>&gt;98</td>
<td>&gt; 2500 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rat)</td>
<td>&gt; 4873 mg/m³ (Rat) 4 h</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures
Consult a physician if necessary. Remove to fresh air.
Wash with plenty of water.
Wash skin with soap and water.
Remove to fresh air If breathing is difficult, give oxygen If not breathing, give artificial respiration
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
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
No information available.
**Chemical**
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: Ensure adequate ventilation, especially in confined areas.

**Environmental precautions**
- Environmental precautions: See Section 12 for additional Ecological Information. Prevent product from entering drains. Should not be released into the environment.

**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: Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly.

**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 containers tightly closed in a dry, cool and well-ventilated place. 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>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>Melting point/freezing point</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>350 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
</tr>
<tr>
<td>Liquid Density</td>
<td>No information available</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>0.01 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>4.55</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

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.

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>Spiromesifen</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) 2502 mg/kg
- ATEmix (dermal) 2002 mg/kg
- ATEmix (inhalation-dust/mist) 1.5 mg/l
- ATEmix (inhalation-vapor) 4873 mg/l

**12. ECOLOGICAL INFORMATION**

Ecotoxicity  
Very toxic to aquatic life with long lasting effects

0% of the mixture consists of component(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.

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>Spiromesifen</td>
<td>Toxic</td>
</tr>
</tbody>
</table>

**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., 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. (Spiromesifen), 9, III, Marine pollutant
Special Provisions 274, 335, 966, 967, 969
EmS-No              F-A, S-F

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
No information available

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 No
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