

SAFETY DATA SHEET

Section 1: IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND SUPPLIER

Product Name:	KARATE ZEON
Design Code:	A12871F / A12871Q
Recommended Use:	For insect control in Cereals, Citrus, Grapes, Vegetable and Forage Brassicas, Tomatoes, Beans, Onions, Potatoes, Maize, Sweetcorn (seedlings) and White Clover seed crops.
Company Details:	Syngenta Crop Protection Limited
Address:	Tower II, Level 7, 110 Symonds Street Private Bag 92618, Symonds Street AUCKLAND NEW ZEALAND
Telephone number:	(weekdays) 09 - 306 1500
Emergency Telephone number:	(24 Hours) 0800 734 607
National Poisons & Hazchem Information Centre :	0800 POISON (0800 764 766)
Date of Preparation:	6 March, 2013

Section 2: HAZARDS IDENTIFICATION

Hazard classification:	6.1C, 6.3B, 6.4A, 6.9A, 9.1A, 9.3B, 9.4A
Priority Identifier:	DANGER KEEP OUT OF REACH OF CHILDREN
Secondary Identifiers:	<p>6.1C = May be fatal if swallowed, inhaled or absorbed through the skin.</p> <p>6.3B = May cause skin irritation. Skin contact may cause a temporary sensation of the skin, such as numbness, tingling, pricking, burning or creeping of the skin.</p> <p>6.4A = May cause eye irritation</p> <p>6.9A = May cause neurotoxicity and lung damage from repeated oral and inhalation exposure at high doses.</p> <p>9.1A = Very toxic to aquatic organisms.</p> <p>9.3B = Toxic to terrestrial vertebrates.</p> <p>9.4A = Very toxic to terrestrial invertebrates.</p>

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

<i>Pure Substance:</i>	
Chemical Identity of pure substance:	[1 α (S*),3 α (Z)]-(±)-cyano(3-phenoxyphenyl)methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate
Common Name:	Lambda-cyhalothrin
Synonyms:	PP321
CAS number:	91465-08-6

<i>Mixture:</i>		
Chemical Identity of ingredients:		
Ingredient	CAS no.	Content (% w/v)
Lambda-cyhalothrin (technical grade)	91465-08-6	25
Solvent naphtha (petroleum), highly arom.	64742-94-5	15-20
Octadecanoic acid, 12-hydroxy-, homopolymer, octadecanoate (9CI)	58128-22-6	1-5
1,2-benzisothiazol-3(2H)-one	2634-33-5	0.05-1
other ingredients determined not to be hazardous	-	to 100%

Section 4: FIRST AID MEASURES

Necessary First Aid measures:	<p>For advice contact the National Poisons Centre on 0800 POISON (0800 764 766) or a doctor immediately. Begin artificial respiration if the victim is not breathing. Use mouth to nose rather than mouth to mouth. Obtain medical attention.</p> <p>Swallowed: If swallowed DO NOT induce vomiting.</p> <p>Eye: If concentrate or spray solution enters the eyes wash it out immediately with water. Remove contact lenses.</p> <p>Skin: If skin contact occurs remove contaminated clothing and wash affected areas thoroughly with running water.</p> <p>Inhaled: If inhaled move the victim to fresh air immediately</p>
Poisoning symptoms:	<p>No case of human poisoning due to this product is on record. The poisoning symptoms observed for laboratory mammals were non-specific.</p>
Workplace facilities:	<p>No specific facilities required. Standard emergency equipment must be available.</p>
Hygiene Practices:	<p>Avoid contact with skin and eyes and inhalation of concentrate or spray mist. When mixing or applying, wear protective clothing, including face shield, impervious gloves and footwear. If clothing becomes contaminated with product, remove clothing immediately. DO NOT eat, drink or smoke while using. Wash hands and exposed skin thoroughly with soap and water before meals and after work. Wash protective clothing daily after work.</p>
Notes for Medical Personnel:	<p>No specific antidote is available. If poisoning is suspected apply symptomatic therapy. Persons suffering a temporary allergic reaction may respond to treatment with anti-histamines or steroid creams and/or systemic steroids. Skin contact paresthesia effects (itching, tingling, burning or numbness) are transient, lasting up to 24 hours. Treat symptomatically.</p> <p>Contains petroleum distillate - vomiting may cause aspiration pneumonia.</p>

