Spinochem Tech Co.,Ltd
Add: No.2278, Zhaochong Rd,Shanghai,China

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name:	Lambda-cyhalothrin 5% CS
Substance:	Capsule suspension of Lambda-cyhalothrin
Chemical name of active ingredient:	IUPAC Name: A reaction product comprising equal quantities of (*S*)-α-cyano-3- phenoxybenzyl (*Z*)-(1*R*,3*R*)-3-(2-chloro-3,3,3 -trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate and (*R*)-α-cyano-3-phenoxy-benzyl(*Z*)-(1*S*,3*S*)-3-(2-chloro-3,3, 3-trifluoroprop-1- enyl)-2,2-di-methylcyclopropanecarboxylate Roth:(*S*)-α-cyano-3-phenoxybenzyl(*Z*)-(1*R*)-cis-3-(2-Chloro-3,3,3-trifluoropropen-yl)-2,2-dimethylcyclopropanecarboxylate and (*R*)-α-cyano-3-phenoxybenzyl(*Z*)-(1*S*)-cis-3-(2-chloro-3,3, 3-trifluoropropenyl)-2,2-dimethylcyclopropanecarboxylate(1:1) CA Name: [1α(*S**),3α(*Z*)]-(±)-cyano(3-phenoxyphenyl)methyl 3-(2-chloro -3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate
Product Use:	Agricultural insecticide
Manufacturer:	Spinochem Tech Co.,Ltd
Address:	No.2278, Zhaochong Rd, Shanghai, China
Emergency telephone No.: + 86 21 57710105	

2. HAZARDS IDENTIFICATION

Label elements

Pictogram

Signal word: Danger

Hazard statement(s)

H301+H311 Toxic if swallowed or in contact with skin.

H330 Fatal if inhaled.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

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

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

P284 Wear respiratory protection.

P301 Immediately call a poison center or doctor/ physician.

P501 Dispose of contents/container to an approved waste disposal plant.

Hazard symbol(s)

T Toxic

N Hazardous to the aquatic environment

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Content
Lambda-cyhalothrin	91465–08–6	50g/L
Others	Not applicable	Up to 1000g/L

4. FIRST AID MEASURES

General advice:

Inhibition of cholinesterase. Immediately remove contaminated clothing. First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Show container, label and/or safety data sheet to physician.

If ingested

If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting.

If inhaled

Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a physician or poison control center immediately.

In case of skin contact

Immediately wash thoroughly with soap and water, seek medical attention.

In case of eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Note to physician

Skin contact paresthesia effects (itching, tingling, burning or numbness) are transient, lasting up to 24 h. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special hazards arising from the substances or mixture

Product is or contains a sensitizer. May cause sensitization by inhalation and skin contact.

Advice for firefighting

Wear protective clothing and self-contained breathing apparatus. Do not allow run-off from firefighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid breathing vapors or mists.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Provide extract ventilation to points where emissions occur. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product.

Remove contaminated clothing and shoes. Avoid breathing vapors or mists.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from combustible material. Keep in an area equipped with sprinklers. Keep away from food, drink and animal feeding stuffs. No smoking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components with workplace control parameters.

Exposure controls

No data available.

Acceptable Daily Intake (ADI):

(EC) 0.005 mg/kg b.w. [2000]; (EPA) cRfD 0.001 mg/kg b.w. [1997]; (JMPR) 0.02 mg/kg b.w. daily [2006].

No-observable-effect-level (NOEL):

(1 y) for dogs 0.5 mg/kg b.w. daily.

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. The statements on personal protective equipment in the instructions for use apply when handling crop-protection agents in final-consumer packing. Avoid contact with the skin, eyes and clothing. Wearing of closed work clothing is recommended. Take off immediately all contaminated clothing. Store work clothing separately. Keep away from food, drink and animal feeding stuffs. No eating, drinking, smoking or tobacco use at the place of work. Hands and/or face should be washed before breaks and at the end of the shift.

