# SAFETY DATA SHEET

# Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation

| Version | Revision Date: | SDS Number: | Date of last issue: 06.04.2024 |
|---|---|---|---|
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## Section 1: Identification

**Product identifier** : Pirimiphos-Methyl / Lambda-Cyhalothrin Formulation

**Recommended use of the chemical and restrictions on use**

Recommended use : Veterinary product
Restrictions on use : Not applicable

**Manufacturer or supplier's details**

Company : MSD

Address : 50 Tuas West Drive
Singapore - Singapore 638408

Telephone : +1-908-740-4000

Emergency telephone number : 65 6697 2111 (24/7/365)

E-mail address : EHSDATASTEWARD@msd.com

## Section 2: Hazard identification

**Classification of the substance or mixture**

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 3

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 2

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

**GHS Label elements, including precautionary statements**

Hazard pictograms :

Signal word : Danger

Hazard statements :
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious 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:**

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ 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.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ 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.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

**Storage:**

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards which do not result in classification**

None known.

## Section 3: Composition/information on ingredients

Substance / Mixture : Mixture

**Components**

| Chemical name | CAS-No. | Concentration (% w/w) |
|---|---|---|
| Polyvinyl chloride | 9002-86-2 | >= 70 -< 90 |
| Pirimiphos-methyl (ISO) | 29232-93-7 | >= 10 -< 20 |
| lambda-cyhalothrin (ISO) | 91465-08-6 | >= 2.5 -< 10 |
| Titanium dioxide | 13463-67-7 | >= 0.1 -< 1 |

## Section 4: First-aid measures

**Description of necessary 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**

Risks : Harmful if swallowed.
Causes skin irritation.
Causes serious 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).

**Indication of any immediate medical attention and special treatment needed**

Treatment : Treat symptomatically and supportively.

## Section 5: Fire-fighting measures

**Extinguishing media**

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

Unsuitable extinguishing media : None known.

**Special hazards arising from the substance or mixture**

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

**Special protective actions for fire-fighters**

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

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.

## Section 6: Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

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

**Environmental precautions**

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**

Methods for cleaning up : Surround spill with absorbents and place a damp covering over the area to minimise entry of the material into the air.

Add excess liquid to allow the material to enter into solution.
Soak up with inert absorbent material.
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

**Precautions for safe handling**

| | | |
|---|---|---|
| Technical measures | : | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section. |
| Local/Total ventilation | : | If sufficient ventilation is unavailable, use with local exhaust ventilation. |
| Advice on safe handling | : | Do not get on skin or clothing.<br>Do not breathe dust, fume, gas, mist, vapours or spray.<br>Do not swallow.<br>Do not get in eyes.<br>Wash skin thoroughly after handling.<br>Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment<br>Keep container tightly closed.<br>Do not eat, drink or smoke when using this product.<br>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.<br>When using do not eat, drink or smoke.<br>Wash contaminated clothing before re-use.<br>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, including any incompatibilities**

| | | |
|---|---|---|
| Conditions for safe storage | : | Keep in properly labelled containers.<br>Store locked up.<br>Keep tightly closed.<br>Keep in a cool, well-ventilated place.<br>Store in accordance with the particular national regulations. |
| Materials to avoid | : | Do not store with the following product types:<br>Explosives |

## Section 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure Limits

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| Polyvinyl chloride | 9002-86-2 | TWA (Respirable particulate matter) | 1 mg/m3 | ACGIH |
| Pirimiphos-methyl (ISO) | 29232-93-7 | TWA | 60 µg/m3 (OEB 3) | Internal |
| | Further information: Skin | | | |
| | | Wipe limit | 600 µg/100 cm² | Internal |
| lambda-cyhalothrin (ISO) | 91465-08-6 | TWA | 5 µg/m3 (OEB 4) | Internal |
| | Further information: Skin | | | |
| | | Wipe limit | 50 µg/100 cm² | Internal |
| Titanium dioxide | 13463-67-7 | PEL (long term) | 10 mg/m3 | SG OEL |

**Appropriate engineering control 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.

**Individual protection measures, such as personal protective equipment (PPE)**

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

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

Filter type : Particulates type

Hand protection

| | | |
|---|---|---|
| Material | : | Chemical-resistant gloves |
| Remarks | : | Consider double gloving. |

## Section 9: Physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | solid |
| Colour | : | No data available |
| Odour | : | characteristic |
| Odour 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 |
| Vapour pressure | : | No data available |
| Relative vapour 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 |
| Auto-ignition 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 characteristics | | |
| 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<br>Method: Calculation method |
| Acute inhalation toxicity | : | Acute toxicity estimate: 0.7676 mg/l<br>Exposure time: 4 h<br>Test atmosphere: dust/mist<br>Method: Calculation method |
| Acute dermal toxicity | : | Acute toxicity estimate: > 2,000 mg/kg<br>Method: Calculation method |

**Components:**

**Pirimiphos-methyl (ISO):**

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

**lambda-cyhalothrin (ISO):**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): 56 - 79 mg/kg<br><br>LD50 (Mouse): 20 mg/kg |
| Acute inhalation toxicity | : | LC50 (Rat): 0.06 mg/l<br>Exposure time: 4 h<br>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<br>Application Route: Intraperitoneal |

**Titanium dioxide:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): > 5,000 mg/kg |
| Acute inhalation toxicity | : | LC50 (Rat): > 6.82 mg/l<br>Exposure time: 4 h<br>Test atmosphere: dust/mist<br>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 serious 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 sensitisation**

**Skin sensitisation**

Not classified based on available information.

