

CS Formulation: Capsule Suspension (CS)
Non-flammable

A synthetic pyrethroid insecticide for the control of red, spiny and African bollworms and certain other pests in cotton; cutworm in all crops excluding cotton but including tobacco; African armyworm in pastures and various pests in horticultural crops as listed.

Chemical groups:
lambda-cyhalothrin is a Pyrethroid

TRB Certificate No.: 10-13-D-59

® = Registered Trademark of a Syngenta Group Company

LXXXXXXX ZIMB/04X PPE XXXXXXX



Karate Zeon

5 CS

syngenta.

Reg. No.:
06-D-136-15

250 ml



DANGER

POISON

COMPOSITION: (mass/volume)

Lambda-cyhalothrin: 50 g/litre

Inert ingredients:..... to 1 litre

**BEFORE YOU OPEN THE CONTAINER
READ THE ENTIRE LABEL.**

Date of manufacture/Batch No:

Refer to inkjet print.

Shelf Life: 2 years if stored in a cool dry place at constant temperatures in original unopened container.

Emergency Call Number:

Swiss Toxicological Information Centre
(24 h) +41 44 251 51 51

Manufacturer: Syngenta Crop Protection AG,
Basel, Switzerland

Registered by: Syngenta Agro AG

32 Sandringham Drive,
Alexandra Park, Harare

Tel.: 08677005432 / 08677005434

Product names marked ® or ™, the ALLIANCE FRAME the SYNGENTA Logo and the PURPOSE ICON are Trademarks of a Syngenta Group Company.

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TO CAUSE A HAZARD IN THE USE, STORAGE OR DISPOSAL OF THIS SUBSTANCE IS AN OFFENCE.

PRECAUTIONS

- Handle with care; avoid splashing/contact; poisonous by swallowing, inhalation and contact with the skin.
- Wear suitable protective clothing, i.e. for mixing – impermeable gloves, overalls, eye/face protection; for application - overalls, hat, and solid footwear.
- DO NOT CONTAMINATE DRINKING POOLS, DAMS, RIVERS, WATERWAYS AND OTHER WATER SUPPLIES.
- DANGEROUS TO FISH AND BEES.
- KEEP OUT OF REACH OF CHILDREN.
- KEEP APART FROM FOOD, FOODSTUFFS, seeds and fertilizers.
- Do not eat, drink or smoke while handling this product.
- Store in original container in a cool, dry place and keep under lock and key
- Use only on the crops for which the product is registered.

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- Avoid drift onto adjacent crops or soil.
- On completion of mixing or spraying, remove protective clothing and wash entire body and change clothing.
- Decontamination of Sprayer – after use, clean the sprayer thoroughly and ensure that all traces of **Karate Zeon® 5 CS** are removed. Make use of the following method: (a) Drain tank and then rinse tank, sprayer boom and hoses with clean water for at least 10 minutes. (b) Fill tank with clean water and add to it 1,0 litre household bleach (5%) or 1,5 litres household bleach (3,5%) per 200 litres of water. Rinse hoses and sprayer boom and leave in the tank for 15 minutes whilst agitating. Drain through the nozzle outlets. (c) Repeat step (b) and thereafter, rinse thoroughly with clean water and dispose of the wash water at a site designated for the disposal of pesticides.
- Empty container disposal – invert the empty container over the spray tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container 3 times with a volume of water equal to at least 10% of that of the container. And the rinsate to the contents of the spray tank. Destroy the empty container by perforation and flattening. Place it in a secure disposal area and offer it for recycling. DO NOT use it for any other purpose.

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SYMPTOMS OF POISONING

Following ingestion, nausea, vomiting, abdominal pain and diarrhoea may occur. May cause tingling/numbness in exposed areas (paraesthesia). The effect is transient, may be lasting up to 24 hours.

FIRST AID

Eye contact: Splashes of the concentrate can harm your eyes. If you get it in your eyes, wash it out at once. Hold eyelids apart and pour in a gentle stream of water for 10 to 15 minutes.

Skin contact: Splashes of the concentrate can irritate your skin. Wash splashes from your skin at once. Remove contaminated clothing; wash affected skin with soap and water.

If inhaled: Move to clean air.

If swallowed: DO NOT induce vomiting. Seek medical advice immediately if a large volume of concentrate was ingested.

Note: Never give anything by mouth to an unconscious patient.

