



## Identification of the substance or mixture and of the company/undertaking

### **Product identifier.**

Lambda-cyhalothrin (BSI, draft E-ISO); lambda-cyhalothrine ((f) draft F-ISO)

### **Relevant identified uses of the substance or mixture and uses advised against**

Insecticide

### **Details of the supplier of the safety data sheet.**

SPARCHEM

159, Ashoka Shopping Centre, 2nd Flr.,

L.T. Marg, Mumbai - 400001,

Telephone number: 0091- 22-22642642

E-mail: response@sparchem.com

### **Emergency telephone number**

0091- 22-22642642

## Hazards identification

### **Classification of the substance or mixture**

#### **Classification as per Directives 67/548/EEC:**

T+; R26

T; R25

Xn; R21

N; R50-53

#### **Classification as per Regulation (EC) No 1272/2008:**

Acute Tox. 2 \*, H330

Acute Tox. 3 \*, H301

Acute Tox. 4 \*, H312

Aquatic Acute 1, H400

Aquatic Chronic 1, H410

**Label elements - Pictogram, Signal Word Code(s)**

GHS06

GHS09

**Hazard statement Code(s)**

H330: Fatal if inhaled.

H301: Toxic if swallowed.

H312: Harmful in contact with skin.

H410: Very toxic to aquatic life with long lasting effects.

**Precautionary Statements**

P260: Do not breathe dust/fume/gas/mist/ vapours/spray.

P271: Use only outdoors or in a well-ventilated area.

P284: Wear respiratory protection.

P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P310: Immediately call a POISON CENTER or doctor/physician.

P320: Specific treatment is urgent (see ... on this label).

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up

P501: Dispose of contents/container in accordance with local/regional/national/regulation.

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P321: Specific treatment (see ...on this label).

P330: Rinse mouth.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P302 + P352: IF ON SKIN: Wash with plenty of soap and water

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P322: Specific measures-treat symptomatically. P363: Wash contaminated clothing before reuse.

P273: Avoid release to the environment.

P391: Collect spillage.

**Other hazards**

Very toxic to aquatic life with long lasting effects. Does not meet the criteria for vPvB in accordance with Annex XIII of REACH.

## Composition/information on ingredients

### Substances.

Chemical name	CAS No/ EC No	Index No.	Classification (Directives 67/548/EEC)	Classification (Regulation (EC) No 1272/2008)	Con. % w/w
Lambda-cyhalothrin (ISO); (A reaction product comprising equal quantities of (S)- $\alpha$ -cyano-3-phenoxybenzyl (Z)-(1R,3R)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate and (R)- $\alpha$ -cyano-3-phenoxybenzyl (Z)-(1S,3S)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate)	91465-08-6/ 415-130-7	607-252-00-6	T+; R26 T; R25 Xn; R21 N; R50-53	Acute Tox. 2 *, H330 Acute Tox. 3 *, H301 Acute Tox. 4 *, H312 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	95.0 (min)

## First aid measures

### Description of first aid measures

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Keep the person calm and comfortable. Rinse mouth.

IF EYE CONTACT, immediately flush with plenty of water at least for 15 minutes.

IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/physician if you feel unwell.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

### Most important symptoms and effects, both acute and delayed

Dermal and inhalational exposures are associated usually with no or only mild adverse effects. Following substantial ingestion, patients may develop coma, convulsions and severe muscle fasciculations and may take several days, occasionally weeks, to recover. Long-term exposure is no more hazardous than short-term exposure.

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

Institute symptomatic and supportive measures as required. If ingested, Atropine may be of value if hyper salivation is troublesome, 0.6-1.2 mg for an adult, 0.02 mg/kg for a child. Mechanical ventilation should be instituted if non-cardiogenic pulmonary oedema develops. Isolated brief convulsions do not require treatment but intravenous diazepam should be given if seizures are prolonged or recur frequently.

Topical vitamin E (tocopherol acetate) has been shown to reduce skin irritation if applied soon after exposure.

## Firefighting measures

### **Extinguishing media**

If product is involved in a fire, use water spray, foam, dry powder, carbon dioxide or sand. Keep nearby containers and equipment cool with a water stream.

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

The substance decomposes on burning producing toxic fumes including nitrogen oxides hydrogen chloride and hydrogen fluoride. Do not breathe fumes. Wear self contained breathing apparatus.

### **Advice for firefighters**

Whenever this product involved in a major fire, firefighters to wear boots, overalls, gloves, eye and face protection and breathing apparatus. Keep containers cool with water spray. Cypermethrin is toxic to fish and water should be used only to cool unaffected stock.

## Accidental release measures

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

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Remove ignition sources and need to evacuate the danger area or to consult an expert. When dealing with a spillage do not eat, drink or smoke.

### **Environmental precautions**

Do not discharge into the drains/surface water/groundwater.