Section 5: FIRE-FIGHTING MEASURES

Type of Hazard:	Does not flash.
Fire Hazard Properties:	During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.
Regulatory Requirements:	not required
Extinguishing Media and methods:	Extinguish warehouse and factory fires using dry chemical extinguisher, foam, carbon dioxide or fine-water spray. DO NOT use direct jet of water.
Hazchem Code:	2X
Recommended Protective Clothing:	When fighting a major fire wear an air-supplied respirator. Wear protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Emergency Procedures: Ensure suitable personal protection during removal of spillages. This means wearing eye protection, chemically resistant gloves, boots and overalls.
Environmental Precautions:	Washings must be prevented from entering surface water drains or waterways.
Procedure for spill:	<ol style="list-style-type: none">(1) Keep all bystanders away.(2) Wear goggles, half face-piece respirator with combined dust and vapour cartridge, full length clothing and PVC gloves.(3) Reposition any leaking containers so as to minimise further leakage.(4) Dam and absorb spill with an absorbent material (e.g. sand or soil).(5) Shovel the absorbed spill into drums.(6) Decontaminate the spill area with detergent and water and rinse with the smallest volume of water practicable.
Procedure for Disposal:	Disposal of the absorbed material will depend upon the extent of the spill. Contaminated material must be disposed of in accordance with all local authority requirements. It is suggested: <ul style="list-style-type: none">• For quantities up to 50 litres of product bury in a secure approved landfill site.• For quantities greater than 50 litres seek advice from the manufacturer (use emergency contact number below) before attempting disposal. Contain in a secure location until disposal method is established.

Section 7: HANDLING AND STORAGE

Precautions for safe handling:	Handling: No special technical protective measures required. No special handling advice required.
Regulatory Requirements: Handling practices:	This product must be tracked Avoid contact with skin and eyes and inhalation of concentrate or spray mist. When using, do not eat, drink or smoke. Wash face and hands before eating, drinking or smoking.
Approved Handlers:	This product must be under the control of an Approved Handler.
Conditions for Safe Storage:	Storage: Keep out of reach of children. Keep in original containers and tightly closed. Keep away from food, drink and animal feeding stuffs. Store in a cool, dry, well ventilated place and protect from sunlight. Avoid temperatures above 35°C.
Store Site Requirements:	Signage and secondary containment will be required at sites holding 100 litres or more of any product classified as 9.1A (eg KARATE ZEON).
Packaging:	Store in original container, tightly closed, away from foodstuffs.

Section 8: EXPOSURE CONTROL / PERSONAL PROTECTION

ALWAYS READ AND FOLLOW THE LABEL INSTRUCTIONS AND WARNINGS

Workplace Exposure Guidelines:	
Workplace Exposure Standards:	<p>Lambda-cyhalothrin 8 h TWA: 0.04 mg/m³ (skin)</p> <p>Solvent naphtha (petroleum), highly arom. 8 h TWA: 100 mg/m³</p>
Application in the workplace:	not required
Exposure standards outside the workplace:	not required
Engineering controls:	<p>No special requirements. Product is used outdoors. 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.</p> <p>Follow precaution statements on the label and the use and safety directions in Code of Practice for the Management of Agrichemical NZS8409.</p>
Personal Protection:	Use only protective equipment bearing the mark of the Standards Association with Australia/ New Zealand. In case of heavy exposure, wear half face-piece respirator with combined dust and vapour cartridge, chemical resistant gloves and heavy duty cotton overalls.
General Hygiene:	Change work clothes daily. May irritate the eyes and skin. Avoid contact with eyes and skin. Do not inhale spray mist. If product gets on skin immediately wash area with soap and water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Off-white to beige liquid
Odour:	Faint hydrocarbon
Boiling Point:	not available
Specific Gravity / Density:	1.098 g/ml
pH value	>4.5-6.0 at 100% w/v
Solubility in water	Lambda-cyhalothrin: 0.004 mg/l
Vapour Pressure:	Lambda-cyhalothrin: 1.5 x 10 ⁽⁻⁹⁾ mmHg at 20°C

Section 10: STABILITY AND REACTIVITY

Stability of the Substance:	Stable under normal conditions.
Conditions to Avoid:	none known
Material to Avoid:	none known
Hazardous decomposition products	Can decompose at high temperatures forming toxic gases.
Hazardous polymerisation	does not occur
Specific Data	not applicable

Section 11: TOXICOLOGICAL INFORMATION

HSNO Classifications:

- 6.1C = May be harmful if swallowed, inhaled or absorbed through the skin.
 6.3B = May cause skin irritation
 6.4A = May cause eye irritation
 6.9A = May cause neurotoxicity and lung damage from repeated oral and inhalation exposure at high doses.

Acute Effects (Undiluted product)

Swallowed:	LD ₅₀	=180 mg/kg (rat)
Dermal absorption:	LD ₅₀	>2000 mg/kg (rat)
Inhaled:	LC ₅₀ (4 h)	=3.12 mg/l (rat)
<u>Irritation</u>		
Eye:	IRRITANT (rabbit)	
Skin:	IRRITANT (rabbit)	
<u>Sensitization</u>	NOT A SENSITISER (HSNO Classification)	

Chronic / Long Term Effects (Active Ingredient)

Lambda-cyhalothrin technical has been extensively tested on laboratory mammals and in test-tube systems. No evidence of mutagenic, teratogenic or reproductive effects was obtained. Effects of paresthesia (abnormal skin sensation) and neurotoxicity were reversible.

