SECTION 1. IDENTIFICATION

Product name: Pirimiphos-Methyl / Lambda-Cyhalothrin 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 (Oral): Category 4
Acute toxicity (Inhalation): Category 3
Skin irritation: Category 2
Eye irritation: Category 2B
Carcinogenicity (Inhalation): Category 2
Specific target organ toxicity - single exposure: Category 1 (Central nervous system, Nervous system)

GHS label elements
Hazard pictograms:

Signal Word: Danger
Hazard Statements:
H302 Harmful if swallowed.
H315 + H320 Causes skin and eye irritation.
H331 Toxic if inhaled.
H351 Suspected of causing cancer if inhaled.
H370 Causes damage to organs (Central nervous system, Nervous system).

Precautionary Statements:
Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
SAFETY DATA SHEET

Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation

Version 4.6  Revision Date: 08/27/2021  SDS Number: 1204432-00014  Date of last issue: 04/09/2021  Date of first issue: 01/09/2017

P260 Do not breathe dust, fume, gas, mist, vapors or spray.
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, protective clothing, eye protection and face protection.

Response:
P301 + P312 + P330 IF SWALLOWED: Call a doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor.
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.
P332 + P313 IF skin irritation occurs: Get medical attention.
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>Polyvinyl chloride</td>
<td>9002-86-2</td>
<td>&gt;= 70 - &lt; 90</td>
</tr>
<tr>
<td>Pirimiphos-methyl (ISO)</td>
<td>29232-93-7</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
<tr>
<td>lambda-cyhalothrin (ISO)</td>
<td>91465-08-6</td>
<td>&gt;= 5 - &lt; 10</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>&gt;= 0.1 - &lt; 1</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 for at least 15 minutes while removing 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 if swallowed. Causes skin and eye irritation. Toxic if inhaled. Suspected of causing cancer if inhaled. 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 firefighting: Exposure to combustion products may be a hazard to health.

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

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: Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

Sweep up or vacuum up spillage and collect in suitable container for disposal.
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.

See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
If sufficient ventilation is unavailable, use with local exhaust ventilation.
Do not get on skin or clothing.
Do not breathe dust, fume, gas, mist, vapors or spray.
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.

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.

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

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type</th>
<th>Control parameter</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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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. Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices). Minimize open handling.

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,
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**: solid

**Color**: No data available

**Odor**: characteristic

**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**: Not applicable

**Evaporation rate**: No data available

**Flammability (solid, gas)**: Not classified as a flammability hazard

**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**: No data available

**Solubility(ies)**: No data available
Water solubility: insoluble
Partition coefficient: n-octanol/water: No data available
Autoignition temperature: No data available
Decomposition temperature: No data available
Viscosity
Viscosity, kinematic: No data available
Explosive properties: Not explosive
Oxidizing properties: The substance or mixture is not classified as oxidizing.
Molecular weight: No data available
Particle size: No data available

SECTION 10. STABILITY AND REACTIVITY
Reactivity: Not classified as a reactivity hazard.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions: Can react with strong oxidizing agents.
Conditions to avoid: None known.
Incompatible materials: Oxidizing agents
Hazardous decomposition products: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION
Information on likely routes of exposure
Skin contact
Ingestion
Eye contact
Acute toxicity
Harmful if swallowed.
Toxic if inhaled.
Product:
Acute oral toxicity: Acute toxicity estimate: 654.55 mg/kg
Method: Calculation method
Acute inhalation toxicity: Acute toxicity estimate: 0.7505 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method
Acute dermal toxicity: Acute toxicity estimate: 4,963 mg/kg
Method: Calculation method
Components:

Pirimiphos-methyl (ISO):
Acute oral toxicity: LD50 (Rat): 1,180 mg/kg
LD50 (Rat): 2,400 - 5,976 mg/kg
LD50 (Mouse): > 575 mg/kg
LD50 (Dog): > 1,500 mg/kg
Acute inhalation toxicity: LC50 (Rat): > 5.04 mg/l
Exposure time: 4 h
Acute dermal toxicity: LD50 (Rabbit): 2,000 mg/kg
LD50 (Rat): > 4,592 mg/kg

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

Titanium dioxide:
Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity: LC50 (Rat): > 6.82 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Skin corrosion/irritation
Causes skin irritation.

