


## SAFETY DATA SHEET

### Section 1: Identification: Product identifier and chemical identity

<b>Product Identifier:</b>	<b>KARATE ZEON Insecticide</b>
<b>Other Means of Identification:</b>	<b>Proper shipping name:</b> Pyrethroid Pesticide, Liquid, Toxic (lambda-cyhalothrin) <b>Product code:</b> A12817F
<b>Recommended Use:</b>	Insecticide for the control of certain insect pests in barley, cotton, wheat and various field crops
<b>Details of manufacturer or importer</b>	<b>Syngenta Australia Pty Ltd</b> ABN 33 002 933 717
<b>Address:</b>	<b>Level 1, 2-4 Lyonpark Road</b> <b>MACQUARIE PARK NSW 2113</b> <b>AUSTRALIA</b>
<b>Website:</b>	<b>syngenta.com.au</b>
<b>Phone Number:</b>	<b>(02) 8876 8444</b>
<b>Emergency Phone Number:</b>	<b>24 hours - 1800 033 111</b>

### Section 2: Hazards identification

<b>Classification of the Hazardous Chemical:</b>	<ul style="list-style-type: none"><li>• Acute toxicity – oral – Category 3</li><li>• Acute toxicity – inhalation – Category 4</li><li>• Skin sensitisation – Category 1</li><li>• Aspiration hazard – Category 1</li></ul>
<b>Signal Word:</b>	Danger
<b>Hazard Statement(s):</b>	H301 Toxic if swallowed. H304 May be fatal if swallowed and enters airways. H317 May cause an allergic skin reaction. H332 Harmful if inhaled.
<b>Precautionary Statement(s):</b>	P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P261 Wear protective gloves/ protective clothing. P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth. P331 Do NOT induce vomiting. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention P501 Dispose of contents/ container to an approved waste disposal plant.
<b>Hazard Symbols:</b>	

### Section 3: Composition and information on ingredients

SUBSTANCE	
<b>Chemical Identity of Pure Substance:</b>	Lambda-cyhalothrin
<b>Synonym:</b>	PP321
<b>CAS Number:</b>	91465-08-6

MIXTURE		
Chemical Identity of Ingredients:	CAS No	Proportion (% w/v)
Lambda-cyhalothrin	91465-08-6	
Mixture of heavy aromatic hydrocarbons	64742-94-5	10 - <30
Lignosulphonate	68512-34-5	<10
Polymeric fatty ester	58128-22-6	<10
Titanium dioxide	13463-67-7	<10
DL-propandediol-(1,2)	57-55-6	<1
1,2-benzisothiazol-3(2H)-one	2634-33-5	<1
Non-hazardous ingredients	-	to 100

### Section 4: First aid measures

<b>Description of Necessary First Aid Measures:</b>	<p>In case of poisoning by any exposure route get to a doctor or hospital quickly. Phone Poisons Information Centre on 131 126. Have the product label or SDS with you when calling or going for treatment.</p> <p><b>Ingestion:</b> If swallowed, seek medical advice immediately and show this container or label. DO NOT induce vomiting.</p> <p><b>Eye contact:</b> Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.</p> <p><b>Skin contact:</b> 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.</p> <p><b>Inhalation:</b> 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.</p>
<b>Symptoms Caused by Exposure:</b>	<p>Aspiration may cause pulmonary oedema and pneumonitis. Skin contact paresthesia effects (itching, tingling, burning or numbness) are transient, lasting up to 24 hours.</p>
<b>Medical Attention and Special Treatment:</b>	<p>DO NOT induce vomiting: contains petroleum distillates and/or aromatic solvents. Treat symptomatically.</p>

