SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Lambda-Cyhalothrin / Decamethylcyclopentasiloxane Formulation

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
   Trade name : Lambda-Cyhalothrin / Decamethylcyclopentasiloxane Formulation

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Use of the Substance/Mixture : Veterinary product

1.3 Details of the supplier of the safety data sheet
   Company : MSD
   Shotton Lane
   NE23 3JU Cramlington NU - Great Britain
   Telephone : 44 1 670 59 30 00
   Telefax : 908-735-1496
   E-mail address of person responsible for the SDS : EHSDATASTEWARD@msd.com

1.4 Emergency telephone number
   1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification (REGULATION (EC) No 1272/2008)
   - Acute toxicity, Category 4
     - H332: Harmful if inhaled.
   - Acute toxicity, Category 4
     - H312: Harmful in contact with skin.
   - Eye irritation, Category 2
     - H319: Causes serious eye irritation.
   - Specific target organ toxicity - single exposure, Category 2
     - H371: May cause damage to organs.
   - Short-term (acute) aquatic hazard, Category 1
     - H400: Very toxic to aquatic life.
   - Long-term (chronic) aquatic hazard, Category 1
     - H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements
   Labelling (REGULATION (EC) No 1272/2008)
   - Hazard pictograms :
     - Warning
   - Signal word : Warning
Lambda-Cyhalothrin / Decamethylcyclopenta-siloxane Formulation

Hazard statements: H312 + H332 Harmful in contact with skin or if inhaled. H319 Causes serious eye irritation. H371 May cause damage to organs. H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:
Prevention:
P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:
P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell. P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor. P337 + P313 If eye irritation persists: Get medical advice/attention. P391 Collect spillage.

Hazardous components which must be listed on the label:
lambda-cyhalothrin (ISO)

2.3 Other hazards
This substance/mixture contains components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB).

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>lambda-cyhalothrin (ISO)</td>
<td>91465-08-6</td>
<td>415-130-7</td>
<td>607-252-00-6</td>
<td></td>
<td>Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 3; H311 Eye Irrit. 2; H319 STOT SE 1; H370 (Nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 1 - &lt; 2.5</td>
</tr>
</tbody>
</table>

M-Factor (Acute aquatic toxicity): 10,000 M-Factor (Chronic aquatic toxicity):
SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.

Protection of first-aiders: First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

If inhaled: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

In case of skin contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

In case of eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention.

If swallowed: If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel. Get medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Risks: Harmful in contact with skin or if inhaled. Causes serious eye irritation. May cause damage to organs.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: Treat symptomatically and supportively.
SECTION 5: Firefighting measures

5.1 Extinguishing media

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>Water spray</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alcohol-resistant foam</td>
</tr>
<tr>
<td></td>
<td>Carbon dioxide (CO2)</td>
</tr>
<tr>
<td></td>
<td>Dry chemical</td>
</tr>
</tbody>
</table>

| Unsuitable extinguishing media | None known. |

5.2 Special hazards arising from the substance or mixture

<table>
<thead>
<tr>
<th>Specific hazards during firefighting</th>
<th>Vapours may form explosive mixtures with air.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposure to combustion products may be a hazard to health.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous combustion products</th>
<th>Carbon oxides</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nitrogen oxides (NOx)</td>
</tr>
<tr>
<td></td>
<td>Chlorine compounds</td>
</tr>
<tr>
<td></td>
<td>Fluorine compounds</td>
</tr>
<tr>
<td></td>
<td>Silicon oxides</td>
</tr>
<tr>
<td></td>
<td>Formaldehyde</td>
</tr>
</tbody>
</table>

5.3 Advice for firefighters

<table>
<thead>
<tr>
<th>Special protective equipment for firefighters</th>
<th>In the event of fire, wear self-contained breathing apparatus.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use personal protective equipment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific extinguishing methods</th>
<th>Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use water spray to cool unopened containers.</td>
</tr>
<tr>
<td></td>
<td>Remove undamaged containers from fire area if it is safe to do so.</td>
</tr>
<tr>
<td></td>
<td>Evacuate area.</td>
</tr>
</tbody>
</table>

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

<table>
<thead>
<tr>
<th>Personal precautions</th>
<th>Use personal protective equipment.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).</td>
</tr>
</tbody>
</table>