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NOTE TO PHYSICIAN

If gastric lavage is performed, take care to prevent aspiration of gastric contents. Consider administration of activated charcoal and a laxative.

No specific antidote is known. Apply symptomatic therapy.

USER'S RISK

The user bears the risk for damage resulting from factors beyond the manufacturer's control. All recommendations for use of the product are based on the current state of the manufacturer's knowledge. Since the manufacturer cannot control the application, use, or storage of the product, the manufacturer cannot accept responsibility therefore.

Since the occurrence of resistance cannot be foreseen, the manufacturer accepts no responsibility for any loss or damage to crops resulting from failure of **Karate Zeon® 5 CS** to control a resistant strain of the target pest.

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PRODUCT INFORMATION

Mode of Action and Spectrum of Activity

Karate Zeon® 5 CS is a pyrethroid insecticide which disrupts sodium channel modulators. It offers rapid knockdown, residual control and anti-feeding and repellency properties against some pests.

Karate Zeon® 5 CS is not systemic in plants.

INSECTICIDE RESISTANCE MANAGEMENT (IRM)

Karate Zeon® 5 CS a Group 3A insecticide, based on the Insecticide Resistance Action Committee (IRAC) Mode of Action classification. Repeated and exclusive use of **Karate Zeon® 5 CS** or other Group 3A insecticides may create resistant insect populations. Follow these recommendations to prevent or delay the development of insecticide resistance to **Karate Zeon® 5 CS**:

- Do not apply more than the recommended applications of **Karate Zeon® 5 CS** per season for any crop. Refer to “Directions for use” for the particular crop guidelines.

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- Apply **Karate Zeon® 5 CS** or other Group 3A insecticides using a “window” approach to avoid exposure of multiple successive pest generations to the same mode of action. A window is defined as the period of residual activity with insecticides of the same mode of action within an approximate 30 day period.
- Two successive applications of **Karate Zeon® 5 CS** may be made within a treatment window to protect new growth or control high pest populations.
- Following a window of use with **Karate Zeon® 5 CS** or other Group 3A insecticides, rotate to a window using effective insecticides with a different mode of action.
- Incorporate IPM practices (cultural and biological control) into the pest management program.
- Monitor insect populations for loss of field efficacy.
- Target the most sensitive life stage of the pest, typically small larvae.
- If you experience difficulty with control, and resistance is a reasonable cause, immediately consult your local company representative or agricultural advisor for the best alternate method of control for your area.

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DIRECTIONS FOR USE.

Warnings

PRE HARVEST INTERVALS

Minimum number of days between last application and harvesting:

Green beans, Cucurbits, Lettuce, Cotton	1 day.
Tomatoes	2 days.
Berries, Brassicas, Peas, Onions, Potatoes	3 days.
Dry beans, Maize, Sweetcorn, Macadamia	7 days.
Tobacco	14 days.
Grazing crops	28 days.

Compatibility

Karate Zeon® 5 CS is compatible with most insecticides and fungicides. As compatibility can be adversely

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affected by the quality of the water used in the mixture, the manufacturer recommends that a trial mixture be done using the water intended for spraying.

Mixing

Half-fill the sprayer tank with clean water. Shake the **Karate Zeon® 5 CS** container well. Add the recommended volume of **Karate Zeon® 5 CS** to the water while agitating. Top-up the tank with the required volume of water.

Always stir the spray mixture well and apply within a few hours. Do not prepare more spray mixture than is needed for the immediate operation.

Application

In all cases, apply as a full cover spray. Avoid run-off. Make sure the equipment is properly calibrated to give even distribution at the correct volume. Do not spray during the hot hours of the day, if the foliage is wet or if rain is imminent or if windy.

Spray intervals: Depend on scouting results.

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RATES

CROP	PEST	RATE			APPLICATION DIRECTIONS
		Plant Height	40 – 90 cm	Over 90 cm	
Cotton	Red, Spiny and Helicoverpa bollworms, Leaf eating caterpillars and Jassids	KARATE / ha	133 ml/ha	200 ml/ha	Add KARATE to a small quantity of water and stir well, then add the mixture to the prescribed quantity of water for use and stir well again. Do not mix with highly alkaline materials, eg. Hydrated lime and lime sulphur.
		Tailboom spray volume	100 L/ha	150 L/ha	
		Tractor mounted mistblower spray volume	65 L/ha	100 L/ha	
		GROUND ULV			
		Plant Height	40 – 90 cm	Over 90 cm	To make 1 litre spray mix: Add 40 ml KARATE to 350 ml molasses and make up to 1 litre with clean water (i.e. 610 ml); stir well, and use immediately.
		Ground ULV application spray volume	3,3 L/ha	5,0 L/ha	
		Swath width	3 rows	2 rows	
		Walking speed in metres / minute	60	60	

