SAFETY DATA SHEET

Lambda-Cyhalothrin / Decamethylcyclopentasiloxane Formulation

SECTION 1. IDENTIFICATION

Product name: Lambda-Cyhalothrin / Decamethylcyclopentasiloxane Formulation

Manufacturer or supplier’s details
Company name of supplier: Merck & Co., Inc
Address: 2000 Galloping Hill Road
Kenilworth - New Jersey - U.S.A. 07033
Telephone: 908-740-4000
Emergency telephone: 1-908-423-6000
E-mail address: EHSDATASTEWARD@merck.com

Recommended use of the chemical and restrictions on use
Recommended use: Veterinary product

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)
Acute toxicity (Inhalation): Category 4
Acute toxicity (Dermal): Category 4
Eye irritation: Category 2B
Specific target organ toxicity - single exposure: Category 1 (Nervous system)

GHS label elements
Hazard pictograms: 

Signal Word: Danger

Hazard Statements: H312 + H332 Harmful in contact with skin or if inhaled.
H320 Causes eye irritation.
H370 Causes damage to organs (Nervous system).

Precautionary Statements: Prevention:
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves and clothing.

Response:
P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a doctor if you feel unwell.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307 + P311 IF exposed: Call a doctor.
P337 + P313 IF eye irritation persists: Get medical attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:
P405 Store locked up.

Disposal:
P501 Dispose of contents and container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn oil</td>
<td>8001-30-7</td>
<td>&gt;= 90 - &lt;= 100</td>
</tr>
<tr>
<td>Decamethylcyclopentasiloxane</td>
<td>541-02-6</td>
<td>&gt;= 5 - &lt; 10</td>
</tr>
<tr>
<td>lambda-cyhalothrin (ISO)</td>
<td>91465-08-6</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
</tbody>
</table>

Actual concentration is withheld as a trade secret

SECTION 4. 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.

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.

Most important symptoms and effects, both acute and delayed:
Harmful in contact with skin or if inhaled.
Causes eye irritation.
Causes damage to organs.

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).

Notes to physician:
Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media:
None known.

Specific hazards during fire fighting:
Vapors may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health.

Hazardous combustion products:
Carbon oxides
Nitrogen oxides (NOx)
Chlorine compounds
Fluorine compounds
Silicon oxides
Formaldehyde

Specific extinguishing methods:
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

Special protective equipment for fire-fighters:
In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions:
Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g., by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for:
Soak up with inert absorbent material.
containment and cleaning up  For large spills, provide diking or other appropriate containment to keep material from spreading. If diked 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.

SECTION 7. HANDLING AND STORAGE

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 vapors.
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.

Conditions for safe storage :  Keep in properly labeled containers.
Store locked up.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Store in accordance with the particular national regulations.

Materials to avoid :  Do not store with the following product types:
Strong oxidizing agents
Organic peroxides
Explosives
Gases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn oil</td>
<td>8001-30-7</td>
<td>TWA (mist - total)</td>
<td>10 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (mist - total)</td>
<td>5 mg/m³</td>
<td>NIOSH REL</td>
</tr>
</tbody>
</table>
Lambda-Cyhalothrin / Decamethylcyclopentasiloxane Formulation

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<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>TWA</td>
<td>0.016 ppm</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>C</td>
<td>0.1 ppm</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>PEL</td>
<td>0.75 ppm</td>
<td>OSHA CARC</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>STEL</td>
<td>2 ppm</td>
<td>OSHA CARC</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>TWA</td>
<td>0.016 ppm (Formaldehyde)</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>C</td>
<td>0.1 ppm (Formaldehyde)</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>TWA</td>
<td>0.1 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>STEL</td>
<td>0.3 ppm</td>
<td>ACGIH</td>
</tr>
</tbody>
</table>

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

Respiratory protection: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Material: Chemical-resistant gloves

Remarks: Consider double gloving.

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.

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.

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.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance**: liquid
- **Color**: gold
- **Odor**: oily
- **Odor Threshold**: No data available
- **pH**: No data available
- **Melting point/freezing point**: No data available
- **Initial boiling point and boiling range**: No data available
- **Flash point**: > 199.9 °F / > 93.3 °C  
  *Method: Tag closed cup*
- **Evaporation rate**: No data available
- **Flammability (solid, gas)**: Not applicable
- **Flammability (liquids)**: No data available
- **Upper explosion limit / Upper flammability limit**: No data available
- **Lower explosion limit / Lower flammability limit**: No data available
- **Vapor pressure**: No data available
Relative vapor density : No data available
Relative density : No data available
Density : 0.924 - 0.974 g/cm³ (68 °F / 20 °C)
Solubility(ies)
   Water solubility : insoluble
Partition coefficient: n-octanol/water : No data available
Autoignition 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.
Molecular weight : Not applicable
Particle size : Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions
   Vapors may form explosive mixture with air.
   Can react with strong oxidizing agents.
   Hazardous decomposition products will be formed at elevated temperatures.

