

Material Safety Data Sheet

Pirimiphos-methyl 1.8%+Deltamethrin 0.2% DP

1. PRODUCT IDENTIFICATION

Product Name: Pirimiphos-methyl 1.8%+Deltamethrin 0.2% DP
 Common Name: Pirimiphos-methyl + Deltamethrin
 Chemical Family: Organophosphate (Pirimiphos-methyl)
 Pyrethroid (Deltamethrin)
 Chemical Formula: C₁₁H₂₀N₃O₃PS (Pirimiphos-methyl)
 C₂₂H₁₉Br₂NO₃ (Deltamethrin)
 Chemical Name: *O*-2-diethylamino-6-methylpyrimidin-4-yl *O,O*-dimethyl phosphorothioate (Pirimiphos-methyl)
 (*S*)- α -cyano-3-phenoxybenzyl (1*R*,3*R*)-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropanecarboxylate Roth: (*S*)- α -cyano-3-phenoxybenzyl (1*R*)-cis-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropanecarboxylate (Deltamethrin)
 CAS No.: 29232-93-7 (Pirimiphos-methyl)
 52918-63-5 (Deltamethrin)
 Product Use: Insecticide

2. COMPANY IDENTIFICATION:

Exporter:

CHICO CROP SCIENCE CO., LTD.

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 Shenzhen, China.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

| <u>Ingredient Name</u> | <u>CAS Registry Number</u> | <u>Typical Wt. w/w</u> |
|------------------------|----------------------------|------------------------|
| Pirimiphos-methyl | 29232-93-7 | 1.8% |
| Deltamethrin | 52918-63-5 | 0.2% |
| Inert | --- | to balance |

4. HAZARDS IDENTIFICATION

Emergency Overview

Off-white powder.

CAUTION!

KEEP OUT OF REACH OF CHILDREN

MAY CAUSED SKIN SLIGHT IRRITATION

MAY CAUSED EYE SLIGHT IRRITATION



Potential Health effects

Dermal contact, ingest and inhalation of the product are the primary routes to induce potential adverse health effects. Inhalation of aerosol during application of the product as part of its end use is another potential route of entry. Eye and skin irritation may occur from contact with the liquid or spray mixture.

5. FIRST AID MEASURES

If swallowed: People who take it by mistake drink plenty of warm water to induce vomiting. Never give anything by mouth to an unconscious person. Should be send to the hospital treatment immediately.

If in eye: Immediately rinse eyes with a large amount of running water. Hold eyelids apart to rinse. Consult a doctor.

If on skin: Wash with plenty of soap and water, including hair and under fingernails. Do not apply any medicating agents except on the advice of a physician. Remove contaminated clothing and decontaminate prior to use.

If Inhaled: Move victim from contaminated area to fresh air. Apply artificial respiration if necessary.

Notes to Physician:

There is no specific antidote, Treat symptomatically.

6. FIRE FIGHTING MEASURES

Fire and explosive Properties

| | |
|---------------------------|----------------|
| Auto-Ignition Temperature | Not applicable |
| Flash Point | Not available |

Extinguishing Media

Water fog, Carbon Dioxide, Dry Chemical, Foam, Sand.

Fire Fighting Instructions

The product is not flammable. If firing, fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear and self-contained breathing apparatus. Fire fighting equipment should be thoroughly decontaminated after use. Person who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

7. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Stop the leak, if possible. Ventilate the space involved. Absorb, sweep up, place in container for disposal. Shut off or remove all ignition sources. Prevent waterway contamination. Construct a dike to prevent spreading. Protect works with water spray. Collect run-off water and transfer to drums or tanks for later disposal.

8. HANDLING AND STORAGE

Handling

Harmful if swallowed, inhaled, or absorbed through the skin. Causes eye irritation. Do not breathe gas or allow to get in eyes, on skin, or on clothing. Wash hands, arm and face thoroughly with soap and warm water after use and before eating or smoking. Wash all contaminated clothing with soap and hot water before reuse. Do not contaminate feed or food items. Keep out of reach of children.

Storage

Store in a cool dry and air ventilating warehouse and protected from light. Avoid contacting with food, feed stuff and seed.

9. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye/Face Protection

Goggles and full-face shield should be used when needed to prevent liquid from face and getting into the eyes.