**Respiratory sensitisation**

Not classified based on available information.

**Components:**

**Pirimiphos-methyl (ISO):**

| | | |
|---|---|---|
| Test Type | : | Maximisation Test |
| Exposure routes | : | Dermal |
| Species | : | Guinea pig |
| Result | : | Not a skin sensitizer. |

**lambda-cyhalothrin (ISO):**

| | | |
|---|---|---|
| Test Type | : | Magnusson-Kligman-Test |
| Exposure routes | : | Dermal |
| Species | : | Guinea pig |
| Result | : | Not a skin sensitizer. |

**Titanium dioxide:**

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

**Germ cell mutagenicity**

Not classified based on available information.

**Components:**

**Pirimiphos-methyl (ISO):**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Result: equivocal<br><br>Test Type: sister chromatid exchange assay<br>Result: positive |
| Genotoxicity in vivo | : | Test Type: Micronucleus test<br>Species: Mouse<br>Result: negative<br><br>Test Type: Rodent dominant lethal test (germ cell) (in vivo)<br>Species: Mouse<br>Result: negative |

**lambda-cyhalothrin (ISO):**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Result: negative<br><br>Test Type: Chromosomal aberration<br>Test system: Human lymphocytes<br>Result: negative<br><br>Test Type: unscheduled DNA synthesis assay<br>Test system: rat hepatocytes<br>Result: negative<br><br>Test Type: In vitro mammalian cell gene mutation test<br>Test system: mouse lymphoma cells<br>Result: negative |
| Genotoxicity in vivo | : | Test Type: Micronucleus test<br>Species: Mouse<br>Cell type: Bone marrow<br>Application Route: Intraperitoneal<br>Result: negative |

**Titanium dioxide:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Result: negative |
| Genotoxicity in vivo | : | Test Type: In vivo micronucleus test<br>Species: Mouse<br>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 |
| 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 - Assess- | : | Limited evidence of carcinogenicity in inhalation studies with |

ment animals.

**Reproductive toxicity**

Not classified based on available information.

**Components:**

**Pirimiphos-methyl (ISO):**

| | | |
|---|---|---|
| Effects on fertility | : | Test Type: Two-generation reproduction toxicity study<br>Species: Rat<br>Application Route: Oral<br>Fertility: NOAEL: 15.4 mg/kg body weight<br>Result: No effects on fertility |
| Effects on foetal development | : | Test Type: Development<br>Species: Rat<br>Application Route: Oral<br>Developmental Toxicity: NOAEL: 150 mg/kg body weight<br>Result: No effects on early embryonic development<br>Remarks: Maternal toxicity observed.<br><br>Test Type: Development<br>Species: Rabbit<br>Application Route: Oral<br>Developmental Toxicity: NOAEL: 48 mg/kg body weight<br>Result: No effects on early embryonic development<br>Remarks: Maternal toxicity observed. |

**lambda-cyhalothrin (ISO):**

| | | |
|---|---|---|
| Effects on fertility | : | Test Type: Three-generation study<br>Species: Rat<br>Application Route: oral (feed)<br>General Toxicity - Parent: NOAEL: 2 mg/kg body weight<br>General Toxicity F1: LOAEL: 6.7 mg/kg body weight<br>Symptoms: Reduced offspring weight gain<br>Result: No effects on fertility<br>Remarks: Based on data from similar materials |
| Effects on foetal development | : | Test Type: Development<br>Species: Rat<br>Application Route: Oral<br>General Toxicity Maternal: NOAEL: 10 mg/kg body weight<br>Developmental Toxicity: LOAEL: 15 mg/kg body weight<br>Result: No effects on foetal development, Reduced maternal body weight gain, Reduced foetal weight<br>Remarks: Based on data from similar materials<br><br>Test Type: Development<br>Species: Rabbit<br>Application Route: Oral |

General Toxicity Maternal: NOAEL: 10 mg/kg body weight
Developmental Toxicity: NOAEL: 30 mg/kg body weight
Result: No effects on foetal development, Reduced maternal body weight gain, Reduced foetal weight
Remarks: Based on data from similar materials