## Section 5: Fire fighting measures

<b>Suitable Extinguishing Equipment:</b>	<p><b>Small fires:</b> Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.</p> <p><b>Large fires:</b> Alcohol-resistant foam or water spray</p> <p>DO NOT use a solid water stream as it may scatter and spread fire.</p>
<b>Specific Hazards Arising from the Chemical:</b>	<p>As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion. Combustion or thermal decomposition will evolve toxic and irritant vapours. Exposure to decomposition products may be a hazard to health.</p>
<b>Special Protective Equipment and Precautions for Fire Fighters:</b>	<p>Wear full protective clothing and self-contained breathing apparatus. DO NOT allow run-off from fire fighting to enter drains or water courses.</p> <p>Cool closed containers exposed to fire with water spray.</p>
<b>Hazchem Code:</b>	2X

## Section 6: Accidental release measures

<b>Personal Precautions, Protective Equipment and Emergency Procedures:</b>	<p>In case of spillage it is important to take all steps necessary to</p> <ul style="list-style-type: none"> <li>• Avoid eye and skin contact</li> <li>• Avoid contamination of waterways             <ul style="list-style-type: none"> <li>• Wear full length clothing and PVC gloves</li> <li>• Keep all bystanders away</li> </ul> </li> </ul>
<b>Environmental precautions:</b>	<p>Prevent further leakage or spillage if safe to do so.          DO NOT flush into surface water or sanitary sewer system.          If the product contaminates rivers and lakes or drains inform respective authorities.</p>
<b>Methods and Materials for Containment and Clean Up:</b>	<p><b>Procedure for spill</b></p> <ol style="list-style-type: none"> <li>(1) Keep all bystanders away</li> <li>(2) Wear full length clothing and PVC gloves</li> <li>(3) Reposition any leaking containers so as to minimise further leakage</li> <li>(4) Dam and absorb spill with an absorbent material (eg sand or soil)</li> <li>(5) Shovel the absorbed spill into drums</li> <li>(6) Disposal of the absorbed material will depend upon the extent of the spill             <ul style="list-style-type: none"> <li>• For quantities up to 50 L of product bury in a secure landfill site</li> <li>• For quantities greater than 50 L seek advice from the manufacturer (use emergency contact number below) before attempting disposal. Contain in a secure location until disposal method is established</li> </ul> </li> <li>(7) Decontaminate spill area with detergent and water and rinse with the smallest volume of water practicable</li> </ol>

## Section 7: Handling and storage

<b>Precautions for Safe Handling:</b>	<p>Harmful if inhaled or swallowed. Will irritate the eyes and skin. Repeated exposure may cause allergic disorders. Facial skin contact may cause temporary facial numbness. Avoid contact with eyes and skin. When opening the container, preparing the spray and using the prepared spray, wear:</p> <ul style="list-style-type: none"> <li>• cotton overalls buttoned to the neck and wrist</li> <li>• a washable hat</li> <li>• elbow-length PVC gloves</li> <li>• face shield</li> </ul> <p>If product on skin, immediately wash area with soap and water. Wash hands after use. After each day's use, wash gloves, face shield and contaminated clothing.</p>
<b>Conditions for Safe Storage, Including any Incompatibilities:</b>	<p>Store in the closed, original container in a cool, well ventilated area. DO NOT store for prolonged periods in direct sunlight. Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers.</p>

