MATERIAL SAFETY DATA SHEET

PRODUCT : Lambda-cyhalothrin 4.9% CS

PRODUCT DESIGNATION : Insecticide

Section 1: Product Identification & Company

Common Name	:	Lambda-cyhalothrin
Grade	:	4.9% CS
Chemical Name of Active Ingredient Present	:	A reaction product comprising equal quantities of (S)-α-cyano-3-phenoxybenzyl (Z)-(1R,3R)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate and (R)-α-cyano-3-phenoxybenzyl (Z)-(1S,3S)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate.
Chemical Family of A. I.	:	Pyrethroid Insecticide
Manufacturer / Supplier	:	BR Agrotech Limited 1505, Vikram Tower, Rajendra Place, New Delhi – 110 008, India
Emergency Phones	:	+91 – 11 –43661111, 41538383

Section 2: Product Composition

S.No.	Ingredient		Quantity
1.	Lambdacyhalothrin a.i.	:	4.900 % w/w
2.	Polyalkylene glycol ether	:	0.260% w/w
3.	Dodecyl benzene sulphonic acid sodium salt	:	0.090 % w/w
4.	Polymeric fatty ester	:	0.430 % w/w
5.	Sodium lignosulphonate	:	0.220 % w/w
6.	Hydrated aluminium magnesium silicate	:	1.440% w/w
7.	Tetrasodium pyrophosphate	:	0.060 % w/w
8.	Xanthan gum	:	0.110 % w/w
9.	Titanium dioxide	:	0.510 % w/w
10.	Propylene glycol	:	0.040 % w/w
11.	Polydimethylsiloxan	:	0.020 % w/w
12.	Sulphuric acid	:	0.200 % w/w
13.	1,2-benzlsothiazol 3 (2H)-one	:	0.490 % w/w
15.	Ammonium hydroxide	:	0.110 % w/w
16.	Aromatic hydrocarbon	:	2.860 % w/w
17.	Polyurea	:	0.820 % w/w
18.	Water	:	Q.S. to make
	Total	:	100.000 % w/w

Section 3: Hazard Identification

Adverse Effects on Human Health	:	Classification according to Regulation (EU) 1272/2008: Acute toxicity Category 4 Skin sensitization Category 1

Section 4: First – Aid Measures

Eye Contact	:	Flush the eyes, holding eyelid open with saline/clean water at least for 10 – 15 minutes. If any symptom occurs and persists, consult doctor.
Skin Contact	:	Remove contaminated clothing; wash the affected area(s) with copious amount of soap and water.
Inhalation	:	Remove the victim to fresh air; provide artificial respiration if breathing trouble is experienced. Consult doctor.
Ingestion	:	Induced vomiting by tickling the back of throat. Repeat it until the vomitus is clear. Do not induce vomiting if the patient is unconscious.
Antidote (Medical Treatment)	:	There is no specific antidote. Treatment symptomatically and supportively.

Section 5: Fire & Explosion Data

Flash Point	:	>93^{o}C
Oxidizing / Reducing Properties	:	None
Auto-ignition Temperature	:	Not auto-flammable
Hazardous Thermal Decomposition Products	:	Toxic gases may release during thermal decomposition
Firefighting Media	:	Dry chemical, carbon dioxide, foam and water spray.

Extinguishing Procedure	:	Wear breathing apparatus and full protective clothing. Evacuate people to safe area. Move the containers from fire area. If possible, dike fire control material for later disposal.

Section 6: Accidental Release

Soil Spill	:	Dike the area. Absorb on sand or other absorbent media and place in closed container for proper disposal
Water Spill	:	Absorb the material by activated carbon using suction hoses to remove trapped material
Occupational Spill	:	Do not touch spilled material. Stop leak, if possible. Absorb on sand or other absorbent material and put in clean container for disposal.

Section 7: Handling & Storage

Handling	:	Do not drop the containers. Keep tightly closed. Avoid breathing of vapours and bodily contact.
Storage	:	Store in a dry cool, well-ventilated and secured place under lock and key. Do not store foodstuff and animal feed in the same storage. Keep the containers in properly laid stocks with sufficient passage for free movement.

Section 8: Personal Protection / Safety

Respiratory	:	Approved respirator
Eye and Face	:	Safety goggles or face shield
Hands	:	Gloves
Body	:	Long pant, long sleeve shirt, apron, boots, and hat
Ventilation	:	Provide local exhaust

Industrial Hygiene	:	Safety shower and eyewash should be provided at work place. Do not eat, drink or smoke while working. Wash hands before meals and after work with soap and water.