CROP	PEST	RATE/100 LT WATER	RATE/HA	APPLICATION DIRECTIONS
Tobacco Lands TRB Approval Cert. No.: 17-20-D-33	Cutworms a) At planting:	25 ml	112,5 ml	DRENCH IMMEDIATELY AFTER PLANTING Apply 30 ml cup/plant to wet stem and surrounding soil.
		35 ml	175 ml	SPRAY IMMEDIATELY AFTER PLANTING Apply at 500 litres / ha in 30 cm swath over plants.
			175 ml	SPRAY IMMEDIATELY AFTER PLANTING WITH HERBICIDE - add to herbicide mixture.
	b) Post Planting: Stem Damage Leaf damage	25 ml	112,5 – 250 ml	DRENCH APPLICATION – apply up to 2x30 ml cups per plant to wet soil surrounding the stem.
		35 ml	149 ml	SPRAY lower leaves and base of stem. Apply mixture at 425 L/ha.
			100 ml	SPRAY AT GERMINATION in a 300 mm swath over crop row. Ground: Apply in 150–300 litres water / ha. Aerial: Apply in 30–40 litres of water.
All crops excluding Cotton	Cutworm		100 ml	SPRAY AT GERMINATION in a 300 mm swath over crop row. Ground: Apply in 150–300 litres water / ha. Aerial: Apply in 30–40 litres of water.
Pastures	African armyworm	50 ml	100 ml	Apply approximately 200 Litres mixture / ha. Spray only infested area.

CROP	PEST	DOSAGE	APPLICATION DETAILS
Leafy vegetables and salad crops: e.g. cabbages, broccoli, cauliflower, kale, spinach, lettuce	Lepidoptera: Diamondback moth (DBM; <i>Plutella xylostella</i>); Other caterpillars (<i>Helicoverpa armigera</i> ; <i>Spodoptera littoralis</i> ; <i>loopers</i>)	200 ml/ha (1-4 sprays) in 200-1000 litres of water per ha	<ul style="list-style-type: none"> Application timing and frequency should be based on economic thresholds. Apply as required by scouting. Add wetting agent to waxy Brassica crops.
Potatoes and Fruiting Vegetables: e.g. tomatoes, peppers, chillies, eggplants cucumbers, squash, courgettes, melons	Lepidoptera: American bollworm (<i>Helicoverpa armigera</i> ; <i>Heliothis</i> spp.); Other caterpillars (Potato tuber moth; <i>Spodoptera littoralis</i> ; <i>Trichoplusia ni</i>)	200 ml/ha (1-4 sprays) in 200-1000 litres of water per ha	<ul style="list-style-type: none"> Application timing and frequency should be based on scouting. To control boring species, time applications before they bore into the fruits or stems.
Legumes: e.g. peas (mange-tout, sugar-snap, shelling); green beans, soyabeans	Lepidoptera: <i>Helicoverpa armigera</i> , <i>Spodoptera littoralis</i> , <i>Trichoplusia ni</i> .	200 ml/ha (1-4 sprays) in 200-1000 litres of water per ha	As for fruiting vegetables

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CROP	PEST	DOSAGE	APPLICATION DETAILS
Cucurbits: e.g. courgettes, cucumbers, squashes, pumpkin, water melon, melons	Lepidoptera: <i>Helicoverpa armigera</i> , <i>Spodoptera littoralis</i> , <i>Trichoplusia ni</i> .	200 ml/ha (1-4 sprays) in 200-1000 litres of water per ha	As for fruiting vegetables
Maize:	Lepidoptera: Maize stalk borers (<i>Chilo</i> spp; <i>Busseola</i> spp; & <i>Sesamia</i> spp).	200 ml/ha (1-4 sprays) in 200-400 litres of water per ha aiming to cover the funnel, tassel or silks depending on where the pest is feeding.	Scout for pests once a week for 7 weeks after crop emergence. Apply at the first sign of pest presence; apply a maximum of 2 sprays. To avoid resistance build-up refer to notes under INSECTICIDE RESISTANCE MANAGEMENT.