### **Methods and material for containment and cleaning up**

Do not contaminate waters and sewers. Soak up with absorptive material such as sand, soil, diatomaceous earth, etc. Prevent material from spreading, e.g. by damming in with absorptive material. Collect material in specially marked, tightly closing containers. Spilled product cannot be used further and must be disposed of. Clean contaminated floors and objects thoroughly with plenty of water, observing environmental regulations.

### **Reference to other sections**

Information regarding personal protective equipment, see section 8.

Information regarding waste disposal, see section 13.

## Handling and storage

### **Precautions for safe handling**

Wear full protective clothing by those handling concentrates. Adequate washing facilities should be available at all times and should be close to site of handling. Eating, drinking and smoking should be prohibited during handling. Wash hands after use and to remove contaminated clothing and protective equipment before entering eating areas.

### **Conditions for safe storage, including any incompatibilities**

It should be stored in clearly labelled rigid and leak proof containers and away from containers of food and drink. Storage should be under lock and key and secure from access by children and other unauthorized persons. Store in a well-ventilated place. Do not store together with oxidizing agents & strong alkalies.

### **Specific end use(s)**

When opening a container and mixing, protective impermeable boots, clean overalls impermeable gloves, eye protection and a respirator should be worn. Avoid contact to mouth and eyes. Before eating, drinking or smoking, hands and other exposed skin should be thoroughly washed with alkaline soap.

## **Exposure controls/personal protection**

### **Control parameters**

#### **Occupational exposure limit**

Exposure limit values are not available.

#### **DNEL and PNEC values**

Not available

### **Exposure controls**

#### **Appropriate engineering controls**

Mechanical ventilation should be used when handling this product in closed spaces.

#### **Individual protection measures, such as personal protective equipment**

##### **General precautions**

The substance can be absorbed into the body by inhalation of fine dust and mist and by ingestion. Avoid inhalation.

##### **Eye/face protection**

Wear safety goggles with imperforated side shield and face shield.

##### **Skin protection**

Avoid contact with skin. Wear apron, boots and full protective suit.

##### **Respiratory protection**

Use respiratory protection in case of insufficient exhaust ventilation or prolonged exposure.

##### **Thermal hazards**

Whenever this product involved in a major fire, firefighters to wear boots, overalls, gloves, eye and face protection and breathing apparatus.

##### **Environmental exposure controls**

Keep away from food, drink and animal feed stuff. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheet.

## Physical and chemical properties

### Information on basic physical and chemical properties

**Appearance**

Viscous brown/green semi-solid mass

**Odour**

Characteristics Odour

**Odour threshold**

Not available

**PH**

Not available

**Melting point/freezing point**

47-49°C

**Initial boiling point and boiling range**

Not available

**Flash point**

185 °C (Pensky-Martens closed cup)

**Evaporation rate**

Not available

**Flammability (solid, gas)**

Non-relevant

**Upper/lower flammability or explosive limits**

Non-explosive

**Vapour pressure**

2.80 x 10<sup>-7</sup> Pa at 20°C

3.65 x 10<sup>-5</sup> Pa at 40°C

**Relative density**

0.4938 g/ml at 20°C

**Solubility(ies)**

Water: 0.0009 mg/l at pH 4.0, 0.001 mg/l at pH 7.0, 0.004 mg/l at pH 9.0

In acetone, methanol, toluene, hexane, ethyl acetate >500 g/l

**Partition coefficient: n-octanol/water**

6.28 ± 0.02 at 24±1°C

**Auto-ignition temperature**

Not available

**Decomposition temperature**

Above 275°C

**Viscosity**

Viscous

**Explosive properties**

Non-explosive

**Oxidising properties**

Non-oxidizer

**Other information**

Does not dissociate in water

## Stability and reactivity

### Reactivity

Hydrolysed under alkaline conditions.

### Chemical stability

Stable for two years at ambient conditions.

### Possibility of hazardous reactions

Reactions with strong alkalis. Incompatible with oxidizing materials.

### Conditions to avoid

Avoid excessive heat and flame.

### Incompatible materials

Alkaline materials.

### Hazardous decomposition products

When handled and stored appropriately, no dangerous decomposition products are known.

## Toxicological information

### Information on toxicological effects Acute toxicity, oral, dermal, inhalation

Oral LD50: >50-300 mg/kg bw (Rats)

Dermal LD50: 735.75 mg/kg bw (Rats)

Inhalation LC50 : 0.0438 mg/l (Rats)

### Skin Corrosion/Irritation

Non-irritant to skin of rabbits

### serious eye damage/irritation

Non-irritant to eye of rabbits

### respiratory or skin sensitisation

Non-sensitiser to skin of Guinea pigs

### germ cell mutagenicity

Non-mutagenic

### Carcinogenicity

Non-carcinogenic

### Reproductive toxicity

Non-reprotoxic and teratogenic

### STOT-single exposure

Not applicable

### STOT-repeated exposure

Not applicable

### **Aspiration hazard**

Liquid formulation can be aspirated into the lungs resulting in chemical pneumonitis, showing tremors and convulsions.