Components:
Pirimiphos-methyl (ISO):
Species: Rabbit
Result: irritating
Components:

**Pirimiphos-methyl (ISO):**
- Species: Rabbit
- Result: Mild eye irritation

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

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

**Serious eye damage/eye irritation**
Causes eye irritation.

**Respiratory or skin sensitization**

**Skin sensitization**
Not classified based on available information.

**Respiratory sensitization**
Not classified based on available information.

Components:

**Pirimiphos-methyl (ISO):**
- Test Type: Maximization Test
- Routes of exposure: Dermal
- Species: Guinea pig
- Result: Not a skin sensitizer.

**lambda-cyhalothrin (ISO):**
- Test Type: Magnusson-Kligman-Test
- Routes of exposure: Dermal
- Species: Guinea pig
- Result: Not a skin sensitizer.

**Titanium dioxide:**
- Test Type: Local lymph node assay (LLNA)
## SAFETY DATA SHEET

### Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation

<table>
<thead>
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<th>SDS Number:</th>
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</tr>
</tbody>
</table>

### Routes of exposure
- Skin contact

### Species
- Mouse

### Result
- negative

### Germ cell mutagenicity
- Not classified based on available information.

### Components:

#### Pirimiphos-methyl (ISO):
- **Genotoxicity in vitro**
  - Test Type: Bacterial reverse mutation assay (AMES)
    - Result: equivocal
  - Test Type: sister chromatid exchange assay
    - Result: positive

- **Genotoxicity in vivo**
  - Test Type: Micronucleus test
    - Species: Mouse
    - Result: negative
  - Test Type: Rodent dominant lethal test (germ cell) (in vivo)
    - Species: Mouse
    - 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

#### Titanium dioxide:
- **Genotoxicity in vitro**
  - Test Type: Bacterial reverse mutation assay (AMES)
    - Result: negative

- **Genotoxicity in vivo**
  - Test Type: In vivo micronucleus test
    - Species: Mouse
Carcinogenicity

Suspected of causing cancer if inhaled.

Components:

**Pirimiphos-methyl (ISO):**

- **Species**: Rat
- **Application Route**: Oral
- **Exposure time**: 2 Years
- **Result**: negative

- **Species**: Mouse
- **Application Route**: Oral
- **Exposure time**: 80 weeks
- **Result**: negative

**Carcinogenicity - Assessment**: Animal testing did not show any carcinogenic effects.

**lambda-cyhalothrin (ISO):**

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

**Titanium dioxide:**

- **Species**: Rat
- **Application Route**: inhalation (dust/mist/fume)
- **Exposure time**: 2 Years
- **Method**: OECD Test Guideline 453
- **Result**: positive
- **Remarks**: The mechanism or mode of action may not be relevant in humans.

**Carcinogenicity - Assessment**: Limited evidence of carcinogenicity in inhalation studies with animals.

**IARC**

Group 2B: Possibly carcinogenic to humans

13463-67-7

**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:**

**Pirimiphos-methyl (ISO):**
- Effects on fertility:
  - Test Type: Two-generation reproduction toxicity study
  - Species: Rat
  - Application Route: Oral
  - Fertility: NOAEL: 15.4 mg/kg body weight
  - Result: No effects on fertility.

- Effects on fetal development:
  - Test Type: Development
  - Species: Rat
  - Application Route: Oral
  - Developmental Toxicity: NOAEL: 150 mg/kg body weight
  - Result: No effects on early embryonic development.
  - Remarks: Maternal toxicity observed.

  - Test Type: Development
  - Species: Rabbit
  - Application Route: Oral
  - Developmental Toxicity: NOAEL: 48 mg/kg body weight
  - Result: No effects on early embryonic development.
  - Remarks: Maternal toxicity observed.

