SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Pirimiphos-Methyl 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
Skin irritation: Category 2
Eye irritation: Category 2B
Specific target organ toxicity - single exposure: Category 1 (Central nervous system)
Short-term (acute) aquatic hazard: Category 1
Long-term (chronic) aquatic hazard: Category 1

GHS label elements in accordance with ABNT NBR 14725 Standard
Hazard pictograms:

Signal Word: Danger
Hazard Statements: H315 + H320 Causes skin and eye irritation. H370 Causes damage to organs (Central nervous system). H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements: Prevention:
P264 Wash skin thoroughly after handling. P273 Avoid release to the environment.
P280 Wear protective gloves.

Response:
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

Component Information

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Polyvinyl chloride</td>
</tr>
<tr>
<td></td>
<td>Pirimiphos-methyl (ISO)</td>
</tr>
<tr>
<td></td>
<td>Titanium dioxide</td>
</tr>
</tbody>
</table>

<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>Acute toxicity (Oral), Category 4</td>
<td>&gt;= 70 -&lt; 90</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 exposure (Central nervous system), Category 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Short-term (acute) aquatic hazard, Category 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long-term (chronic) aquatic hazard, Category 1</td>
<td></td>
</tr>
<tr>
<td>Pirimiphos-methyl (ISO)</td>
<td>29232-93-7</td>
<td>Carcinogenicity (Inhalation), Category 2</td>
<td>&gt;= 0.1 -&lt; 1</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</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. 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. 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: Causes skin and eye irritation. Causes damage to organs.

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

Notes to physician: Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

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

Unsuitable extinguishing media: None known.

Specific hazards during fire fighting: Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides Chlorine 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:**
- Use only with adequate 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
- 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.
- 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</th>
<th>Control parameter</th>
<th>Basis</th>
</tr>
</thead>
</table>

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SAFETY DATA SHEET

Pirimiphos-Methyl Formulation

<table>
<thead>
<tr>
<th>Form of exposure</th>
<th>TWA</th>
<th>Permissible concentration</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyvinyl chloride</td>
<td>9002-86-2</td>
<td>TWA (Respirable particulate matter)</td>
<td>1 mg/m³</td>
</tr>
<tr>
<td>Pirimiphos-methyl (ISO)</td>
<td>29232-93-7</td>
<td>TWA</td>
<td>60 µg/m³ (OEB 3)</td>
</tr>
<tr>
<td>Further information: Skin</td>
<td></td>
<td>Wipe limit</td>
<td>600 µg/100 cm²</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>TWA</td>
<td>10 mg/m³ (Titanium dioxide)</td>
</tr>
</tbody>
</table>

Engineering measures: All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. 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

Material: Consider double gloving.

Remarks: 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: yellow
Odor: characteristic
Odor Threshold: No data available
pH: No data available
SAFETY DATA SHEET

Pirimiphos-Methyl Formulation

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Date of first issue: 24.02.2017

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

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reac- : Can react with strong oxidizing agents.
SAFETY DATA SHEET
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Date of first issue: 24.02.2017

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
Not classified based on available information.

Product:
Acute oral toxicity: Acute toxicity estimate: > 5.000 mg/kg
Method: Calculation method

Acute inhalation toxicity: Acute toxicity estimate: > 10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity: Acute toxicity estimate: > 5.000 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

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

**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

**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.

**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

**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.

**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
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.

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

Components:
Pirimiphos-methyl (ISO):
Target Organs: Central 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  
LOAEL: 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 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

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
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

M-Factor (Acute aquatic toxicity)

- 1.000

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

M-Factor (Chronic aquatic toxicity)

- 100

**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

Mobility in soil
No data available

Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: Dispose of in accordance with local regulations.
Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Pirimiphos-methyl (ISO))
Class: 9
Packing group: III
Labels: 9

IATA-DGR
UN/ID No.: UN 3077
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Pirimiphos-methyl (ISO))
Class: 9
Packing group: III
Labels: Miscellaneous
Packing instruction (cargo aircraft): 956
Packing instruction (passenger aircraft): 956
Environmentally hazardous: yes

IMDG-Code
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Pirimiphos-methyl (ISO))
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Class: 9
Packing group: III
Labels: 9
EmS Code: F-A, S-F
Marine pollutant: yes

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

Domestic regulation

ANTT
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Pirimiphos-methyl (ISO))

Class: 9
Packing group: III
Labels: 9
Hazard Identification Number: 90

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

SAFETY DATA SHEET

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Date of last issue: 09.04.2021
Date of first issue: 24.02.2017

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

All abbreviations.

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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