6.2 Environmental precautions

<table>
<thead>
<tr>
<th>Environmental precautions</th>
<th>Avoid release to the environment.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prevent further leakage or spillage if safe to do so.</td>
</tr>
<tr>
<td></td>
<td>Prevent spreading over a wide area (e.g. by containment or oil barriers).</td>
</tr>
<tr>
<td></td>
<td>Retain and dispose of contaminated wash water.</td>
</tr>
<tr>
<td></td>
<td>Local authorities should be advised if significant spillages cannot be contained.</td>
</tr>
</tbody>
</table>
6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Soak up with inert absorbent material. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections
See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures: See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation: If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling: Do not get on skin or clothing. Do not breathe mist or vapours. Do not swallow. Do not get in eyes. Wash skin thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment. Keep container tightly closed. Do not eat, drink or smoke when using this product. Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures: If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations.
Lambda-Cyhalothrin / Decamethylcyclopentasiloxane Formulation

Advice on common storage: Do not store with the following product types:
- Strong oxidizing agents
- Organic peroxides
- Explosives
- Gases

7.3 Specific end use(s)
Specific use(s): No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>lambda-cyhalothrin (ISO)</td>
<td>91465-08-6</td>
<td>TWA</td>
<td>5 µg/m³ (OEB 4)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Skin</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wipe limit</td>
<td>50 µg/100 cm²</td>
<td>Internal</td>
</tr>
</tbody>
</table>

Occupational exposure limits of decomposition products

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>OELV - 15 min (STEL)</td>
<td>0.6 ppm</td>
<td>IE OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.738 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Chemical agents which following exposure may cause sensitisation of the respiratory tract and lead to asthma, rhinitis or extrinsic allergic alveolitis, Carc 1B - Substances presumed to have carcinogenic potential for humans</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OELV - 8 hrs (TWA)</td>
<td>0.3 ppm</td>
<td>IE OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.37 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Chemical agents which following exposure may cause sensitisation of the respiratory tract and lead to asthma, rhinitis or extrinsic allergic alveolitis, Carc 1B - Substances presumed to have carcinogenic potential for humans</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>0.6 ppm</td>
<td>2004/37/EC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.74 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Dermal sensitisation, Carcinogens or mutagens</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.3 ppm</td>
<td>2004/37/EC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.37 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Dermal sensitisation, Carcinogens or mutagens</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decamethylcyclopenta-</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>97.3 mg/m³</td>
</tr>
</tbody>
</table>
Workers | Inhalation | Acute systemic effects | 62 mg/m³
---|---|---|---
Workers | Inhalation | Long-term local effects | 24.2 mg/m³
Consumers | Inhalation | Long-term systemic effects | 17.3 mg/m³
Consumers | Inhalation | Long-term local effects | 4.3 mg/m³
Consumers | Ingestion | Long-term systemic effects | 5 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decamethylcyclopentasiloxane</td>
<td>Sewage treatment plant</td>
<td>10 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>11 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>1.1 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>3.77 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Oral (Secondary Poisoning)</td>
<td>13 mg/kg food</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Engineering measures
All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Essentially no open handling permitted.
Use closed processing systems or containment technologies.
If handled in a laboratory, use a properly designed biosafety cabinet, fume hood, or other containment device if the potential exists for aerosolization. If this potential does not exist, handle over lined trays or benchtops.

Personal protective equipment

Eye protection: Wear safety glasses with side shields or goggles.
If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.
Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Hand protection

Material: Chemical-resistant gloves

Remarks: Consider double gloving.

Skin and body protection: Work uniform or laboratory coat.
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.
Use appropriate degowning techniques to remove potentially contaminated clothing.

Respiratory protection: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
Equipment should conform to I.S. EN 14387

Filter type: Combined particulates, inorganic gas/vapour and organic
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**: liquid
**Colour**: gold
**Odour**: oily
**Odour Threshold**: No data available
**pH**: No data available
**Melting point/freezing point**: No data available

Initial boiling point and boiling range
**Flash point**: > 93.3 °C
   Method: Tag closed cup

**Evaporation rate**: No data available
**Flammability (solid, gas)**: Not applicable
**Upper explosion limit / Upper flammability limit**: No data available
**Lower explosion limit / Lower flammability limit**: No data available
**Vapour pressure**: No data available
**Relative vapour density**: No data available
**Relative density**: No data available
**Density**: 0.924 - 0.974 g/cm³ (20 °C)
**Solubility(ies)**
   **Water solubility**: insoluble
   **Partition coefficient: n-octanol/water**: No data available
   **Auto-ignition temperature**: No data available
**Decomposition temperature**: No data available

**Viscosity**
   **Viscosity, kinematic**: 61.69 - 73.9 mm²/s

**Explosive properties**: Not explosive
**Oxidizing properties**: The substance or mixture is not classified as oxidizing.
9.2 Other information
Flammability (liquids) : No data available
Molecular weight : Not applicable
Particle size : Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity
Not classified as a reactivity hazard.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions : Vapours may form explosive mixture with air.
Can react with strong oxidizing agents.
Hazardous decomposition products will be formed at elevated temperatures.

