SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation

Manufacturer or supplier's details
Company : MSD
Address : Rua Coronel Bento Soares, 530
          Cruzeiro - Sao Paulo - Brazil  CEP 12730-340
Telephone : 908-740-4000
Emergency telephone : 1-908-423-6000
E-mail address : EHSDATASTEWARD@msd.com

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

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification in accordance with ABNT NBR 14725 Standard
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 3
Acute toxicity (Dermal) : Category 5
Skin irritation : Category 2
Eye irritation : Category 2B
Specific target organ toxicity - single exposure : Category 1 (Central nervous system)
Specific target organ toxicity - single exposure : Category 2 (Nervous system)
Short-term (acute) aquatic hazard : Category 1
Long-term (chronic) aquatic hazard : Category 1
SAFETY DATA SHEET

Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation

Version: 4.3  Revision Date: 27.08.2021  SDS Number: 1204406-00012  Date of last issue: 09.04.2021

GHS label elements in accordance with ABNT NBR 14725 Standard

Signal Word: Danger

Hazard pictograms:

Hazard Statements:
- H302 Harmful if swallowed.
- H313 May be harmful in contact with skin.
- H315 + H320 Causes skin and eye irritation.
- H331 Toxic if inhaled.
- H370 Causes damage to organs (Central nervous system).
- H371 May cause damage to organs (Nervous system).
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention:
P273 Avoid release to the environment.
P280 Wear protective gloves.

Response:
P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P391 Collect spillage.

Other hazards which do not result in classification
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture

Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyvinyl chloride</td>
<td>9002-86-2</td>
<td></td>
<td>&gt;= 70 - &lt; 90</td>
</tr>
<tr>
<td>Pirimiphos-methyl (ISO)</td>
<td>29232-93-7</td>
<td>Acute toxicity (Oral), Category 4</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute toxicity (Inhalation), Category 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute toxicity (Dermal), Category 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin irritation, Category 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye irritation, Category 2B</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specific target organ toxicity - single expo-</td>
<td></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation

Version 4.3 Revision Date: 27.08.2021 SDS Number: 1204406-00012 Date of last issue: 09.04.2021

Date of first issue: 09.01.2017

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC number</th>
<th>Acute toxicity (Oral), Category 3</th>
<th>Acute toxicity (Inhalation), Category 2</th>
<th>Acute toxicity (Dermal), Category 3</th>
<th>Eye irritation, Category 2B</th>
<th>Specific target organ toxicity - single exposure (Nervous system), Category 1</th>
<th>Short-term (acute) aquatic hazard, Category 1</th>
<th>Long-term (chronic) aquatic hazard, Category 1</th>
<th>Carcinogenicity (Inhalation), Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>lambda-cyhalothrin (ISO)</td>
<td>91465-08-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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. May be harmful in contact with skin. Causes skin and eye irritation. Toxic 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 fire fighting: 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 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. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: 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.

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 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.

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.

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>
</table>

5 / 20
### Polyvinyl chloride

<table>
<thead>
<tr>
<th>TWA (Respirable particulate matter)</th>
<th>1 mg/m³</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wipe limit</td>
<td>600 µg/100 cm²</td>
<td>Internal</td>
</tr>
</tbody>
</table>

### Pirimiphos-methyl (ISO)

<table>
<thead>
<tr>
<th>TWA</th>
<th>60 µg/m³ (OEB 3)</th>
<th>Internal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wipe limit</td>
<td>50 µg/100 cm²</td>
<td>Internal</td>
</tr>
</tbody>
</table>

### Lambda-cyhalothrin (ISO)

<table>
<thead>
<tr>
<th>TWA</th>
<th>5 µg/m³ (OEB 4)</th>
<th>Internal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wipe limit</td>
<td>50 µg/100 cm²</td>
<td>Internal</td>
</tr>
</tbody>
</table>

### Titanium dioxide

<table>
<thead>
<tr>
<th>TWA</th>
<th>10 mg/m³ (Titanium dioxide)</th>
<th>ACGIH</th>
</tr>
</thead>
</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. 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**

- If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

**Filter type**

- Particulates type

**Hand protection**

- 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.

