

## SAFETY DATA SHEET

## Section 1: IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND SUPPLIER

<b>Product Name:</b>	<b>DEMAND</b>
<b>Design Code:</b>	A12689A
<b>Recommended Use:</b>	For residual control of Cockroaches, Spiders, Flies, Ants, Woodlice, Silverfish, Carpet Beetles, Fleas and Mosquitoes. In and around domestic and industrial premises and certain food preparation areas and storage sites
<b>Company Details:</b>	<b>Syngenta Crop Protection Limited</b>
<b>Address:</b>	<b>Tower II, Level 7, 110 Symonds Street Private Bag 92618, Symonds Street AUCKLAND NEW ZEALAND</b>
<b>Telephone number:</b>	<b>(weekdays) 09 - 306 1500</b>
<b>Emergency Telephone number:</b>	<b>(24 Hours) 0800 734 607</b>
<b>National Poisons &amp; Hazchem Information Centre :</b>	<b>0800 POISON (0800 764 766)</b>
<b>Date of Preparation:</b>	<b>12 May, 2010</b>

## Section 2: HAZARDS IDENTIFICATION

<b>Hazard classification:</b>	6.1D, 6.3A, 6.4A, 6.5B, 6.9B, 9.1A, 9.3C, 9.4A
<b>Priority Identifier:</b>	WARNING KEEP OUT OF REACH OF CHILDREN
<b>Secondary Identifiers:</b>	6.1D = May be harmful if swallowed, inhaled or absorbed through the skin. 6.3A = May cause skin irritation 6.4A = May cause eye irritation 6.5B = May cause sensitisation from prolonged skin contact. 6.9B = May cause neurotoxic damage from repeated oral exposure at high doses. 9.1A = Very toxic to aquatic organisms. 9.3C = Harmful to terrestrial vertebrates. 9.4A = Very toxic to terrestrial invertebrates.

## Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

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

<i>Mixture:</i>		
<b>Chemical Identity of ingredients:</b>		
<b>Ingredient</b>	<b>CAS no.</b>	<b>Content (% w/v)</b>
<b>Lambda-cyhalothrin (technical grade)</b>	91465-08-6	2.5
Solvent naptha (petroleum), light aromatic	64742-94-5	< 10
Propane-1,2-diol (Propylene glycol)	57-55-6	< 10
1,2-benzisothiazol-3 (2H)-one	2634-33-5	<1
other ingredients determined not to be hazardous	-	to 100%

## Section 4: FIRST AID MEASURES

<b>Necessary First Aid measures:</b>	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.
	Swallowed: If swallowed <b>DO NOT</b> induce vomiting.
	Eye: If concentrate or spray solution enters the eyes wash it out immediately with water. Remove contact lenses.
	Skin: If skin contact occurs remove contaminated clothing and wash affected areas thoroughly with running water.
	Inhaled: If inhaled move the victim to fresh air immediately
<b>Poisoning symptoms:</b>	Skin contact paresthesia effects (itching, tingling, burning or numbness) are transient, lasting up to 24 hours.
<b>Workplace facilities:</b>	No specific facilities required. Standard emergency equipment must be available.
<b>Hygiene Practices:</b>	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. <b>DO NOT</b> 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.
<b>Notes for Medical Personnel:</b>	Skin contact paresthesia effects (itching, tingling, burning or numbness) are transient, lasting up to 24 hours. Treat symptomatically. <b>DO NOT</b> induce vomiting: contains petroleum distillates and/or aromatic solvents.

## Section 5: FIRE-FIGHTING MEASURES

<b>Type of Hazard:</b>	Does not flash.
<b>Fire Hazard Properties:</b>	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.
<b>Regulatory Requirements:</b>	not required
<b>Extinguishing Media and methods:</b>	<i>Small fires</i> Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Do not use a solid water stream as it may scatter and spread fire. <i>Large fires</i> Use alcohol-resistant foam or water spray. Do not use a solid water stream as it may scatter and spread fire.
<b>Hazchem Code:</b>	2X
<b>Recommended Protective Clothing:</b>	Wear protective clothing and self-contained breathing apparatus.