Skin Protection

Avoid skin contact. Use chemical-resistant gloves, and wear long sleeves and trousers to prevent dermal exposure.

Respiratory Protection

Under normal handling conditions no respiratory protection is needed. However, if needed to prevent respiratory irritation, either a respirator approved for dusts and mists, or one approved for pesticides.

10. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------|--|
| Color: | Off-white |
| Physical state: | Powder |
| Odor: | Pungent odor |
| Melting point: | 20.8 °C (tech.) (Pirimiphos-methyl); 100–102 °C (Deltamethrin). |

| | |
|---------------------------------|---|
| Boiling point: | N/A (Pirimiphos-methyl); N/A (Deltamethrin). |
| Vapor pressure: | 2 mPa (20 °C) (Pirimiphos-methyl); 1.24 × 10 ⁻⁵ mPa (25 °C, gas saturation method) (Deltamethrin) |
| Solubility in water: | In water 11 (pH 5), 10 (pH 7), 9.7 (pH 9) (all in mg/l, 20 °C). (Pirimiphos-methyl); In water <0.2 µg/l (25 °C). (Deltamethrin). |
| Solubility in organic solvents: | Miscible with most organic solvents, e.g. alcohols, ketones and halogenated hydrocarbons. (Pirimiphos-methyl); In dioxane 900, cyclohexanone 750, dichloromethane 700, acetone 500, benzene 450, DMSO 450, xylene 250, ethanol 15, isopropanol 6 (all in g/l, 20 °C). (Deltamethrin). |
| Partition coefficient: | K _{ow} logP = 4.2 (20 °C, unionized) (Pirimiphos-methyl); K _{ow} logP = 4.6 (25 °C) (Deltamethrin). |

11. STABILITY AND REACTIVITY

Stability

Hydrolyzed by concentrated acids and alkalis; DT₅₀ 2–117 d (pH range 4–9, most stable at pH 7). In sunlight, aqueous solution had DT₅₀ <1 h. (Pirimiphos-methyl);

Extremely stable on exposure to air. Stable ≤190 °C. Under uv irradiation and in sunlight, a *cis-trans* isomerization, splitting of the ester bond, and loss of bromine occur. More stable in acidic than in alkaline media; DT₅₀ 31 d (pH 8), 2.5 d (pH 9), stable at pH 5 and 7. (Deltamethrin)

Hazardous Polymerization

Does not occur.

Incompatibility

The product is not compatible with strong bases, strong acids agents.

Hazardous Decomposition Products

Not available

12. TOXICOLOGICAL INFORMATION

Acute Oral: Acute oral LD₅₀ for rats 1414, mice 1180 mg/kg. (Pirimiphos-methyl);
Acute oral LD₅₀ for rats ranges from 87 to >5000 mg/kg, depending
upon carrier and conditions of the study; for dogs >300 mg/kg.
(Deltamethrin)

Acute Dermal: Acute percutaneous LD₅₀ for rats >2000 mg/kg. (Pirimiphos-methyl);
Acute percutaneous LD₅₀ for rats and rabbits >2000 mg/kg.
(Deltamethrin)

Irritation: Slight skin and mild eye irritation (rabbits). (Pirimiphos-methyl);
Non-irritating to skin; mild eye irritant (rabbits). (Deltamethrin)

Sensitization: Mild skin sensitizer (M&K, guinea pigs). (Pirimiphos-methyl).
N/A (Deltamethrin)

Long-term Studies: (2 y) for rats 0.4, dogs 0.5 mg/kg b.w. daily. No teratogenic effects, and no concentration in adipose tissue. (Pirimiphos-methyl).
Non-mutagenic and non-teratogenic (mice, rats, rabbits).
(Deltamethrin)

13. ECOLOGICAL INFORMATION

Ecotoxicological Information

Pirimiphos-methyl

Effects on Birds: Acute oral LD₅₀ for bobwhite quail 40, Japanese quail 140, mallard ducks 1695 mg/kg.

Effects on Fish: LC₅₀ (96 h) for rainbow trout 0.64 mg/l; (48 h) for mirror carp 1.4 mg/l.

Effects on Daphnia: EC₅₀ (48 h) 0.21 µg/l; (21 d) 0.08 µg/l.

Effects on Algae: EC₅₀ 1.0 mg/l.

Effects on Bees: LD₅₀ (oral) 0.22 µg/bee; (contact) 0.12 µg/bee.