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CROP	PEST	DOSAGE	APPLICATION DETAILS
Berries: e.g. blueberries, raspberries, strawberries	Lepidoptera: <i>Helicoverpa armigera</i> , <i>Spodoptera littoralis</i> , <i>Trichoplusia ni</i> .	200 ml/ha (1-4 sprays) in 200-1000 litres of water per ha	As for fruiting vegetables

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SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier**Product name : **KARATE ZEON 50 CS**

Design code : A12688J

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use : Insecticide

1.3 Details of the supplier of the safety data sheetCompany : Syngenta Crop Protection AG
Postfach
CH-4002 Basel
Switzerland

Telephone : +41 61 323 11 11

Telefax : +41 61 323 12 12

E-mail address : sds.ch@syngenta.com

1.4 Emergency telephone number**Emergency tele-
phone number** : +44 1484 538444**SECTION 2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture**

Classification according to Regulation (EU) 1272/2008

Acute toxicity (Inhalation)	Category 4	H332
Acute toxicity (Oral)	Category 4	H302
Skin sensitization	Category 1	H317
Acute aquatic toxicity	Category 1	H400
Chronic aquatic toxicity	Category 1	H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xn, Harmful

N, Dangerous for the environment

R20/22: Harmful by inhalation and if swallowed.

R43: May cause sensitization by skin contact.

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

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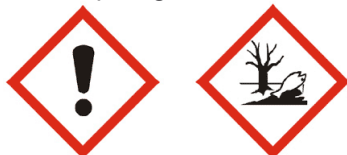
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2.2 Label elements

Labelling: Regulation (EC) No. 1272/2008

Hazard pictograms



Signal word	:	Warning	
Hazard statements	:	H302 + H332 H317 H410	Harmful if swallowed or if inhaled. May cause an allergic skin reaction. Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	P102 P270 P280 P302 + P352 P304 + P340 P391 P501	Keep out of reach of children. Do not eat, drink or smoke when using this product. Wear protective gloves/ protective clothing. IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Collect spillage. Dispose of contents/ container to an approved waste disposal plant.
Supplemental information	:	EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Hazardous components which must be listed on the label:

- lambda-cyhalothrin
- 1,2-benzisothiazol-3(2H)-one

Labelling: EU Directives 67/548/EEC or 1999/45/EC

Symbol(s)



Harmful



**Dangerous
for the envi-
ronment**

R-phrases(s)	:	R20/22 R43 R50/53	Harmful by inhalation and if swallowed. May cause sensitization by skin contact. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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S-phrase(s)	:	S 2	Keep out of the reach of children.
		S13	Keep away from food, drink and animal feedingstuffs.
		S20/21	When using do not eat, drink or smoke.
		S35	This material and its container must be disposed of in a safe way.
		S36/37	Wear suitable protective clothing and gloves.
		S57	Use appropriate container to avoid environmental contamination.

Additional Labelling : To avoid risks to man and the environment, comply with the instructions for use.

Hazardous components which must be listed on the label:

- lambda-cyhalothrin
- 1,2-benzisothiazol-3(2H)-one

2.3 Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration
lambda-cyhalothrin	91465-08-6 415-130-7	T+, N R21 R25 R26 R50/53	Acute Tox.3; H301 Acute Tox.3; H311 Acute Tox.2; H330 Aquatic Acute1; H400 Aquatic Chronic1; H410	5 % W/W
solvent naphtha (petroleum), highly arom.	64742-94-5 265-198-5	Xn, N R40 R51/53 R65 R66	Carc.2; H351 Asp. Tox.1; H304 Aquatic Chronic2; H411	>= 1 - <= 5 % W/W
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9	N, Xn R22 R38 R41 R43 R50	Acute Tox.4; H302 Skin Irrit.2; H315 Eye Dam.1; H318 Skin Sens.1; H317 Aquatic Acute1; H400	>= 0.05 - <= 1 % W/W

Substances for which there are Community workplace exposure limits.

For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H-Statements mentioned in this Section, see Section 16.

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SECTION 4. FIRST AID MEASURES**4.1 Description of first aid measures**

- General advice : Have the product container, label or Material Safety Data Sheet with you when calling the Syngenta emergency number, a poison control center or physician, or going for treatment.
- Inhalation : 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 centre immediately.
- Skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.
- 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.
- Ingestion : If swallowed, seek medical advice immediately and show this container or label.
Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Aspiration may cause pulmonary oedema and pneumonitis.
Skin contact paresthesia effects (itching, tingling, burning or numbness) are transient, lasting up to 24 hours.