Personal protective equipment

Eye Protection:	Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.
Skin Protection:	The information at hand indicates that this product is not harmful and that normally no special skin protection is

	necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when handling this product.
Body protection:	Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection:	In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

User safety recommendations:

Local authorities should be advised if significant spillages cannot be contained.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White liquid suspension
Flash point	Will not flas
pH	6-8
Relative density	1.03
Water solubility	Miscible with water.
Partition coefficient	Not applicable for the end-use product, Refer to the active substance, K_{ow} logP=7 (20°C, lambda-cyhalothrin)

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

No data available.

Conditions to avoid

Excessive heat.

Incompatible materials

Strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

Acute Oral	Rats: LD_{50} 550 mg/kg
Acute dermal	Rats: LD_{50} > 5050 mg/kg
Inhalation	Rats: LC_{50} > 2.15 mg/l
Skin and Eye	Rabbits: non-irritant to eye; non-irritant to skin.
Skin sensitization	Not a skin sensitizer in guinea pigs.

Chronic toxicity

The principal toxic effects noted in chronic studies were decreased body weight gain and decreased food consumption. These effects occurred in rats at oral doses of 1.5 mg/kg/day (the highest dose tested) in a three-generational study conducted in 1984. 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. In two teratology studies, no maternal toxicity was observed at doses of 10 mg/kg/day in both rats and rabbits. It is unlikely that lambda cyhalothrin would cause chronic effects in humans under normal conditions.

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. There were reduced numbers of viable offspring at doses of 50 mg/kg/day in the second and third generations in the three-generational rat study noted above. 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

Lambda cyhalothrin produced negative results in all Ames mutagenicity assays using five different test strains, both with and without metabolic activation. Results of other in-vitro cytogenetic assays and chromosomal structural aberration tests indicated no mutagenic or genotoxic effects were caused by lambda cyhalothrin. 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). The evidence regarding the carcinogenicity of lambda cyhalothrin is inconclusive, but suggests that it is probably not carcinogenic.

Organ toxicity

No specific target organs or organ systems have been identified in the available studies of chronic toxicity. The nervous system may be affected after acute exposure.

12. ECOLOGICAL INFORMATION

Eco-toxicity (ePM)

Bird	Mallard ducks:	LC_{50} >3950 mg/kg
	Quail	LC_{50} (dietary) >5300 mg/kg

No accumulation of residues in eggs or tissues.

Fish	Rainbow trout:	LC_{50} (96 h) 0.36μg/L
	Bluegill sunfish:	LC_{50} (96 h) 0.21μg/L
Daphnia	Intrinsic toxicity to aquatic organisms is greatly reduced by rapid loss from the water by adsorption and degradation: EC_{50} (72 h) in water 0.26μg/l, in water/sediment 31μg/l.	
Algae	Selenastrum capricornutum:	E_rC_{50}(96 h) >1000μg/l
Other aquatic spp	Toxic to some non-target arthropods. Effects under field conditions reduced, with rapid recovery.	
Bees	LD_{50} (oral) >909ng/bee. LD_{50} (contact) >38ng/bee.	
Worms	Eisenia foetida	LC_{50} >100mg/kg soil.

Persistence and degradability

Rapidly degraded in soil; DT_{50} for microbial degradation 23–82 d, for field soil 6–40 d. Strongly adsorbed to soil and sediment organic matter, K_{oc} 330 000. Negligible potential for leaching of lambda-cyhalothrin and its degradation products through soil

Bioaccumulative potential

Indication of bioaccumulation.

13. DISPOSAL CONSIDERATION

Waste from residues/unused products

Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.

Contaminated packaging

Improper disposal or reuse of this container may be dangerous and illegal.

14. TRANSPORT INFORMATION

UN Number: UN3082

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Lambda-cyhalothrin)

Transport Hazard Class: 9

Packing Group: III

Marine pollutant

15. REGULATORY INFORMATION

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

No data available

Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the

properties of the product. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if we has been advised of the possibility of such damages.