**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 |
| 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 |

| | | |
|---|---|---|
| Species | : | Dog |
| LOAEL | : | 0.5 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 2 yr |
| Target Organs | : | Central nervous system |
| Symptoms | : | cholinesterase inhibition |

| | | |
|---|---|---|
| Species | : | Rat |
| LOAEL | : | 2.1 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 2 yr |
| Target Organs | : | Central nervous system |
| Symptoms | : | cholinesterase inhibition |

**lambda-cyhalothrin (ISO):**

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

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

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

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

| | |
|---|---|
| | Liver effects |

**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 yr |

**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<br>Remarks: Can be absorbed through skin. |
| Eye contact | : | Symptoms: Eye irritation |
| Ingestion | : | Symptoms: Gastrointestinal disturbance |

## Section 12: Ecological information

**Toxicity**

**Components:**

**Pirimiphos-methyl (ISO):**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 0.2 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 0.00021 mg/l<br>Exposure time: 48 h<br>Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | EC50 (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l |

| | | |
|---|---|---|
| | | Exposure time: 72 h<br>Method: OECD Test Guideline 201 |
| M-Factor (Acute aquatic toxicity) | : | 1,000 |
| Toxicity to fish (Chronic toxicity) | : | NOEC (Pimephales promelas (fathead minnow)): 0.13 mg/l<br>Exposure time: 35 d<br>Method: OECD Test Guideline 210 |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC (Daphnia magna (Water flea)): 0.00011 mg/l<br>Exposure time: 21 d<br>Method: OECD Test Guideline 211 |
| M-Factor (Chronic aquatic toxicity) | : | 100 |

**lambda-cyhalothrin (ISO):**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 0.00019 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 203<br>Remarks: Based on data from similar materials<br><br>LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00021 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 203<br>Remarks: Based on data from similar materials |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 0.00004 mg/l<br>Exposure time: 48 h<br>Method: OECD Test Guideline 202<br>Remarks: Based on data from similar materials |
| M-Factor (Acute aquatic toxicity) | : | 10,000 |
| Toxicity to fish (Chronic toxicity) | : | NOEC (Pimephales promelas (fathead minnow)): 0.000062 mg/l<br>Exposure time: 32 d<br>Method: OECD Test Guideline 210<br>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<br>Exposure time: 21 d<br>Method: OECD Test Guideline 211<br>Remarks: Based on data from similar materials |
| M-Factor (Chronic aquatic toxicity) | : | 10,000 |

**Titanium dioxide:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l<br>Exposure time: 96 h |

| | | |
|---|---|---|
| | | Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): > 100 mg/l<br>Exposure time: 48 h |
| Toxicity to algae/aquatic plants | : | EC50 (Skeletonema costatum (marine diatom)): > 10,000 mg/l<br>Exposure time: 72 h |
| Toxicity to microorganisms | : | EC50: > 1,000 mg/l<br>Exposure time: 3 h<br>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<br>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 | : | Do not dispose of waste into sewer.<br>Dispose of in accordance with local regulations. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste han- |

dling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

## Section 14: Transport information

### International Regulations

**UNRTDG**

| | | |
|---|---|---|
| UN number | : | UN 2811 |
| UN proper shipping name | : | TOXIC SOLID, ORGANIC, N.O.S. (lambda-cyhalothrin (ISO), Pirimiphos-methyl (ISO)) |
| Transport hazard class(es) | : | 6.1 |
| Packing group | : | III |
| Labels | : | 6.1 |
| Environmental hazards | : | yes |

**IATA-DGR**

| | | |
|---|---|---|
| UN/ID No. | : | UN 2811 |
| UN proper shipping name | : | Toxic solid, organic, n.o.s. (lambda-cyhalothrin (ISO), Pirimiphos-methyl (ISO)) |
| Transport hazard class(es) | : | 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)) |
| Transport hazard class(es) | : | 6.1 |
| Packing group | : | III |
| Labels | : | 6.1 |
| EmS Code | : | F-A, S-A |
| Marine pollutant | : | yes |

### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### 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 specific for the product in question

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.

| | | |
|---|---|---|
| Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations | : | Not applicable |
| Fire Safety (Petroleum and Flammable Materials) Regulations | : | Not applicable |

**The components of this product are reported in the following inventories:**

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

## Section 16: Other information

| | | |
|---|---|---|
| Revision Date | : | 06.07.2024 |

**Further information**

| | | |
|---|---|---|
| Sources of key data used to compile the Safety Data Sheet | : | Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/ |

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

| | | |
|---|---|---|
| Date format | : | dd.mm.yyyy |

**Full text of other abbreviations**

| | | |
|---|---|---|
| ACGIH | : | USA. ACGIH Threshold Limit Values (TLV) |
| SG OEL | : | Singapore. Workplace Safety and Health (General Provisions) Regulations - First Schedule Permissible Exposure Limits of Toxic Substances. |
| ACGIH / TWA | : | 8-hour, time-weighted average |
| SG OEL / PEL (long term) | : | Permissible Exposure Level (PEL) Long Term |

AIIC - 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 con-

centration; 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; 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.

SG / EN