

MATERIAL SAFETY DATA SHEET

LAMBDA-CYHALOTHRIN 5% EC

1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

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Product name: Lambda-cyhalothrin 5% EC

2..COMPOSITION/INFORMATION ON INGREDIENTS

Formulation Type: Emulsifiable concentrate

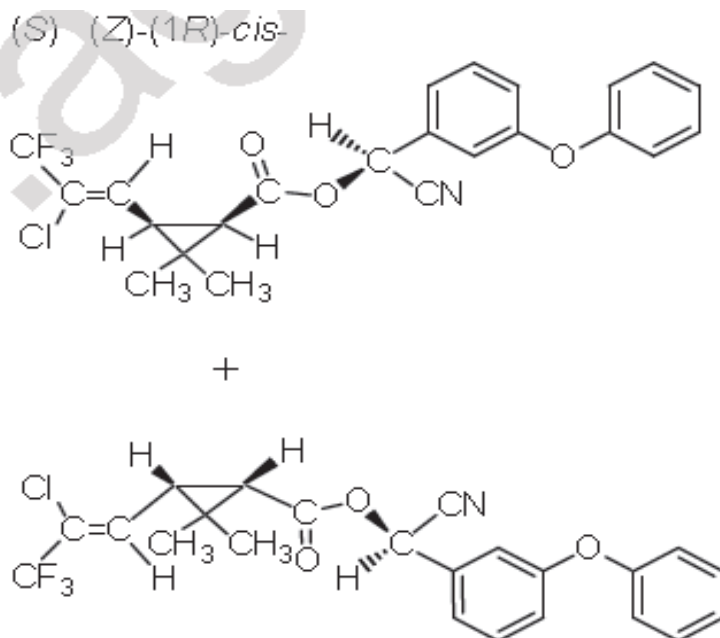
Active Ingredients: Lambda-cyhalothrin

ChemicalAbstracts name: [1 α (S*) , 3 α (Z)] -(? -cyano(3-phenoxyphenyl) methyl3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxyla te

CAS NO. 91465 - 08-6

Molecular Weight: 449.9

Structural Formula:



(R) (Z)-(1S)-cis

INGREDIENT	CAS NO	PROPORTION
Lambda-cyhalothrin	91465-08-6	≥5%
Inert ingredients	Not available	≤95%

Inert ingredients determined not to be hazardous

2. HAZARDA IDENTIFICATION

3. Emergency overview:Light amber liquid.WARNING!Harmful if inhaled or swallowed.Causes eye irritation.May cause allergic skin reaction.Combustible liquid and vapor.

Health hazards:

Inhalation:Harmful if inhaled.

Eye contact: Causes eye irritation. Exposed individuals may experience eye tearing, redness, and discomfort.

Skin contact: May cause allergic skin reaction.

Ingestion: Harmful if swallowed.

Environmental hazards: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST AID MEASURES

General: Have the product container, label or Material Safety Data Sheet with you when going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given.

Eye contact: Immediately irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.

Skin contact: Take off immediately all contaminated clothing. Wash skin immediately with water, followed by soap and water. Such action is essential to minimize contact with skin. Contaminated clothing should be laundered before re-issue.

Inhalation: Remove patient from exposure, keep warm and at rest. Obtain medical attention as a precaution.

Ingestion: If swallowed seek medical advice immediately and show the container, label or this MSDS, if possible. Do not induce vomiting.

Medical advice: There is no specific antidote. Gastric lavage may be effective when performed within 4 hours of ingestion. Aspiration of this material into the lungs should be avoided. Symptomatic treatment and supportive therapy as indicated.

5. FIRE FIGHTING MEASURES

Flash point: $\geq 38^{\circ}\text{C}$

Flammable limits:

LFL: Not determined.

UFL: Not determined.

Autoignition temperature: Not determined.

Hazardous combustion products: Toxic and irritating fumes.

Extinguishing media: For small fires, use foam, carbon dioxide or dry powder extinguishant. For large fires, use polar-resistant foam or water-fog; avoid use of water jet. Contain run-off water with, for example, temporary earth barriers.

Fire-fighting instructions: Fight fires from a protected location. Dike fire control water for later disposal.

Protective equipment for firefighters: A self-contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

6. ACCIDENT RELEASE MEASURES

Personal precautions: Ensure suitable personal protection during removal of spillages. This means wearing a face mask that gives protection against organic vapours, eye protection, chemically resistant gloves, boots and coveralls.

Clean up method: Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Wash the spillage area with water. Washings must be prevented from entering surface water drains. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

7. HANDLING AND STORAGE

Handling: Read the label before use. Avoid contact with skin and eyes. Do not breathe spray. Avoid inhalation of high concentrations of vapours. When using, do not eat, drink or smoke. Wash face and hands before eating, drinking or smoking.

Storage: Keep only in the original container. Keep container tightly closed. Keep out of the reach of children. Keep away from food, drink and animal feeding stuffs.

Storage life: Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Keep containers closed when not in use. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety.

Engineering controls: Ensure ventilation is adequate and that air concentrations of components are controlled below recommended hygiene standard. Use with local exhaust ventilation or while wearing dust mask.