Section 12: ENVIRONMENTAL INFORMATION

HSNO Classifications:

- 9.1A = Very toxic to aquatic organisms.
 9.3B = Toxic to terrestrial vertebrates.
 9.4A = Very toxic to terrestrial invertebrates.

The information presented below is for the active ingredient, lambda-cyhalothrin. A thorough review of environmental information is not possible in this document.

Ecotoxicity Effects

Acute toxicity to birds:	LD ₅₀ = >3950 mg/kg (mallard ducks)
Acute toxicity to fish:	LC ₅₀ = 0.36ug/l (trout); 96 h LC ₅₀ = 0.21ug/l (bluegill sunfish); 96 h
Toxicity to aquatic Invertebrates:	EC ₅₀ / EC ₅₀ = 0.36ug/l (Daphnia magna (water flea))
Toxicity to soil dwelling organisms:	LC ₅₀ = >1000 mg/kg soil (<i>Eisenia foetida</i>)
Toxicity to Bees:	LD ₅₀ (contact) = 909ng /bee LD50 (oral) = 38 ng/bee

Environmental Fate

The information provided here is for the active ingredient, Lambda-cyhalothrin.
 Not persistent in soil or water. Immobile in soil.
 Rapidly degraded in soil; DT₅₀ for microbial degradation 23-82 days, for field soil 6-40 days. Strongly adsorbed to soil and sediment organic matter, K_{oc} 330 000. Negligible potential for leaching of lambda-cyhalothrin through soil.
 Rapid dissipation from water in aquatic systems. DT₅₀ for dissipation from surface waters in lab water-sediment systems 5-11 hours; in a microcosm DT₅₀ <3 hours. Rapid and extensive degradation of parent compound in aquatic systems; DT₅₀ for degradation in label water-sediment systems 7-15 days; in a microcosm DT₅₀ <3 hours, DT₉₀ < 3 days. K_{ow} logP = 7 (20°C)

Section 13: DISPOSAL CONSIDERATIONS

Product Disposal: Dispose of this product only by using according to the label, or at an approved landfill or other approved facility.

Container Disposal: Ensure the container is empty. Triple rinse empty container and add rinsate to the tank. Recycle empty container through Agrecovery (0800 247 326, www.agrecovery.co.nz). Otherwise crush and bury in a suitable landfill. DO NOT reuse this container for any other purpose.

Section 14: TRANSPORT INFORMATION

Rail / Road (RID/ADR)	UN-No:	3352
	Class:	6
	Packaging Group:	III
	Proper shipping name:	PYRETHROID PESTICIDE, LIQUID, TOXIC (Lambda-cyhalothrin)
Sea (IMDG-Code)	UN-No:	3352
	Class:	6
	Packaging Group:	III
	Proper shipping name:	PYRETHROID PESTICIDE, LIQUID, TOXIC (Lambda-cyhalothrin)
	MARINE POLLUTANT:	Marine pollutant
Air (ICAO/IATA)	UN-No:	3352
	Class:	6
	Packaging Group:	III
	Proper shipping name:	PYRETHROID PESTICIDE, LIQUID, TOXIC (Lambda-cyhalothrin)

Section 15: REGULATORY INFORMATION

HSNO Approval Number:	HSR000336
HSNO Controls (inc. Tracking and Record Keeping):	See http://www.epa.govt.nz/search-databases/Pages/controls-search.aspx for controls.
ACVM Registration:	P 3495
ACVM Controls:	See www.foodsafety.govt.nz/industry/acvm for registration conditions.

Section 16: OTHER INFORMATION

Note: This product is a registered agricultural chemical and must therefore be used in accordance with the container label directions. A comprehensive package of toxicological and environmental data for the active ingredients of this product has been submitted to the Government health and environment authorities and has been evaluated by expert toxicologists and environmental scientists.

CONTACT POINT: Business Manager - Crop Protection: (09) 306 1503
24 HOURS EMERGENCY CONTACT: 0800 734 607

This Material Safety Data Sheet summarises 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 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 this company.

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DISCLAIMER

This product complies with the specifications in its statutory registration. Implied terms and warranties are excluded. Syngenta's liability for breach of the express or any non-excludable implied warranty is limited to product replacement or purchase price refund. The purchaser must determine suitability for intended purpose and take all proper precautions in the handling, storage and use of the product including those on the label and/or safety data sheet failing which Syngenta shall have no liability.