## 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) 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
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. 
May be harmful in contact with skin. 
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: 4.964 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
Test atmosphere: dust/mist
Exposure time: 4 h

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
Test atmosphere: dust/mist
Exposure time: 4 h
Assessment: The substance or mixture has no acute inhalation toxicity

Skin corrosion/irritation
Causes skin irritation.

Components:

Pirimiphos-methyl (ISO):
Species: Rabbit
Result: Irritating

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

Titanium dioxide:
Species: Rabbit
Result: No skin irritation

Serious eye damage/eye irritation
Causes eye irritation.

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

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)
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
SAFETY DATA SHEET

Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation

**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
Result: negative

**Carcinogenicity**
Not classified based on available information.

**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
Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation

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

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.

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.

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.
- **Remarks:** Based on data from similar materials

### STOT-single exposure
- Causes damage to organs (Central nervous system).
- May cause damage to organs (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
### 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>Central 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>
</tbody>
</table>

<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>0.08 mg/kg</td>
<td>0.9 mg/kg</td>
<td>oral (feed)</td>
<td>21 d</td>
<td>Nervous system</td>
<td></td>
</tr>
</tbody>
</table>

### Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation

<table>
<thead>
<tr>
<th>LOAEL</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>Target Organs</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5 mg/kg</td>
<td>Oral</td>
<td>28 d</td>
<td>Central nervous system</td>
<td>cholinesterase inhibition</td>
</tr>
<tr>
<td>2 mg/kg</td>
<td>Oral</td>
<td>13 Weeks</td>
<td>Central nervous system</td>
<td>cholinesterase inhibition</td>
</tr>
<tr>
<td>25 mg/kg</td>
<td>Oral</td>
<td>90 d</td>
<td>Central nervous system</td>
<td>cholinesterase inhibition</td>
</tr>
<tr>
<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>2.1 mg/kg</td>
<td>Oral</td>
<td>2 y</td>
<td>Central nervous system</td>
<td>cholinesterase inhibition</td>
</tr>
</tbody>
</table>

**Remarks:** No significant adverse effects were reported
### 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

### Titanium dioxide:

#### Species:
- **Rat**

#### NOAEL:
- **24.000 mg/kg**

#### Application Route:
- **Ingestion**

#### Exposure time:
- **28 Days**

#### Species:
- **Rat**

#### 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.

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

### 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
<table>
<thead>
<tr>
<th>Method</th>
<th>EC50 (Daphnia magna (Water flea)): 0,00021 mg/l</th>
<th>Exposure time: 48 h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EC50 (Pseudokirchneriella subcapitata (green algae)): &gt; 1 mg/l</td>
<td>Exposure time: 72 h</td>
</tr>
</tbody>
</table>

**Method: OECD Test Guideline 202**

**Remarks:** Based on data from similar materials

<table>
<thead>
<tr>
<th>Method</th>
<th>LC50 (Oncorhynchus mykiss (rainbow trout)): 0,00019 mg/l</th>
<th>Exposure time: 96 h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,00021 mg/l</td>
<td>Exposure time: 96 h</td>
</tr>
</tbody>
</table>

**Method: OECD Test Guideline 203**

**Remarks:** Based on data from similar materials

<table>
<thead>
<tr>
<th>Method</th>
<th>EC50 (Daphnia magna (Water flea)): 0,00004 mg/l</th>
<th>Exposure time: 48 h</th>
</tr>
</thead>
</table>

**Remarks:** Based on data from similar materials

<table>
<thead>
<tr>
<th>Method</th>
<th>NOEC (Daphnia magna (Water flea)): 0,00011 mg/l</th>
<th>Exposure time: 21 d</th>
</tr>
</thead>
</table>