Conditions to avoid : None known.
Incompatible materials : Oxidizing agents
Hazardous decomposition products
   Thermal decomposition : Formaldehyde

SECTION 11. TOXICOLOGICAL INFORMATION

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:

**Corn oil:**
- **Acute oral toxicity**
  - LD50 (Rat): > 5,000 mg/kg

**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
    - Method: OECD Test Guideline 403
- **Acute dermal toxicity**
  - LD50 (Rabbit): > 2,000 mg/kg
  - Assessment: The substance or mixture has no acute dermal toxicity

**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

### Skin corrosion/irritation

Not classified based on available information.

### Product:

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

### Components:

**Decamethylcyclopentasiloxane:**
- **Species**: Rabbit
**Lambda-Cyhalothrin / Decamethylcyclopentasiloxane Formulation**

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**Result**: No skin irritation

**lambda-cyhalothrin (ISO):**

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

**Serious eye damage/eye irritation**

Causes eye irritation.

**Product:**

- **Species**: Rabbit
- **Result**: Mild eye irritation

**Components:**

**Decamethylcyclopentasiloxane:**

- **Species**: Rabbit
- **Result**: No eye irritation

**lambda-cyhalothrin (ISO):**

- **Species**: Rabbit
- **Result**: Mild eye irritation

**Respiratory or skin sensitization**

**Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Product:**

- **Species**: Guinea pig
- **Result**: Not a skin sensitizer.

**Components:**

**Decamethylcyclopentasiloxane:**

- **Test Type**: Local lymph node assay (LLNA)
- **Routes of exposure**: Skin contact
- **Species**: Mouse
- **Result**: negative

**lambda-cyhalothrin (ISO):**

- **Test Type**: Magnusson-Kligman-Test
- **Routes of exposure**: Dermal
- **Species**: Guinea pig
- **Result**: Not a skin sensitizer.
Germ cell mutagenicity
Not classified based on available information.

Components:

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 (vapor)
  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

lambda-cyhalothrin (ISO):
Genotoxicity in vitro:
- Test Type: Bacterial reverse mutation assay (AMES)
  Result: negative
- 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
Carcinogenicity
Not classified based on available information.

Components:
lambda-cyhalothrin (ISO):
Species: Mouse
Application Route: oral (feed)
Exposure time: 2 Years
Result: negative
Remarks: Based on data from similar materials

Species: Rat
Application Route: oral (feed)
Exposure time: 2 Years
Result: negative
Remarks: Based on data from similar materials

IARC
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA
No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

NTP
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

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

Effects on fetal development: Test Type: Two-generation reproduction toxicity study
   Species: Rat
   Application Route: inhalation (vapor)
   Method: OPPTS 870.3800
   Result: negative

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 fetal 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 fetal development., Reduced maternal body weight gain., Reduced fetal weight.
- Remarks: Based on data from similar materials

Test Type: Development
- Species: Rabbit
- Application Route: Oral
- General Toxicity Maternal: NOAEL: 10 mg/kg body weight
- Developmental Toxicity: NOAEL: 30 mg/kg body weight
- Result: No effects on fetal development., Reduced maternal body weight gain., Reduced fetal weight.
- Remarks: Based on data from similar materials

STOT-single exposure
Causes damage to organs (Nervous system).

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:

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

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
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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 y  
Target Organs: Nervous system  
Symptoms: Gastrointestinal disturbance, Vomiting, Convulsions, ataxia, Liver effects

**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**

**Ecotoxicity**

**Components:**

**Corn oil:**
- Toxicity to fish: LC0 (Danio rerio (zebra fish)): > 100 mg/l  
  Exposure time: 96 h  
  Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates: EC0 (Daphnia magna (Water flea)): > 100 mg/l  
  Exposure time: 48 h  
  Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants:
- \( \text{EL50} \) (Desmodesmus subspicatus (green algae)): > 100 mg/l
  - Exposure time: 72 h
  - Remarks: Based on data from similar materials

Decamethylcyclopentasiloxane:
- Toxicity to fish:
  - \( \text{LC50} \) (Oncorhynchus mykiss (rainbow trout)): > 16 \( \mu \)g/l
    - Exposure time: 96 h
    - Remarks: No toxicity at the limit of solubility.

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

  - Toxicity to algae/aquatic plants:
    - \( \text{ErC50} \) (Pseudokirchneriella subcapitata (green algae)): > 12 \( \mu \)g/l
      - Exposure time: 96 h
      - Method: OECD Test Guideline 201
      - Remarks: No toxicity at the limit of solubility.