**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.
## SAFETY DATA SHEET

**Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation**

**Version** 4.6  **Revision Date:** 08/27/2021  **SDS Number:** 1204432-00014  **Date of last issue:** 04/09/2021  **Date of first issue:** 01/09/2017

Body weight gain, Reduced fetal weight.
Remarks: Based on data from similar materials

### STOT-single exposure
Causes damage to organs (Central nervous system, Nervous system).

#### Components:

**Pirimiphos-methyl (ISO):**
- **Target Organs**: Central nervous system
- **Assessment**: Causes damage to organs.

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

### STOT-repeated exposure
Not classified based on available information.

#### Components:

**Pirimiphos-methyl (ISO):**
- **Remarks**: Not classified due to inconclusive data.

### Repeated dose toxicity

#### Components:

**Pirimiphos-methyl (ISO):**
- **Species**: Rat
  - **NOAEL**: 0.5 mg/kg
  - **LOAEL**: 2.5 mg/kg
  - **Application Route**: Oral
  - **Exposure time**: 28 d
  - **Target Organs**: Central nervous system
  - **Symptoms**: Cholinesterase inhibition

- **Species**: Dog
  - **LOAEL**: 2 mg/kg
  - **Application Route**: Oral
  - **Exposure time**: 13 Weeks
  - **Target Organs**: Central nervous system
  - **Symptoms**: Cholinesterase inhibition

- **Species**: Rat
  - **NOAEL**: 25 mg/kg
  - **Application Route**: Oral
  - **Exposure time**: 90 d
  - **Target Organs**: Central nervous system
  - **Symptoms**: Cholinesterase inhibition
  - **Remarks**: No significant adverse effects were reported
### SAFETY DATA SHEET

**Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation**

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</tbody>
</table>

<table>
<thead>
<tr>
<th>Species</th>
<th>LOAEL</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>Target Organs</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog</td>
<td>0.5 mg/kg</td>
<td>Oral</td>
<td>2 y</td>
<td>Central nervous system</td>
<td>Cholinesterase inhibition</td>
</tr>
<tr>
<td>Rat</td>
<td>2.1 mg/kg</td>
<td>Oral</td>
<td>2 y</td>
<td>Central nervous system</td>
<td>Cholinesterase inhibition</td>
</tr>
</tbody>
</table>

**lambda-cyhalothrin (ISO):**

<table>
<thead>
<tr>
<th>Species</th>
<th>NOAEL</th>
<th>LOAEL</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>Target Organs</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog</td>
<td>2.5 mg/kg</td>
<td>12.5 mg/kg</td>
<td>Oral (feed)</td>
<td>90 d</td>
<td>Nervous system</td>
<td>Reduced body weight gain, reduced food consumption</td>
</tr>
<tr>
<td>Rat</td>
<td>10 mg/kg</td>
<td>50 mg/kg</td>
<td>Dermal</td>
<td>21 d</td>
<td>Nervous system</td>
<td></td>
</tr>
<tr>
<td>Rat</td>
<td>0.08 mg/kg</td>
<td>0.9 mg/kg</td>
<td>Inhalation</td>
<td>21 d</td>
<td>Nervous system</td>
<td></td>
</tr>
<tr>
<td>Dog</td>
<td>0.1 mg/kg</td>
<td>0.5 mg/kg</td>
<td>Oral</td>
<td>1 y</td>
<td>Nervous system</td>
<td>Gastrointestinal disturbance, Vomiting, Convulsions, ataxia, Liver effects</td>
</tr>
</tbody>
</table>

**Titanium dioxide:**

<table>
<thead>
<tr>
<th>Species</th>
<th>NOAEL</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>Target Organs</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>24,000 mg/kg</td>
<td>Ingestion</td>
<td>28 Days</td>
<td>Nervous system</td>
<td></td>
</tr>
</tbody>
</table>

Species: Dog
LOAEL: 0.5 mg/kg
Application Route: Oral
Exposure time: 2 y
Target Organs: Central nervous system
Symptoms: Cholinesterase inhibition

