

ROYAL AGRO ORGANIC PVT LTD. INDIA.

MSDS OF – Cypermethrin

Manufacturer of Product:-

Royal Agro Organic Pvt. Ltd.

Corporate Office: - The Business Hub, Office No. 410 to 415, 4th Floor,

Above Ford Showroom, Karve Road,

Kothrud, Pune – 411038 (MAH- INDIA).

Contact No. : - 020 65257474

Factory: - Gat No.-681, M.NO.1083, Pargaon-Khandala,
Dist.-Satara - 412802. (MAH-INDIA)

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1. Chemical Product Identification

Product Name: Cypermethrin

Molecular Formula: C₂₂H₁₉Cl₂NO₃

Molecular Weight: 416.3

Chemical Name: (RS)- α -cyano-3-phenoxybenzyl (1RS, 3RS; 1RS, 3SR)-3-(2, 2-dichlorovinyl)-2, 2-dimethylcyclopropanecarboxylate (IUPAC);

Colour: Nigger-brown;

Odour: Characteristic odour;

2. Composition / Information on Ingredients

Composition	Content
Cypermethrin	93.0%
Other ingredients	7.0

3. Hazards Identification

Component	Symbol	R phrases
Cypermethrin	Xn; N	R20/22-43-50

More important danger for the man: low toxicity to human; Dangers for the environment: highly toxicity to bird, fish and bee; low accumulation;

Physical-chemical dangers: The substance decomposes on heating above 220°C, producing toxic fumes including hydrogen cyanide, hydrogen chloride.

4. First Aid Measures

Skin: remove contaminated clothing and shoes, flush with plenty of water and soap.

Eyes: flush with plenty of clear water for 15-20 minutes.

Inhalation: move affect person to fresh air and keep at rest until recovered. If not breathing, give artificial respiration and get to a doctor.

Ingestion: do not induce vomiting; drink plenty of water. Then see doctor immediately.

5. Fire-Fighting Measures

Extinguishing media

To be used: water spray, foam, dry chemical powder and carbon oxide.

Don't use: not applicable

Particular risk: none.

Measures of personal protection: safety glasses or goggles, rubber gloves, shoes plus socks, long-sleeved shirt, and long pants.

6. Accidental Release Measures

Personal cautions: The product is harmful if inhaled or swallowed. Will irritate the eyes, nose, throat and skin. Avoid inhaling spray mist. Keep people and animals away and upwind.

Cleaning methods

EX: clear the liquid formation. Transfer to a properly labelled deposit that will be closed and sealed until the recovery of elimination of the product.

Environmental cautions

EX: prevent the contamination of the floor and of beds of water.

7. Handling And Storage

Handling: Keep out of reach of children. Avoid contact with the eyes, skin and clothing and avoid inhalation of product or spray mist. If in eyes, wash it immediately with water. After handling and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. Do not contaminate food or use on household tanks.

Storage: Store in the closed, original container in a dry, cool, well-ventilated area, secure area at minimum storage temperatures. Store in locked room or place away from children, animals, food, animal feed, seed and fertilizers.

8. Exposure Controls / Personal Protection

PEL: not applicable

Personal protective equipment: full-length overalls

Respiratory protection: approved respirator.

Protective gloves: rubber gloves Eye protection: safety goggles or face shield.

Industrial hygiene: ventilation

9. Physical And Chemical Properties

Density: 1.24 (20°C);

Water Solubility: 0.01 mg/L @ 20 °C insoluble in water

Solubility in Other Solvents: methanol v.s.; acetone v.s.; xylene v.s.

Melting Point: 60-80°C (pure isomers)

Vapour Pressure: 5.1×10^{-7} nPa @ 70°C Partition Coefficient: 6.6020 Adsorption Coefficient: 100,000

10. Stability And Reactivity

Conditions to avoid: avoid high temperature and flame; Products to avoid: alkaline pesticides; Thermal decomposition: 150~300°C;

Hazardous decomposition products: hydrogen cyanide, hydrogen chloride.
Hazardous reaction: none;

11. Toxicological Information

Acute oral LD50: rat 250-4150mg/kg

Acute dermal LD50: rat >4920mg/kg

Contact with the skin: slight irritation to skin of rabbit;

Contact with the eyes: slight irritation to eyes of rabbit;

Reproductive effects: No adverse effects on reproduction were observed in a three-generation study with rats given doses of 37.5 mg/kg/day, the highest dose tested.

Teratogenic effects: Cypermethrin is not teratogenic. No birth defects were observed in the offspring of rats given doses as high as 70 mg/kg/day nor in the offspring of rabbits given doses as high as 30 mg/kg/day.

Mutagenic effects: Cypermethrin is not mutagenic, but tests with very high doses on mice caused a temporary increase in the number of bone marrow cells with micronuclei. Other tests for mutagenic effects in human, bacterial and hamster cell cultures and in live mice have been negative.

Carcinogenic effects: EPA has classified cypermethrin as a possible human carcinogen because available information is inconclusive. It caused benign lung tumours in female mice at the highest dose tested (229 mg/kg/day); however, no tumours occurred in rats given high doses of up to 75 mg/kg/day.

Organ toxicity: Pyrethroids like cypermethrin may cause adverse effects on the central nervous system. Rats fed high doses (37.5 mg/kg) of the cis-isomer of cypermethrin for five weeks exhibited severe motor incoordination, while 20 to 30% of rats fed 85 mg/kg died 4 to 17 days after treatment began. Long-term feeding studies have shown increased liver and kidney weights and adverse changes in liver tissues in test animals. Pathological changes in the cortex of the thymus, liver, adrenal glands, lungs, and skin were observed in rabbits repeatedly fed high doses of cypermethrin.

12. Ecological And Eco toxicological Information

Effects on birds: Cypermethrin is practically non-toxic to birds. Its acute oral LD50 in mallard ducks is greater than 4640 mg/kg. The dietary LC50 in mallards and bobwhite quail is greater than 20,000 ppm. No adverse reproductive effects occurred in mallards or bobwhite quail given 50 ppm, the highest dose tested.

Effects on aquatic organisms: Cypermethrin is very highly toxic to fish and aquatic invertebrates. The LC50 (96-hour) for cypermethrin in rainbow trout is 0.0082 mg/L, and in bluegill sunfish is 0.0018 mg/L. Its acute LC50 in *Daphnia magna*, a small freshwater crustacean, is 0.0002 mg/L. Cypermethrin is metabolized and eliminated significantly more slowly by fish than by mammals or birds, which may explain this compound's higher toxicity in fish compared to other organisms. The half-lives for elimination of several pyrethroids by trout are all greater than 48 hours, while elimination half-lives in birds and mammals range from 6 to 12 hours. The bio concentration factor for cypermethrin in rainbow trout was 1200 times the ambient water concentration, indicating that there is a moderate potential to accumulate in aquatic organisms. Elimination of half of the accumulated amount of the compound took nearly eight days. After 14 days 70 to 80% of the material had been eliminated from the organisms.

Effects on other organisms: Cypermethrin is highly toxic to bees.

13. Disposal Considerations

Product: do not reuse product containers. Dispose of product containers, waste containers, and residues according to local environmental regulations.

14. Transport Information

Not applicable.

15. Regulatory Information

Not applicable.

16. Other Information

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct.

This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produce formulations containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.

17. EMERGENCY CONTACT DETAILS-

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