4.3 Indication of any immediate medical attention and special treatment needed

- Medical advice : Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.
Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES**5.1 Extinguishing media**

Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Alcohol-resistant foam
or
Water spray

Do not use a solid water stream as it may scatter and spread fire.

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5.2 Special hazards arising from the substance or mixture

As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).

Exposure to decomposition products may be a hazard to health.

5.3 Advice for firefighters

Wear full protective clothing and self-contained breathing apparatus.

Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so.

Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

If the product contaminates rivers and lakes or drains inform respective authorities.

6.4 Reference to other sections

Refer to protective measures listed in sections 7 and 8.

Refer to disposal considerations listed in section 13.

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SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

No special protective measures against fire required.
 Avoid contact with skin and eyes.
 When using do not eat, drink or smoke.
 For personal protection see section 8.

7.2 Conditions for safe storage, including any incompatibilities

No special storage conditions required.
 Keep containers tightly closed in a dry, cool and well-ventilated place.
 Keep out of the reach of children.
 Keep away from food, drink and animal feedingstuffs.

7.3 Specific end uses

Registered Crop Protection products: For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	Exposure limit(s)	Type of exposure limit	Source
lambda-cyhalothrin	0.04 mg/m ³ (Skin)	8 h TWA	SYNGENTA
solvent naphtha (petroleum), highly arom.	15 ppm, 100 mg/m ³	8 h TWA	SUPPLIER

The following recommendations for exposure controls/personal protection are intended for the manufacture, formulation and packaging of the product.

8.2 Exposure controls

Engineering measures : Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.
 The extent of these protection measures depends on the actual risks in use.
 If airborne mists or vapors are generated, use local exhaust ventilation controls.
 Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit.
 Where necessary, seek additional occupational hygiene advice.

Protective measures : The use of technical measures should always have priority over the use of personal protective equipment.
 When selecting personal protective equipment, seek appropriate professional advice.
 Personal protective equipment should be certified to appropriate standards.

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- Respiratory protection : A combination gas, vapor and particulate respirator may be necessary until effective technical measures are installed.
Protection provided by air-purifying respirators is limited.
Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.
- Hand protection : Chemical resistant gloves should be used.
Gloves should be certified to an appropriate standard.
Gloves should have a minimum breakthrough time that is appropriate to the duration of exposure.
The breakthrough time of gloves varies according to the thickness, material and manufacturer.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Suitable material
Nitrile rubber
- Eye protection : Eye protection is not usually required.
Follow any site specific eye protection policies.
- Skin and body protection : Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation / penetration characteristics of the clothing material.
Wash with soap and water after removing protective clothing.
Decontaminate clothing before re-use, or use disposable equipment (suits, aprons, sleeves, boots, etc.)
Wear as appropriate:
impervious protective suit

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	: liquid
Form	: liquid
Colour	: off-white
Odour	: aromatic, weak
Odour Threshold	: no data available
pH	: 4.1 - 4.7
Melting point/range	: no data available
Boiling point/boiling range	: 100 °C
Flash point	: > 93 °C
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Lower explosion limit	: no data available
Upper explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Density	: 1.028 g/cm ³
Solubility in other solvents	: Miscible in Water
Partition coefficient: n-octanol/water	: no data available
Autoignition temperature	: no data available

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Thermal decomposition : no data available
Viscosity, dynamic : no data available
Viscosity, kinematic : no data available
Explosive properties : Not explosive
Oxidizing properties : not oxidizing

9.2 Other information

: no data available

SECTION 10. STABILITY AND REACTIVITY**10.1 Reactivity**

No information available.

10.2 Chemical stability

No information available.

10.3 Possibility of hazardous reactions

None known.
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

No information available.

10.5 Incompatible materials

No information available.

10.6 Hazardous decomposition products

Combustion or thermal decomposition will evolve toxic and irritant vapors.