10.4 Conditions to avoid
Conditions to avoid : None known.

10.5 Incompatible materials
Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products
Thermal decomposition : Formaldehyde

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Information on likely routes of exposure : Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity
Harmful in contact with skin or if inhaled.

Product:
Acute oral toxicity : LD50 (Rat): > 9,500 mg/kg
Acute inhalation toxicity : LC50 (Rat): > 4.1 mg/l
Remarks: No mortality observed at this dose.
Acute dermal toxicity : LD50 (Rabbit): > 1,900 mg/kg
Components:

**lambda-cyhalothrin (ISO):**
- **Acute oral toxicity:** LD50 (Rat): 56 - 79 mg/kg
- LD50 (Mouse): 20 mg/kg
- **Acute inhalation toxicity:** LC50 (Rat): 0.06 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
- **Acute dermal toxicity:** LD50 (Rat): 632 - 696 mg/kg
- **Acute toxicity (other routes of administration):** LD50 (Rat): 250 - 750 mg/kg
  - Application Route: Intraperitoneal

**Decamethylcyclopentasiloxane:**
- **Acute oral toxicity:** LD50 (Rat): > 5,000 mg/kg
- **Acute inhalation toxicity:** LC50 (Rat): 8.67 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
- **Acute dermal toxicity:** LD50 (Rabbit): > 2,000 mg/kg
  - Assessment: The substance or mixture has no acute dermal toxicity

**Skin corrosion/irritation**
Not classified based on available information.

**Product:**
- **Species:** Rabbit
- **Result:** Mild skin irritation

Components:

**lambda-cyhalothrin (ISO):**
- **Species:** Rabbit
- **Result:** No skin irritation

**Decamethylcyclopentasiloxane:**
- **Species:** Rabbit
- **Result:** No skin irritation

**Serious eye damage/eye irritation**
Causes serious eye irritation.
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Product:
Species: Rabbit
Result: Mild eye irritation

Components:
lambda-cyhalothrin (ISO):
Species: Rabbit
Result: Mild eye irritation

Decamethylcyclopentasiloxane:
Species: Rabbit
Result: No eye irritation

Respiratory or skin sensitisation
Skin sensitisation
Not classified based on available information.
Respiratory sensitisation
Not classified based on available information.

Product:
Species: Guinea pig
Result: Not a skin sensitizer.

Components:
lambda-cyhalothrin (ISO):
Test Type: Magnusson-Kligman-Test
Exposure routes: Dermal
Species: Guinea pig
Result: Not a skin sensitizer.

Decamethylcyclopentasiloxane:
Test Type: Local lymph node assay (LLNA)
Exposure routes: Skin contact
Species: Mouse
Result: negative

Germ cell mutagenicity
Not classified based on available information.

Components:
lambda-cyhalothrin (ISO):
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
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Test Type: Chromosomal aberration  
Test system: Human lymphocytes  
Result: negative

Test Type: unscheduled DNA synthesis assay  
Test system: rat hepatocytes  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Test system: mouse lymphoma cells  
Result: negative

Genotoxicity in vivo:
Test Type: Micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Intraperitoneal  
Result: negative

Decamethylcyclopentasiloxane:
Genotoxicity in vitro:
Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Result: negative

Genotoxicity in vivo:
Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Rat  
Application Route: inhalation (vapour)  
Method: OECD Test Guideline 474  
Result: negative

Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo  
Species: Rat  
Application Route: Inhalation  
Method: OECD Test Guideline 486  
Result: negative

Carcinogenicity
Not classified based on available information.

Components:
lambda-cyhalothrin (ISO):
Species: Mouse  
Application Route: oral (feed)
### Lambda-Cyhalothrin / Decamethylcyclopentasiloxane Formulation

**Version 4.4**  
**Revision Date:** 10.10.2020  
**SDS Number:** 1078837-00012  
**Date of last issue:** 23.03.2020  
**Date of first issue:** 18.11.2016

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exposure time</strong></td>
<td>2 Years</td>
</tr>
<tr>
<td><strong>Result</strong></td>
<td>negative</td>
</tr>
<tr>
<td><strong>Remarks</strong></td>
<td>Based on data from similar materials</td>
</tr>
<tr>
<td><strong>Species</strong></td>
<td>Rat</td>
</tr>
<tr>
<td><strong>Application Route</strong></td>
<td>oral (feed)</td>
</tr>
<tr>
<td><strong>Exposure time</strong></td>
<td>2 Years</td>
</tr>
<tr>
<td><strong>Result</strong></td>
<td>negative</td>
</tr>
<tr>
<td><strong>Remarks</strong></td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

#### Reproductive toxicity

Not classified based on available information.