## **Ecological information**

### **Toxicity**

#### **Fish, Bluegill sunfish**

LC50 (96 h): 0.21 mg/l

#### **Daphnia magna**

EC50 (48 h) 0.36 mg/l

#### **Algae, Selenastrum capricornutum**

ErC50: >1000 mg/l

#### **Bees, Apis indica**

LD50 (oral): 38 ng/bee

#### **Earthworms, Eisenia foetida**

LC50 :> 1000 mg/kg soil

#### **Birds, Mallard ducks**

LD50: > 3950 mg/kg

### **Persistence and degradability**

Degradation in soil occurs primarily by hydroxylation followed by cleavage of the ester linkage to give two main degradation products, which are further degraded to carbon dioxide. The initial half-lives are in the range of 22 to 82 days.

### **Bioaccumulative potential**

In the presence of soil and suspended sediment, the bioaccumulation factors are greatly reduced (to 19 in the case of fish and 194 in the case of daphnids). Since the compound is rapidly adsorbed and degraded under natural conditions, there will not be any practical problems concerning the accumulation of residues or the toxicity of lambda-cyhalothrin in aquatic species.

### **Mobility in soil**

Lambda-cyhalothrin is insoluble in water and not mobile in soil, they are very unlikely to reach ground water.

### **Results of PBT and vPvB assessment**

Very toxic to aquatic life with long lasting effects. Does not meet the criteria for vPvB in accordance with Annex XIII of REACH.

### **Other adverse effects**

With recommended application rates it is unlikely that Lambda-cyhalothrin or its degradation products will attain levels of environmental significance. Notwithstanding its high toxicity for fish and honey bees, this is only likely to cause a problem in the case of spillage and over spraying.

## Disposal considerations

### Waste treatment methods

#### **Product Disposal**

Avoid exposure, if possible by the use of appropriate protective clothing and masks. Absorb spillage with lime, damp sawdust, sand, or earth and dispose of safely (see below). If spillage is large, contain it by building a barrier of earth or sandbags.

Waste containing Lambda-cyhalothrin should be burnt in a proper high temperature incinerator with effluent scrubbing. Where no incinerator is available, contaminated absorbents or surplus products should be decomposed by hydrolysis at pH 12 or above. Contact with a suitable hydrolysing agent is required to ensure degradation of the active ingredient to a safe level. Dispose of product in accordance with local regulation.

Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into streams, water-courses, open waterways, ditches, fields with drainage systems, or the catchment areas of boreholes, wells, springs, or ponds.

#### **Package disposal**

Decontaminate empty, damaged, or leaking containers with a 10% sodium carbonate solution added at the rate of at least 1 litre per 20-litre drum. Puncture containers to prevent reuse. Dispose of empty containers in an incinerator approved for chemicals. Dispose of container in accordance with local regulation.

## Transport information

#### **UN number**

3349

#### **UN proper shipping name**

PYRETHROID PESTICIDE, SOLID, TOXIC

#### **Transport hazard class(es)**

ADR: 6.1

IMDG: 6.1

ICAO/IATA: 6.1

RID: 6.1

#### **Packing group**

III

#### **Environmental hazards**

Lambda-cyhalothrin designated as marine pollutant.

#### **Special precautions for user**

Ensure that containers are sound and that labels are securely fixed and undamaged before dispatch. Do not load together with food and animal feed.

#### **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not relevant

## Regulatory information

### **Safety, health and environmental regulations/legislation specific for the substance or mixture**

Lambda-cyhalothrin has been classified under Dangerous substances Directive 67/548/EEC & Regulation No 1272/2008.

### **Chemical safety assessment**

Chemical safety assessment has been performed by World Health Organization for the International Programme on Chemical Safety.

## Other information

### **Indication of changes**

Changes have been made in all section.

### **Abbreviations and acronyms**

LD50: Lethal Dose, 50%

LC50: Lethal Concentration, 50%

STOT: Specific Target Organ Toxicity

DNEL: Derived No Effect Level

PNEC: Predicted No Effect Concentration

ADR: International Carriage of Dangerous Goods by Road

IMDG: International Maritime Dangerous Goods

ICAO/IATA: International Civil Aviation Organization /International Airlines Travel Agent

RID: International Carriage of Dangerous Goods by Rail

### **Key literature references and sources for data**

-Our study reports

- World Health Organization for the International Programme on Chemical Safety.

-BCPC, Pesticide Manual

### **Text of R-phrases mentioned in Section 3:**

R21: Harmful in contact with skin.

R25: Toxic if swallowed.

R26: Very toxic by inhalation.

R50/53: Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

Text of the hazard statements mentioned in Section 3:

H330: Fatal if inhaled.

H301: Toxic if swallowed.

H312: Harmful in contact with skin.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

**Training**

Training of workers in techniques to avoid contact with substance is essential.

**Liability**

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