SECTION 11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

Acute oral toxicity : Median lethal dose female rat, 522 mg/kg
Acute inhalation toxicity : LC50 female rat, > 2.09 mg/l , 4 h
Acute dermal toxicity : Median lethal dose male rat, > 2,000 mg/kg
Skin corrosion/irritation : rabbit: Practically non-irritating.
May cause temporary itching, tingling, burning or numbness of exposed skin, called paresthesia.
Serious eye damage/eye irritation : rabbit: Mildly irritating
Respiratory or skin sensitization : man: Likely to cause skin sensitization.
Germ cell mutagenicity
lambda-cyhalothrin : Did not show mutagenic effects in animal experiments.

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Carcinogenicity

lambda-cyhalothrin : Did not show carcinogenic effects in animal experiments.

Reproductive toxicity

lambda-cyhalothrin : Did not show reproductive toxicity effects in animal experiments.

STOT - repeated exposure

lambda-cyhalothrin : No adverse effect has been observed in chronic toxicity tests.

SECTION 12. ECOLOGICAL INFORMATION**12.1 Toxicity**Toxicity to fish : LC50 *Cyprinus carpio* (Carp), ca. > 12 µg/l , 96 h
Based on test results obtained with similar product.Toxicity to aquatic invertebrates : EC50 *Daphnia magna* (Water flea), > 2.6 µg/l , 46 h
Based on test results obtained with similar product.**Toxicity to aquatic plants**lambda-cyhalothrin : EC50 *Pseudokirchneriella subcapitata* (green algae), > 1 mg/l**12.2 Persistence and degradability****Stability in water**lambda-cyhalothrin : Degradation half life: 7 d
Not persistent in water**Stability in soil**lambda-cyhalothrin : Degradation half life: 56 d
Not persistent in soil.**12.3 Bioaccumulative potential**

lambda-cyhalothrin : Lambda-cyhalothrin bioaccumulates.

12.4 Mobility in soil

lambda-cyhalothrin : Lambda-cyhalothrin is immobile in soil.

12.5 Results of PBT and vPvB assessmentlambda-cyhalothrin : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).**12.6 Other adverse effects**

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None known.

SECTION 13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

- Product : Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.
- Contaminated packaging : Empty remaining contents.
Triple rinse containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**Land transport (ADR/RID)**

- 14.1 UN number: UN 3082
14.2 UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LAMBDA-CYHALOTHRIN)
14.3 Transport hazard class(es): 9
14.4 Packing group: III
Labels: 9
14.5 Environmental hazards : Environmentally hazardous

Sea transport(IMDG)

- 14.1 UN number: UN 3082
14.2 UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LAMBDA-CYHALOTHRIN)
14.3 Transport hazard class(es): 9
14.4 Packing group: III
Labels: 9
14.5 Environmental hazards : Marine pollutant

Air transport (IATA-DGR)

- 14.1 UN number: UN 3082
14.2 UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LAMBDA-CYHALOTHRIN)
14.3 Transport hazard class(es): 9
14.4 Packing group: III
Labels: 9

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14.6 Special precautions for user

none

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15. REGULATORY INFORMATION

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

GHS-Labeling

Hazard pictograms



Signal word	:	Warning	
Hazard statements	:	H302 + H332 H317 H410	Harmful if swallowed or if inhaled. May cause an allergic skin reaction. Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	P102 P270 P280 P302 + P352 P304 + P340 P391 P501	Keep out of reach of children. Do not eat, drink or smoke when using this product. Wear protective gloves/ protective clothing. IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Collect spillage. Dispose of contents/ container to an approved waste disposal plant.
Supplemental information	:	EUH401	To avoid risks to human health and the environment, comply with the instructions for use.
Remarks	:	Classified using all GHS hazard classes and categories. Where the GHS contains options, the most conservative option has been chosen. Regional or national implementations of GHS may not implement all hazard classes and categories.	

Hazardous components which must be listed on the label:

- lambda-cyhalothrin
- 1,2-benzisothiazol-3(2H)-one

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15.2 Chemical Safety Assessment

A Chemical Safety Assessment is not required for this substance.

SECTION 16. OTHER INFORMATION**Further information**

Full text of R-phrases referred to under sections 2 and 3:

R21	Harmful in contact with skin.
R22	Harmful if swallowed.
R25	Toxic if swallowed.
R26	Very toxic by inhalation.
R38	Irritating to skin.
R40	Limited evidence of a carcinogenic effect.
R41	Risk of serious damage to eyes.
R43	May cause sensitization by skin contact.
R50	Very toxic to aquatic organisms.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.

Full text of H-Statements referred to under sections 2 and 3.

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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