Species: Rat
LOAEL: 2.1 mg/kg
Application Route: Oral
Exposure time: 2 y
Target Organs: Central nervous system
Symptoms: Cholinesterase inhibition

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: Rat
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

Species: Rat
NOAEL: 24,000 mg/kg
Application Route: Ingestion
Exposure time: 28 Days
NOAEL: 10 mg/m³
Application Route: inhalation (dust/mist/fume)
Exposure time: 2 y

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Components:

Pirimiphos-methyl (ISO):
Ingestion: Symptoms: Nausea, Vomiting, Dizziness, confusion, Headache, Weakness, stomach discomfort, Blurred vision, muscle twitching

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.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Pirimiphos-methyl (ISO):
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 0.2 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 0.00021 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants: EC50 (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity): NOEC (Pimephales promelas (fathead minnow)): 0.13 mg/l
Exposure time: 35 d
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC (Daphnia magna (Water flea)): 0.00011 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

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

### 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

### Titanium dioxide:
- **Toxicity to fish**
  - **LC50 (Oncorhynchus mykiss (rainbow trout)):** > 100 mg/l
    - Exposure time: 96 h
    - Method: OECD Test Guideline 203
- **Toxicity to daphnia and other aquatic invertebrates**
  - **EC50 (Daphnia magna (Water flea)):** > 100 mg/l
    - Exposure time: 48 h
- **Toxicity to algae/aquatic plants**
  - **EC50 (Skeletonema costatum (marine diatom)):** > 10,000 mg/l
    - Exposure time: 72 h
- **Toxicity to microorganisms**
  - **EC50:** > 1,000 mg/l
    - Exposure time: 3 h
    - Method: OECD Test Guideline 209

### Persistence and degradability

#### Components:
- **Pirimiphos-methyl (ISO):**
  - Stability in water: Hydrolysis: 50 % (117 d)
Partition coefficient: n-octanol/water: log Pow: 4.2

**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

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**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.

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**SECTION 14. TRANSPORT INFORMATION**

**International Regulations**

**UNRTDG**

- **UN number**: UN 2811
- **Proper shipping name**: TOXIC SOLID, ORGANIC, N.O.S. (lambda-cyhalothrin (ISO), Pirimiphos-methyl (ISO))
- **Class**: 6.1
- **Packing group**: III
- **Labels**: Toxic

**IATA-DGR**

- **UN/ID No.**: UN 2811
- **Proper shipping name**: Toxic solid, organic, n.o.s. (lambda-cyhalothrin (ISO), Pirimiphos-methyl (ISO))
- **Class**: 6.1
- **Packing group**: III
- **Labels**: Toxic
- **Packing instruction (cargo aircraft)**: 677
- **Packing instruction (passenger aircraft)**: 670

**IMDG-Code**

- **UN number**: UN 2811
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (lambda-cyhalothrin (ISO), Pirimiphos-methyl (ISO))
Class: 6.1
Packing group: III
Labels: F-A, S-A
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 2811
Proper shipping name: Toxic solids, organic, n.o.s. (lambda-cyhalothrin (ISO), Pirimiphos-methyl (ISO))
Class: 6.1
Packing group: III
Labels: TOXIC
ERG Code: 154
Marine pollutant: yes (lambda-cyhalothrin (ISO), Pirimiphos-methyl (ISO))

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)
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:

Pirimiphos-methyl (ISO) 29232-93-7 >= 10 - < 20 %
US State Regulations

Pennsylvania Right To Know
Polyvinyl chloride 9002-86-2
Pirimiphos-methyl (ISO) 29232-93-7
lambda-cyhalothrin (ISO) 91465-08-6

California Prop. 65
WARNING: This product can expose you to chemicals including Titanium dioxide, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

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: Health: 2/0/1 Flammability: 1/0/0 Instability: 0/0/0

HMIS® IV:

HEALTH 4/ 0/ 0
FLAMMABILITY 1/ 0/ 0
PHYSICAL HAZARD 0/ 0/ 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)
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA : 8-hour, time-weighted average
OSHA Z-1 / TWA : 8-hour time weighted average
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.