## Section 6: ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	<b>Emergency Procedures:</b> Ensure suitable personal protection during removal of spillages. This means wearing eye protection, chemically resistant gloves, boots and overalls.
<b>Environmental Precautions:</b>	Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.
<b>Procedure for spill:</b>	<ol style="list-style-type: none"> <li>(1) Keep all bystanders away.</li> <li>(2) Wear goggles, half face-piece respirator with combined dust and vapour cartridge, 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 (e.g. sand or soil).</li> <li>(5) Shovel the absorbed spill into drums.</li> <li>(6) Decontaminate the spill area with detergent and water and rinse with the smallest volume of water practicable.</li> </ol>
<b>Procedure for Disposal:</b>	<p>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.</p> <p>It is suggested:</p> <ul style="list-style-type: none"> <li>• For quantities up to 50 litres of product bury in a secure approved landfill site.</li> <li>• 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.</li> </ul>

## Section 7: HANDLING AND STORAGE

<b>Precautions for safe handling:</b>	<b>Handling:</b> <i>Precautions for safe handling; refer to Haznote.</i> No special technical protective measures required. No special handling advice required.
<b>Regulatory Requirements:</b>	Not applicable
<b>Handling practices:</b>	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.
<b>Approved Handlers:</b>	Approved Handlers required when used by a commercial contractor or applied in a wide dispersive manner.
<b>Conditions for Safe Storage:</b>	<b>Storage:</b> 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.  Signage and secondary containment will be required at sites holding 100 litres or more of any product classified as 9.1A (eg DEMAND).
<b>Packaging:</b>	Store in original container, tightly closed, away from foodstuffs.

## Section 8: EXPOSURE CONTROL / PERSONAL PROTECTION

ALWAYS READ AND FOLLOW THE LABEL INSTRUCTIONS AND WARNINGS

<b>Workplace Exposure Guidelines:</b>	
<b>Workplace Exposure Standards:</b>	Propane-1,2-diol (Propylene glycol) Total (vapour and particulates) 8 hr TWA      150 ppm 470 mg/m <sup>3</sup>
	Lambda-cyhalothrin Syngenta OEL 8 hr TWA      0.04 mg/m <sup>3</sup> Sk : can be absorbed through skin.
	Mixed hydrocarbon solvents OEL 8 hr TWA      100 mg/m <sup>3</sup> RCP (Reciprocal calculation procedure)
<b>Application in the workplace:</b>	Not required
<b>Exposure standards outside the workplace:</b>	Not required
<b>Engineering controls:</b>	No special requirements. Product is used indoors. 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.
	Follow precaution statements on the label and the use and safety directions in Code of Practice for the Management of Agrichemical NZS8409.
<b>Personal Protection:</b>	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.
<b>General Hygiene:</b>	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

<b>Appearance:</b>	Off white suspension of microcapsules
<b>Odour:</b>	Mildly phenolic
<b>Flashpoint:</b>	Does not flash
<b>Explosive properties:</b>	not explosive
<b>Density:</b>	1.02-1.04 g/ml at 20°C
<b>Water solubility:</b>	Miscible in/with water
<b>pH value</b>	5-6
<b>Viscosity:</b>	10-20 mPas (method: Casson)
<b>Oxidising properties:</b>	not oxidising

## Section 10: STABILITY AND REACTIVITY

<b>Stability of the Substance:</b>	Stable under standard conditions.
<b>Conditions to Avoid:</b>	None known
<b>Material to Avoid:</b>	none known
<b>Hazardous decomposition products</b>	Combustion or thermal decomposition will evolve toxic and irritant vapours.
<b>Hazardous polymerisation</b>	Does not occur.
<b>Specific Data</b>	not applicable

## Section 11: TOXICOLOGICAL INFORMATION

### HSNO Classifications:

- 6.1D = May be harmful if swallowed, inhaled or absorbed through the skin.
- 6.3A = May cause skin irritation
- 6.4A = May cause eye irritation
- 6.5B = May cause sensitisation from prolonged skin contact.
- 6.9B = May cause neurotoxic damage from repeated oral exposure at high doses.

### Acute Effects (Undiluted product)

Swallowed:	LD <sub>50</sub>	>5000 mg/kg (rat)
Dermal absorption:	LD <sub>50</sub>	>4000 mg/kg (rat)
Inhaled:	LC <sub>50</sub> (4 h)	>4.62 mg/l (rat)
<b>Irritation</b>		
Eye:	<b>IRRITANT</b> (rabbit/ HSNO Classification)	
Skin:	<b>IRRITANT</b> (HSNO Classification)	
<b>Sensitization</b>	<b>SENSITISER</b> (guinea pigs)	

### 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.
- 9.3C = Harmful to terrestrial vertebrates.
- 9.4A = Very toxic to terrestrial invertebrates.