Personal protection: Wear overalls, safety boots, safety goggles, gloves and NIOSH approved half mask respirator with organic vapour cartridge + dust/mist prefilter. Wash protective clothing before storage or reuse. Wash thoroughly after handling and before eating, drinking or smoking.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: liquid

Color: light amber.

Odor: aromatic.

pH: 6.0~8.0.

Density: Approximately 0.92g/ml

Solubility: miscible with water.

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to avoid: Protect from (sun)light, open flame and sources of heat. Decomposes upon heating.

Incompatible materials: Strong acids and strong bases.

Hazardous decomposition products: Toxic and Irritating vapour.

Hazardous polymerization: None known.

11. TOXICOLOGICAL INFORMATION

The following information is for the active ingredient, lambda-cyhalothrin.

Acute toxicity:

Oral: LD₅₀ for male rats 79, female rats 56mg/kg.

Dermal: LD₅₀ for rats 632-696mg/kg.

Inhalation: LC₅₀ for rats 0.06mg/l air (total particulate)

Irritant properties:

Skin: mild irritant (rabbit).

Eye: not irritant (rabbit).

Allergenic and sensitizing effects: Not considered to be a skin sensitizer (Guinea pig).

Chronic Toxicity: The principal toxic effects noted in chronic studies were decreased body weight gain and decreased food consumption. In a two-year study in rats, no effects were

observed at oral doses of 2.5 mg/kg/day and doses of up to 8.5 mg/kg/day produced no observable changes in the function or structure of the liver or nervous system. In this study, decreased body weight gain and decreased food consumption occurred at doses of 12.5 mg/kg/day as did elevation of plasma triglycerides. In a 26 week feeding study on dogs, doses of 2.5 mg/kg/day disrupted water absorption from the small intestine resulting in liquid feces, and at doses of 3.5 mg/kg/day and higher, neurological effects were noted.

Reproductive Effects: In two studies, lambda cyhalothrin caused reduced body weight gain at doses of 15 mg/kg/day in pregnant rats (highest dose tested) and at doses of 30 mg/kg/day in pregnant rabbits (also the highest dose tested), but these doses produced no observable reproductive effects. It is unlikely that lambda cyhalothrin would cause reproductive effects in humans under normal conditions.

Teratogenic Effects: No teratogenic or fetotoxic effects were observed in teratology studies of lambda cyhalothrin in rats and rabbits at the highest doses tested in both species (15 mg/kg/day and 30 mg/kg/day, respectively). Based on these data, it is unlikely that lambda cyhalothrin causes teratogenic effects.

Mutagenic Effects: The available evidence suggests that lambda cyhalothrin is non-mutagenic and non-genotoxic.

Carcinogenic Effects: No carcinogenic effects have been noted in studies of lambda cyhalothrin on various test animals (rats, rabbits, dogs).

12. ECOLOGICAL INFORMATION

The following information is for the active ingredient, Lambda-cyhalothrin.

Ecotoxicity:

Birds Acute oral LD₅₀: For mallard ducks >3950 mg/kg.

Dietary LD₅₀ (5 days): for quail >5300 mg/kg.

Fish LD₅₀ (96 h): for bluegill sunfish 0.21, rainbow trout 0.36 µg/l.

Daphnia EC₅₀ (48 h): 0.36 µg/l.

Algae EC₅₀ (96 h): for *Selenastrum capricornutum*. 1000 µg/l.

Bees LD₅₀ (oral): 38 ng/bee.

LD₅₀ (contact): 909 ng/bee.

Earthworm: LC₅₀ (14 DAYS): FOR *Eisenia foetida* >1000 mg/kg soil.

Persistence and degradability: Lambda cyhalothrin is moderately persistent in the soil environment. Reported field half-lives range from four to 12 weeks. Its field half-life is probably close to 30 days in most soils.

Mobility in soil: Lambda cyhalothrin is not expected to be appreciably mobile in most soils. There is little potential for groundwater contamination. Soils with high sand content or with very low organic matter content may tend to retain the compound to a lesser degree.

13. DISPOSAL CONSIDERATION

Do not contaminate ponds, waterways or ditches with chemical or used containers. Empty containers should be washed and discarded. Empty containers should not be used for other purposes. Disposal should be in accordance with local, state or national legislation.

14. TRANSPORT INFORMATION

UN Number: 3352

UN Proper shipping name: Pyrethroid pesticide, liquid, toxic (50 g/l Lambda-cyhalothrin).

Transport hazard class: 6.1

Packing group:III

Marine pollutant:Yes

15. REGULATORY INFORMATION

Hazard symbol(s):

Xn—Harmful

Risk phrases:

R22—Harmful if swallowed.

R38—Irritating to skin.

R41—Risk of serious damage to eyes.

Safety phrases:

S2—Keep out of the reach of children.

S13—Keep away from food,drink and animal feeding stuffs.

S23—Do not breathe gas/fumes/vapour/spray.

S20/21—When using,do not eat,drink or smoke.

S25—Avoid contact with eyes.

S26—In case of contact with eyes,rinse immediately with plenty of water and medical advice.

S46—If swallowed,seek medical advice immediately and show this container or label.

16. OTHER INFORMATION

This MADSSummarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace.Each user should read this MSDS and consider the information in the context of the how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made the user should contact the company.

END OF MSDS