## Section 8: Exposure controls and personal protection

### ALWAYS READ AND FOLLOW THE LABEL INSTRUCTIONS AND WARNINGS

	Component	Exposure limit	Value type
<b>National Exposure Standards:</b>	Titanium dioxide	10 mg/m <sup>3</sup>	TWA
	Sulphuric acid	1 mg/m <sup>3</sup>	TWA
		3 ppm	STEL
	Propylene glycol (particulates only)	10 mg/m <sup>3</sup>	TWA
	Propylene glycol total (particulates & vapours)	474 mg/m <sup>3</sup>	TWA
		150 ppm	TWA
<b>Syngenta Exposure Standards:</b>	Lambda-cyhalothrin (skin)	0.04 mg/m <sup>3</sup>	TWA
<b>Supplier Exposure Standards:</b>	Mixture of heavy aromatic hydrocarbons	100 mg/m <sup>3</sup>	8h TWA
<b>Biological Limit Values:</b>	No biological limits allocated		
<b>Engineering Controls:</b>	No special requirements. Product is used outdoors.		
<b>Personal Protective Equipment:</b>	<p>Harmful if inhaled or swallowed. Will irritate the eyes and skin. Repeated exposure may cause allergic disorders. Facial skin contact may cause temporary facial numbness. Avoid contact with eyes and skin. When opening the container, preparing the spray and using the prepared spray, wear:</p> <ul style="list-style-type: none"> <li>• cotton overalls buttoned to the neck and wrist</li> <li>• a washable hat</li> <li>• elbow-length PVC gloves</li> <li>• face shield</li> </ul> <p>If product on skin, immediately wash area with soap and water. Wash hands after use. After each day's use, wash gloves, face shield and contaminated clothing.</p>		

## Section 9: Physical and chemical properties

<b>Appearance:</b>	Off-white to beige liquid	<b>Boiling Point/Range:</b>	Not available
<b>Odour:</b>	Faint hydrocarbon	<b>Freezing/Melting Point:</b>	Not available
<b>pH:</b>	4 – 7 at 1% w/v	<b>Solubility:</b>	Miscible in water
<b>Vapour Pressure:</b>	Not available	<b>Specific Gravity or Density:</b>	1.089 – 1.098 g/mL
<b>Vapour Density:</b>	Not available		

<b>Flash Point:</b>	Not available	<b>Explosive Properties:</b>	Not explosive
<b>Upper and Lower Flammable (Explosive) Limits in Air:</b>	Not available	<b>Oxidising Properties:</b>	Not oxidising
<b>Ignition Temperature:</b>	Not available	<b>Combustibility:</b>	Not combustible
		<b>Corrosiveness:</b>	Corrosive to tin plate, galvanised sheet metal, sheet steel. Not corrosive to stainless steel.

## Section 10: Stability and reactivity

<b>Reactivity:</b>	No hazardous reactions by normal handling and storage according to provisions.
<b>Chemical Stability:</b>	The product is stable when used in normal conditions
<b>Possibility of Hazardous Reactions:</b>	No hazardous reactions by normal handling and storage according to provisions.
<b>Conditions to Avoid:</b>	No decomposition if used as directed.
<b>Incompatible Materials:</b>	No substances are known which lead to the formation of hazardous substances or thermal reactions.
<b>Hazardous Decomposition Products:</b>	Combustion or thermal decomposition will evolve toxic and irritant vapours.

## Section 11: Toxicological information

Health Effects from Likely Routes of Exposure:		
<b>Acute</b>	<b>Oral toxicity:</b>	<b>TOXIC</b> Tests on rats indicate this product is toxic following single doses of a similar formulation. Aspiration hazard if swallowed – can enter lungs and cause damage (LD <sub>50</sub> = 245 mg/kg, male) (LD <sub>50</sub> = 180 mg/kg, female)
	<b>Dermal toxicity:</b>	<b>LOW TOXICITY</b> Tests on rats indicate this product has a low toxicity following skin contact with a similar formulation. (LD <sub>50</sub> > 2,000 mg/kg)
	<b>Inhalation:</b>	<b>HARMFUL</b> Tests on rats indicate this product harmful due to inhalation of a similar formulation. LC <sub>50</sub> (4h) = 3.12 mg/L air
	<b>Skin irritation:</b>	<b>NON IRRITANT</b> May cause temporary itching, tingling, burning or numbness of exposed skin, called paraesthesia.