<b>Environmental Risk and Safety Phrases:</b>	Avoid contamination of any water supply with chemical or empty container
---	--

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**

<b>Toxicity to Birds:</b>	LD <sub>50</sub> = >3950 mg/kg (mallard ducks)
<b>Acute toxicity to fish:</b>	LC <sub>50</sub> (96 h) = 0.02 mg/L (Rainbow trout) (based on components of the formulation) LC <sub>50</sub> = 0.36ug/l (trout); 96 h lambda-cyhalothrin LC <sub>50</sub> = 0.21ug/l (bluegill sunfish); 96 h lambda-cyhalothrin
<b>Growth inhibition, Algae:</b>	ErC <sub>50</sub> (96 h)= >1000 µg/L (Selenastrum capricornutum (green algae))
<b>Toxicity to aquatic Invertebrates:</b>	LC <sub>50</sub> / EC <sub>50</sub> = 0.36ug/l (Daphnia magna (water flea))
<b>Toxicity to soil dwelling organisms:</b>	LC <sub>50</sub> = >1000 mg/kg soil ( <i>Eisenia foetida</i> )
<b>Toxicity to Bees:</b>	LD <sub>50</sub> (48 h, oral) = 38 ng/bee LD <sub>50</sub> (48 h, contact) = 909 ng/bee

#### **Environmental Fate**

The information presented here is for the active ingredient, lambda-cyhalothrin. The substance is essentially insoluble in water. The substance has low mobility in soil. There is evidence of rapid hydrolysis in soil. Rapidly degraded in soil; DT<sub>50</sub> for microbial degradation 23-82 days, for field soil 6-40 days. Strongly adsorbed to soil and sediment organic matter, K<sub>oc</sub> 330,000. There is evidence of photodegradation in water. There is evidence of rapid biodegradation in soil and water. Negligible potential for leaching of lambda-cyhalothrin and its degradation products through soil. Rapid dissipation from water in aquatic systems. DT<sub>50</sub> for dissipation from surface waters in lab. water-sediment systems 5-11 hours; in a microcosm DT<sub>50</sub> for degradation in lab. water-sediment systems 7-15 days; in a microcosm DT<sub>50</sub> <3 hours, DT<sub>90</sub> < 3 days. K<sub>ow</sub> logP = 7 (20°C).

### **Section 13: DISPOSAL CONSIDERATIONS**

<b>Product Disposal:</b>	Dispose of this product only by using according to the label, or at an approved landfill or other approved facility.
<b>Container Disposal:</b>	Ensure the container is empty. Triple rinse the container and add the residue to the spray tank. If recycling, replace cap and return clean containers to recycler or designated collection point. Alternatively, if allowed under local Territorial Authority District Plans, burn if circumstances, especially wind direction permit, otherwise crush and bury in an approved local authority facility. DO NOT reuse this container for any other purpose.

## Section 14: TRANSPORT INFORMATION

<b>Rail / Road (RID/ADR)</b>	UN-No:	3082
	Class:	9
	Packaging Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Lambda-cyhalothrin 2.5%)
<b>Sea (IMDG-Code)</b>	UN-No:	3082
	Class:	9
	Packaging Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Lambda-cyhalothrin 2.5%)
	MARINE POLLUTANT:	yes
<b>Air (ICAO/IATA)</b>	UN-No:	3082
	Class:	9
	Packaging Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Lambda-cyhalothrin 2.5%)

## Section 15: REGULATORY INFORMATION

<b>HSNO Approval Number:</b>	HSR000337
<b>HSNO Controls (inc. Tracking and Record Keeping):</b>	See <a href="http://www.ermanz.govt.nz/search/registers.html">http://www.ermanz.govt.nz/search/registers.html</a> for controls.
<b>ACVM Registration:</b>	P 5657
<b>ACVM Controls:</b>	See <a href="http://www.nzfsa.govt.nz/acvm">www.nzfsa.govt.nz/acvm</a> 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.

®Registered Trade Mark of a Syngenta Group Company.