    - \( \text{EC10} \) (Pseudokirchneriella subcapitata (green algae)): > 12 \( \mu \)g/l
      - Exposure time: 96 h
      - Method: OECD Test Guideline 201
      - Remarks: No toxicity at the limit of solubility.

  - Toxicity to fish (Chronic toxicity):
    - \( \text{NOEC} \) (Oncorhynchus mykiss (rainbow trout)): 14 \( \mu \)g/l
      - Exposure time: 90 d
      - Method: OECD Test Guideline 210
      - Remarks: No toxicity at the limit of solubility.

  - Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
    - \( \text{NOEC} \) (Daphnia magna (Water flea)): 15 \( \mu \)g/l
      - Exposure time: 21 d
      - Method: OECD Test Guideline 211
      - Remarks: No toxicity at the limit of solubility.

  - Toxicity to microorganisms:
    - \( \text{EC50} \): > 2,000 mg/l
      - Exposure time: 3 h
      - Method: 88/302/EC

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

  - \( \text{LC50} \) (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

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

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
NOEC (Daphnia magna (Water flea)): 0.0035 µg/l
Exposure time: 21 d
Method: OECD Test Guideline 211
Remarks: Based on data from similar materials

Persistence and degradability

Components:

Corn oil:
Biodegradability: Readily biodegradable.
Remarks: Based on data from similar materials

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

Bioaccumulative potential

Components:

Corn oil:
Partition coefficient: n-octanol/water: No data available

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

Partition coefficient: n-octanol/water: log Pow: 8.023

Lambda-cyhalothrin (ISO):
Bioaccumulation: Bioconcentration factor (BCF): 2,240
Method: OECD Test Guideline 305

Partition coefficient: n-octanol/water: log Pow: 7.0 (68 °F / 20 °C)
Mobility in soil

Components:

lambda-cyhalothrin (ISO):
Distribution among environmental compartments: log Koc: 5.5

Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods:
Waste from residues: Dispose of in accordance with local regulations.
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

International Regulations

UNRTDG
UN number: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (lambda-cyhalothrin (ISO))
Class: 9
Packing group: III
Labels: 9

IATA-DGR
UN/ID No.: UN 3082
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (lambda-cyhalothrin (ISO))
Class: 9
Packing group: III
Labels: Miscellaneous
Packing instruction (cargo aircraft): 964
Packing instruction (passenger aircraft): 964
Environmentally hazardous: yes

IMDG-Code
UN number: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (lambda-cyhalothrin (ISO))
Class: 9
Packing group: III
Labels: 9
EmS Code: F-A, S-F
Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

49 CFR
UN/ID/NA number : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (lambda-cyhalothrin (ISO))
Class : 9
Packing group : III
Labels : CLASS 9
ERG Code : 171
Marine pollutant : yes(lambda-cyhalothrin (ISO))
Remarks : Above applies only to containers over 119 gallons or 450 liters., Shipment by ground under DOT is non-regulated; however it may be shipped per the applicable hazard classification to facilitate multi-modal transport involving ICAO (IATA) or IMO.

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

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
Specific target organ toxicity (single or repeated exposure)
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations
Pennsylvania Right To Know
Corn oil 8001-30-7
Decamethylcyclopentasiloxane 541-02-6
California Permissible Exposure Limits for Chemical Contaminants

The ingredients of this product are reported in the following inventories:

- AICS: not determined
- DSL: not determined
- IECSC: not determined

SECTION 16. OTHER INFORMATION

Further information

**NFPA 704:**

- Flammability: 1
- Health: 1
- Instability: 0

**HMIS® IV:**

- HEALTH: / 4
- FLAMMABILITY: 1
- PHYSICAL HAZARD: 0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

- ACGIH: USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL: USA. NIOSH Recommended Exposure Limits
- OSHA CARC: OSHA Specifically Regulated Chemicals/Carcinogens
- US WEEL: USA. Workplace Environmental Exposure Levels (WEEL)
- ACGIH / TWA: 8-hour, time-weighted average
- ACGIH / STEL: Short-term exposure limit
- NIOSH REL / TWA: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
- NIOSH REL / C: Ceiling value not to be exceeded at any time.
- OSHA CARC / PEL: Permissible exposure limit (PEL)
- OSHA CARC / STEL: Excursion limit
- US WEEL / TWA: 8-hr TWA

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the
SAFETY DATA SHEET

Lambda-Cyhalothrin / Decamethylcyclopentasiloxane Formulation

German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; 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; ICAO - 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; 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 substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative


Revision Date : 10/10/2020

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.

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