Section 9: Physico – Chemical Data

State	:	Liquid
Colour	:	Off white
Odour	:	Weak aromatic
Boiling point	:	100^{o}C
Miscibility	:	Miscible with water
Density	:	1.028 g/cm^{3}
Corrosion	:	Non corrosive

Section 10: Stability & Reactivity

Stability		
Heat	:	Stable to heat in wide range of ambient conditions. Avoid excessive heat.
Air	:	Stable to air
Light	:	Relatively stable to light even in field situations
Media	:	Relatively stable in neutral, acidic and alkaline media.
Decomposition	:	When heated to decomposition it emits very toxic fumes.
Thermal Decomposition	:	On combustion may produce oxides of carbon, nitrogen and sulfur.
Oxidizing / Reducing Properties	:	None
Corrosiveness	:	Non corrosive
Polymerization	:	No hazardous polymerization has been reported to occur

Section 11: Health Hazard Information

Route of Entry	:	Absorption through skin, inhalation and ingestion
Symptoms of Poisoning	:	Ingestion of lambda-cyhalothrin may produce nonspecific symptoms such as nausea, vomiting, abdominal pain, diarrhea and allergic manifestations. If larger doses are ingested, it may cause disturbance of the nervous system with tremors, atazia, and weakness of limbs, convulsion, coma and death from respiratory depression.
Acute Toxicity	:	
Rat Oral LD_{50} (Male) (Female)	: :	612 mg/kg b. w. 522 mg/kg b. w.
Skin, Rats LD_{50}	:	> 2000 mg/kg
Inhalation		
Rats LC_{50} (4 h)	:	2.09 mg/l air
Effects of Over Exposure	:	
Ocular	:	Mild irritant
Dermal	:	Non irritant
Others		
Carcinogenicity	:	No evidence of carcinogenicity
Teratogenicity	:	No evidence of teratogenicity
Mutagenicity	:	Did not show mutagenic effects in animal experiments
Reproduction	:	Did not show reproductive toxicity effects in animal experiments

Section 12: Ecological Information

Acute Oral LD_{50}	:	
Fish LC_{50} (48 h)	:	LC50 Cyprinus carpio (Carp), ca. > 12 µg/l , 96 h
Bees LD_{50} Oral	:	> 100 µg/bee
Daphnia EC_{50} (48 h)	:	> 2.6 µg/l , 48 h
Other Beneficial spp.	:	-
Bioaccumulation	:	Low bioaccumulation potential

Section 13: Environmental Fate

Stability in soil	:	Degradation half-life : 56 d Not persistent in soil.
Stability in water	:	Degradation half-life: 7 d Not persistent in water
Mobility in soil	:	Lambda-cyhalothrin is immobile in soil.

Section 14: Transportation Information

Proper Shipping Name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LAMBDA-CYHALOTHRIN)
Grade	:	Formulation (4.9% CS)
Toxicity Class	:	9
Packing Group	:	III
UN No.	:	3082
Labeling Requirements	:	As per EC legislation / UN

Section 15: Regulatory Information

FAO / WHO, acceptable daily intake (ADI)	:	0.02 mg/kg b.w.
Toxicity Class (EPA, a. i.)	:	II
EC risk R21,R22,R26,R38,R40,R50/53, R51/53 S1/2,S7,S9,S36, S39		

Disposal

Waste from residues/unused products should be disposed off in an approved landfill or in a chemical incineration equipped with scrubbers, in accordance with national and regional regulations. Do not allow material to contaminate ground water system. Do not contaminate surface water.

Contaminated packaging: Do not contaminate ponds, waterways or ditches with chemical or used container. Do not re-use empty containers.

Section 16: Other Information

Avoid spraying over bodies of water. Do not contaminate ponds, waterways or ditches with product or with used containers. It is unlikely that Lambda-cyhalothrin and its degradation product will reach levels of environment significance, when used according to dose recommendation.

The data presented in this Material Safety Data Sheet are believed to be correct and faithful. BR Agrotech Limited does not make guarantee or warranties of any kind regarding the completeness or accuracy of results obtained upon reliance on these data.

PREPARED BY: BRAL SAFETY DIVISION

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