Deltamethrin

Effects on Birds: Acute oral LD₅₀ for bobwhite quail >2250 mg/kg. Dietary LC₅₀ (8 d) for bobwhite quail >5620 mg/kg diet. NOEL for reproduction for bobwhite quail 55, mallard ducks 70 mg/kg daily.

Effects on Fish: Toxic to fish under laboratory conditions; LC₅₀ (96 h) for rainbow trout 0.91, bluegill sunfish 1.4 µg/l. Not toxic to fish under natural conditions.

Effects on Daphnia: LC₅₀ (48 h) 0.56 µg/l.

Effects on Algae: EC₅₀ (96 h) for *Selenastrum capricornutum* >9.1 mg/l.

Effects on Bees: Toxic to bees; LD₅₀ (oral) 23 ng/bee; (contact) 12 ng/bee. Low LD₅₀ values under laboratory conditions do not represent a significant hazard to bees in normal field use.

Chemical Fate Information

Animals: In mammals, the P–O bond is cleaved extensively and *N*-dealkylation and/or conjugation is a further step in the metabolism of the pyrimidine leaving group. (Pirimiphos-methyl)

In rats, following oral administration, rapid absorption (*c.* 75% of dose) and rapid and complete excretion (75% within 24 h). Equivalent amounts excreted in urine and faeces. Low residues in organs, tissues and carcass, with highest residues found in fat, but no evidence of accumulation. The phenyl ring is hydroxylated, the ester bond hydrolysed, and the acid moiety is eliminated as the glucuronide and glycine conjugates. (Deltamethrin)

Plants: Rapidly evaporates. After 2–3 days, <10% remains on plants, including the degradation product *O*-2-ethylamino-6-methylpyrimidin-4-yl *O,O*-dimethyl phosphorothioate. On stored cereals, DT₅₀ >2 mo. (Pirimiphos-methyl)

No uptake through leaves and roots – non-systemic compound. No major metabolites. (Deltamethrin)

Soil/Environment: Soil DT₅₀ 4–10 d (lab., 4 soils). K_{oc} 950–8500 ml/g o.c. (6 soils, mean 3042 ml/g o.c.). Rapid degradation in water under acid conditions and relatively slow degradation under neutral and alkaline conditions, DT₅₀ 2 d (pH 4), 7 d (pH 5), 117 d (pH 7), 75 d (pH 9). Aqueous photolysis occurs rapidly. Low to medium volatilisation, efficiently degraded in air by photochemical oxidation. (Pirimiphos-methyl)

In soil, undergoes microbial degradation within 1–4 weeks. DT₅₀ (lab., aerobic, 25 °C) 18–35 d, (anaerobic, 25 °C) 32–105 d; DT₉₀ (lab., aerobic, 25 °C) 58–117 d. In field, DT₅₀ 8–28 d. Soil photolysis DT₅₀ 9 d. No incidence on soil microflora and nitrogen cycle. K_d 3790–30 000, K_{oc} 4.6 × 10⁵ to 1.63 × 10⁷ cm³/g, confirms strong adsorption by soil colloids and no risk of leaching. Rapid photodegradation in surface water in the presence of natural photosensitising substances, DT₅₀ 4 d. In water/sediment systems, adsorption from water to the sediments is the most important dissipation route, DT₅₀ (dissipation) <1 d, DT₅₀ (whole system, lab., pH 8.0–9.1) 40–90 d. Major routes of degradation or dissipation in natural water systems are adsorption to the sediment, suspended solids and aquatic macrophytes, chemical and photochemical conversion to inactive stereoisomers, and hydrolysis with subsequent oxidation of the transformation products. (Deltamethrin)

14. DISPOSAL CONSIDERATIONS

Waste Disposal

Pesticide wastes are acutely hazardous. Do not reuse product containers. Dispose product containers, waste containers, residues according local health and environmental regulations.

15. TRANSPORT INFORMATION

UN number: 3077.

Class and subsidiary risk: Division 9

Packing group: III

16. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

17. OTHER INFORMATION

The information contained herein relates only to the specific material identified. We believe that such information is accurate and reliable as of the date of this material safety data sheet, but no representation, guarantee or warranty, express or implied, is made as to the reliability or completeness of the information. Urge persons receiving this information to make their own determination as to the information's suitability and completeness for their particular application.

Chico Crop Science Co., Ltd.