#### Components:

**lambda-cyhalothrin (ISO):**

**Effects on fertility**  
Test Type: Three-generation study  
Species: Rat  
Application Route: oral (feed)  
General Toxicity - Parent: NOAEL: 2 mg/kg body weight  
General Toxicity F1: LOAEL: 6.7 mg/kg body weight  
Symptoms: Reduced offspring weight gain  
Result: No effects on fertility  
Remarks: Based on data from similar materials

**Effects on foetal development**  
Test Type: Development  
Species: Rat  
Application Route: Oral  
General Toxicity Maternal: NOAEL: 10 mg/kg body weight  
Developmental Toxicity: LOAEL: 15 mg/kg body weight  
Result: No effects on foetal development, Reduced maternal body weight gain, Reduced foetal weight  
Remarks: Based on data from similar materials

**Decamethylcyclopentasiloxane:**

**Effects on fertility**  
Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapour)  
Method: OPPTS 870.3800  
Result: negative

**Effects on foetal development**  
Test Type: Two-generation reproduction toxicity study  
Species: Rat
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STOT - single exposure
May cause damage to organs.

Components:
lambda-cyhalothrin (ISO):
Target Organs : Nervous system
Assessment : Causes damage to organs.

STOT - repeated exposure
Not classified based on available information.

Repeated dose toxicity

Components:
lambda-cyhalothrin (ISO):
Species : Dog
NOAEL : 2.5 mg/kg
LOAEL : 12.5 mg/kg
Application Route : oral (feed)
Exposure time : 90 d
Symptoms : reduced body weight gain, reduced food consumption

Species : Rat
NOAEL : 10 mg/kg
LOAEL : 50 mg/kg
Application Route : Dermal
Exposure time : 21 d
Target Organs : Nervous system

Species : Rat
NOAEL : 0.08 mg/kg
LOAEL : 0.9 mg/kg
Application Route : Inhalation
Exposure time : 21 d
Target Organs : Nervous system

Species : Dog
NOAEL : 0.1 mg/kg
LOAEL : 0.5 mg/kg
Application Route : Oral
Exposure time : 1 yr
Target Organs : Nervous system
Symptoms : Gastrointestinal disturbance, Vomiting, Convulsions, ataxia, Liver effects

Decamethylcyclopentasiloxane:
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Species: Rat
NOAEL: 1,000 mg/kg
LOAEL: > 1,000 mg/kg
Application Route: Ingestion
Method: OECD Test Guideline 408

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Product:
Skin contact: Symptoms: May cause, Local irritation
Eye contact: Symptoms: irritating

Components:
lambda-cyhalothrin (ISO):
Inhalation: Symptoms: Cough, Local irritation, sneezing
Skin contact: Symptoms: Skin irritation, tingling, superficial burning sensation, Local irritation
Remarks: Can be absorbed through skin.

Eye contact: Symptoms: Eye irritation
Ingestion: Symptoms: Gastrointestinal disturbance

SECTION 12: Ecological information

12.1 Toxicity

Components:
lambda-cyhalothrin (ISO):
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 0.00019 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00021 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 0.00004 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

M-Factor (Acute aquatic toxicity): 10,000

Toxicity to fish (Chronic toxicity): NOEC: 0.000062 mg/l
Exposure time: 32 d
Species: Pimephales promelas (fathead minnow)
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Method: OECD Test Guideline 210
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):

NOEC: 0.0035 µg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211
Remarks: Based on data from similar materials

M-Factor (Chronic aquatic toxicity): 10,000

Decamethylcyclopentasiloxane:

Toxicity to fish:
LC50 (Oncorhynchus mykiss (rainbow trout)): > 16 µg/l
Exposure time: 96 h
Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates:
EC50 (Daphnia magna (Water flea)): > 2.9 µg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: No toxicity at the limit of solubility

Toxicity to algae/aquatic plants:
ErC50 (Pseudokirchneriella subcapitata (green algae)): > 12 µg/l
Exposure time: 96 h
Method: OECD Test Guideline 201
Remarks: No toxicity at the limit of solubility