<b>Eye irritation:</b>	<b>NON IRRITANT</b>
<b>Sensitisation:</b>	<b>SENSITISER</b>
<b>Chronic</b>	<b>Lambda-cyhalothrin technical</b> has been extensively tested on laboratory mammals and in test-tube systems. No evidence was obtained of mutagenic, carcinogenic, teratogenic, neurotoxic or reproductive effects. <b>Solvent naphtha (petroleum), heavy arom.</b> may be fatal if swallowed and enters airways.

## Section 12: Ecological information

<b>Ecotoxicity</b>	<b>Toxicity to fish:</b> <b>Very highly toxic to fish</b> <i>Oncorhynchus mykiss</i> (rainbow trout): LC <sub>50</sub> = 0.00761 mg/L, 96 h (based on test results obtained with similar product)
	<b>Toxicity to daphnia and other aquatic invertebrates:</b> <b>Very highly toxic to Daphnia</b> <i>Daphnia magna</i> (Water flea): EC <sub>50</sub> = 0.00746 mg/L, 48 h
	<b>Toxicity to algae:</b> <b>Moderately toxic to algae</b> <i>Pseudokirchneriella subcapitata</i> (green algae): ErC <sub>50</sub> = 5.92 mg/L, 72 h
<b>Persistence and Degradability:</b>	Lambda-cyhalothrin is not readily biodegradable. Lambda-cyhalothrin is not persistent in water (Degradation half-life: 7 d). Lambda-cyhalothrin is not persistent in soil.
<b>Mobility in Soil:</b>	Lambda-cyhalothrin is immobile in soil.
<b>Bioaccumulative Potential:</b>	Lambda-cyhalothrin bioaccumulates.

## Section 13: Disposal considerations

<b>Disposal Methods:</b>	Triple or preferably pressure rinse empty containers before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.
<b>Special Precautions for Incineration or Landfill:</b>	Not applicable

## Section 14: Transport information

<b>LAND TRANSPORT</b>			
ADG			
<b>UN Number:</b>	3352	<b>Packing Group:</b>	III
<b>UN Proper Shipping Name:</b>	Pyrethroid Pesticide, Liquid, N.O.S. (Lambda-cyhalothrin)	<b>Special Precautions for User:</b>	None allocated
<b>Transport Hazard Class:</b>	6.1	<b>Hazchem or Emergency Action Code:</b>	2X
<b>Subsidiary Risk:</b>	None allocated		

<b>SEA TRANSPORT</b> IMDG			
<b>UN Number:</b>	3352	<b>Subsidiary Risk:</b>	None allocated
<b>UN Proper Shipping Name:</b>	Pyrethroid Pesticide, Liquid, N.O.S. (Lambda-cyhalothrin)	<b>Packing Group:</b>	III
<b>Transport Hazard Class:</b>	6.1	<b>Environmental hazards for Transport Purposes:</b>	Marine pollutant

<b>AIR TRANSPORT</b> IATA - DGR			
<b>UN Number:</b>	3352	<b>Subsidiary Risk:</b>	None allocated
<b>UN Proper Shipping Name:</b>	Pyrethroid Pesticide, Liquid, N.O.S. (Lambda-cyhalothrin)	<b>Packing Group:</b>	III
<b>Transport Hazard Class:</b>	6.1		

### Section 15: Regulatory information

<b>APVMA Product Number:</b>	51422
<b>Poisons Schedule (SUSMP):</b>	6

### Section 16: Any other relevant information

<b>Date of preparation or last revision:</b> June 2016
<b>Source of Data:</b> The information provided in this SDS is sourced from Syngenta internal studies which have been conducted according to Regulatory requirements including OECD and CIPAC Guidelines and EC Directives. 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.
<b>Note:</b> This product is a registered agricultural chemical and must, therefore, be used in accordance with the container label directions
<b>CONTACT POINT:</b> Regulatory Affairs Manager, Syngenta Australia Pty Ltd (02) 8876 8444 <b>24 HOURS EMERGENCY CONTACT: 1800 033 111</b>
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 SDS 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.
<b>DISCLAIMER</b> 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.