**Method: OECD Test Guideline 201**

**Remarks:** Based on data from similar materials

<table>
<thead>
<tr>
<th>Method</th>
<th>NOEC (Pimephales promelas (fathead minnow)): 0,13 mg/l</th>
<th>Exposure time: 35 d</th>
</tr>
</thead>
</table>

**Method: OECD Test Guideline 210**

**Remarks:** Based on data from similar materials

<table>
<thead>
<tr>
<th>Method</th>
<th>NOEC (Daphnia magna (Water flea)): 0,00011 mg/l</th>
<th>Exposure time: 21 d</th>
</tr>
</thead>
</table>

**Method: OECD Test Guideline 211**

**Remarks:** Based on data from similar materials

<table>
<thead>
<tr>
<th>Method</th>
<th>NOEC (Pimephales promelas (fathead minnow)): 0,000062 mg/l</th>
<th>Exposure time: 32 d</th>
</tr>
</thead>
</table>

**Method: OECD Test Guideline 210**

**Remarks:** Based on data from similar materials

<table>
<thead>
<tr>
<th>Method</th>
<th>NOEC (Daphnia magna (Water flea)): 0,0035 µg/l</th>
<th>Exposure time: 21 d</th>
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</thead>
</table>

**Method: OECD Test Guideline 211**

**Remarks:** Based on data from similar materials

<table>
<thead>
<tr>
<th>Method</th>
<th>NOEC (Pimephales promelas (fathead minnow)): 0,00062 mg/l</th>
<th>Exposure time: 32 d</th>
</tr>
</thead>
</table>

**Method: OECD Test Guideline 210**

**Remarks:** Based on data from similar materials
toxicity)

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)

Bioaccumulative potential

Components:
Pirimiphos-methyl (ISO):
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 (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**

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN 2811</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>TOXIC SOLID, ORGANIC, N.O.S. (lambda-cyhalothrin (ISO), Pirimiphos-methyl (ISO))</td>
</tr>
<tr>
<td>Class</td>
<td>6.1</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
</tr>
<tr>
<td>Labels</td>
<td>6.1</td>
</tr>
</tbody>
</table>

**IATA-DGR**

<table>
<thead>
<tr>
<th>UN/ID No.</th>
<th>UN 2811</th>
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</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>Toxic solid, organic, n.o.s. (lambda-cyhalothrin (ISO), Pirimiphos-methyl (ISO))</td>
</tr>
<tr>
<td>Class</td>
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</tr>
<tr>
<td>Packing group</td>
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<tr>
<td>Labels</td>
<td>Toxic</td>
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<tr>
<td>Packing instruction (cargo aircraft)</td>
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</tr>
<tr>
<td>Packing instruction (passenger aircraft)</td>
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</table>

**IMDG-Code**

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN 2811</th>
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<tr>
<td>Proper shipping name</td>
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<td>III</td>
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<tr>
<td>Labels</td>
<td>6.1</td>
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<tr>
<td>EmS Code</td>
<td>F-A, S-A</td>
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<tr>
<td>Marine pollutant</td>
<td>yes</td>
</tr>
</tbody>
</table>

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

**ANTT**

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN 2811</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>Class</td>
<td>6.1</td>
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<tr>
<td>Packing group</td>
<td>III</td>
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<tr>
<td>Labels</td>
<td>6.1</td>
</tr>
<tr>
<td>Hazard Identification Number</td>
<td>60</td>
</tr>
</tbody>
</table>

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

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

National List of Carcinogenic Agents for Humans - (LINACH)

Group 2B: Possibly carcinogenic to humans
Titanium dioxide 13463-67-7

Brazil. List of chemicals controlled by the Federal Police : Not applicable

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

Full text of other abbreviations
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA : 8-hour, time-weighted average

AIIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - 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; 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
Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation

Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals 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; WHMIS - Workplace Hazardous Materials Information System

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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