EC10 (Pseudokirchneriella subcapitata (green algae)): > 12 µg/l
Exposure time: 96 h
Method: OECD Test Guideline 201
Remarks: No toxicity at the limit of solubility

Toxicity to microorganisms:
EC50: > 2,000 mg/l
Exposure time: 3 h
Method: 88/302/EC

Toxicity to fish (Chronic toxicity):
NOEC: 14 µg/l
Exposure time: 90 d
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD Test Guideline 210
Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
NOEC: 15 µg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211
Remarks: No toxicity at the limit of solubility
12.2 Persistence and degradability

**Components:**

**Decamethylcyclopentasiloxane:**

Biodegradability: Result: Not readily biodegradable.
Biodegradation: 0.14 %
Exposure time: 28 d
Method: OECD Test Guideline 310

12.3 Bioaccumulative potential

**Components:**

**lambda-cyhalothrin (ISO):**

Bioaccumulation: Bioconcentration factor (BCF): 2,240
Method: OECD Test Guideline 305

Bioaccumulation factor: n-octanol/water: log Pow: 7.0 (20 °C)

**Decamethylcyclopentasiloxane:**

Bioaccumulation: Species: Pimephales promelas (fathead minnow)
Bioconcentration factor (BCF): 7,060 - 13,300
Method: OECD Test Guideline 305

Bioaccumulation factor: n-octanol/water: log Pow: 8.023

12.4 Mobility in soil

**Components:**

**lambda-cyhalothrin (ISO):**

Distribution among environmental compartments: log Koc: 5.5

12.5 Results of PBT and vPvB assessment

**Product:**

Assessment: This substance/mixture contains components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

No data available

**SECTION 13: Disposal considerations**

13.1 Waste treatment methods

**Product:** Dispose of in accordance with local regulations.
According to the European Waste Catalogue, Waste Codes
are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

| ADN | UN 3082 |
| ADR | UN 3082 |
| RID | UN 3082 |
| IMDG| UN 3082 |
| IATA| UN 3082 |

14.2 UN proper shipping name

| ADN          | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (lambda-cyhalothrin (ISO)) |
| ADR          | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (lambda-cyhalothrin (ISO)) |
| RID          | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (lambda-cyhalothrin (ISO)) |
| IMDG         | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (lambda-cyhalothrin (ISO)) |
| IATA         | Environmentally hazardous substance, liquid, n.o.s. (lambda-cyhalothrin (ISO)) |

14.3 Transport hazard class(es)

| ADN | 9      |
| ADR | 9      |
| RID | 9      |
| IMDG| 9      |
| IATA| 9      |

14.4 Packing group

| ADN          | III    |
| Packing group| III    |
| Classification Code | M6     |
| Hazard Identification Number | 90     |
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14.5 Environmental hazards

ADN
Environmentally hazardous: yes

ADR
Environmentally hazardous: yes

RID
Environmentally hazardous: yes

IMDG
Marine pollutant: yes

IATA (Passenger)
Environmentally hazardous: yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet.
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according to Regulation (EC) No. 1907/2006

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Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Remarks: Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Conditions of restriction for the following entries should be considered:
Number on list 3
Decamethylcyclopentasiloxane
(Number on list 70)

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).
REACH - List of substances subject to authorisation (Annex XIV)
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast): Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

E1 ENVIRONMENTAL HAZARDS

Other regulations:
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.
Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

The components of this product are reported in the following inventories:
AICS: not determined
DSL: not determined
IECSC: not determined

15.2 Chemical safety assessment
A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information: Items where changes have been made to the previous version
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are highlighted in the body of this document by two vertical lines.

**Full text of H-Statements**

H301 : Toxic if swallowed.
H311 : Toxic in contact with skin.
H319 : Causes serious eye irritation.
H330 : Fatal if inhaled.
H370 : Causes damage to organs.
H400 : Very toxic to aquatic life.
H410 : Very toxic to aquatic life with long lasting effects.

**Full text of other abbreviations**

Acute Tox. : Acute toxicity
Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Eye Irrit. : Eye irritation
STOT SE : Specific target organ toxicity - single exposure
2004/37/EC : Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
IE OEL : Ireland. List of Chemical Agents and Occupational Exposure Limit Values - Schedule 1
2004/37/EC / STEL : Short term exposure limit
2004/37/EC / TWA : Long term exposure limit
IE OEL / OELV - 8 hrs (TWA) : Occupational exposure limit value (8-hour reference period)
IE OEL / OELV - 15 min (STEL) : Occupational exposure limit value (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GIP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICBO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic sub-
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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.

IE / EN