

## SAFETY DATA SHEET

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

<b>Product Name:</b>	<b>TWINAX</b>
<b>Design Code:</b>	A12303C
<b>Recommended Use:</b>	For the selective control of Annual Ryegrass, Lesser Canary Grass and Gnawed Canadry Grass and Wild Oats in Barley and Wheat.
<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>6 March, 2013</b>

### Section 2: HAZARDS IDENTIFICATION

<b>Hazard classification:</b>	3.D, 6.1E, 6.3B, 6.4A, 6.9B, 9.1B, 9.2A
<b>Priority Identifier:</b>	WARNING KEEP OUT OF REACH OF CHILDREN
<b>Secondary Identifiers:</b>	3.1D = Combustible liquid 6.1E = May be harmful if swallowed or inhaled. 6.3B = May cause skin irritation 6.4A = May cause eye irritation 6.9B = May cause kidney damage from repeated oral exposure at high doses. 9.1B = Toxic to aquatic organisms. 9.2A = Very toxic to the soil environment.

### Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

<i>Pure Substance:</i>	
<b>Chemical Identity of pure substance:</b>	Propanoic acid, 2,2-dimethyl-8-(2,6-diethyl-4-methylphenyl)-1,2,4,5-tetrahydro-7-oxo-7H-pyrazolo[1,2-d][1,4,5]oxadiazepin-9-yl ester
<b>Common Name:</b>	Pinoxaden
<b>Synonyms:</b>	NOA 407855
<b>CAS number:</b>	243973-20-8

<i>Mixture:</i>		
<b>Chemical Identity of ingredients:</b>		
<b>Ingredient</b>	<b>CAS no.</b>	<b>Content (% w/W)</b>
<b>Pinoxaden (technical grade) to give Pinoxaden</b>	243973-20-8	10
Cloquintocet-mexyl	99607-70-2	2.5
Tetrahydrofurfuryl alcohol	97-99-4	20-40
Aromatic hydrocarbon mixture	64742-94-5	40-50
other ingredients determined not to be hazardous		<10

*NOTE : only hazardous components need to be listed.*

## 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>	No case of human poisoning due to this product is on record. The poisoning symptoms observed for laboratory mammals were non-specific.
<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. 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.
<b>Notes for Medical Personnel:</b>	No specific antidote is available. If poisoning is suspected apply symptomatic therapy.

## Section 5: FIRE-FIGHTING MEASURES

<b>Type of Hazard:</b>	This product is combustible.
<b>Fire Hazard Properties:</b>	As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion.  Exposure to decomposition products may be a hazard to health.
<b>Regulatory Requirements:</b>	3.1D = Combustible liquid Stores with quantities of 500 litres or more require 2 fire extinguishers. Hazardous Substances (Emergency Management) Regulations 2001. Code EM10 (Regs 21-24), Code EM11 (Regs 25-34), Code EM12 (Regs 35-41) and Code EM13 (Reg 42)
<b>Extinguishing Media and methods:</b>	<i>Extinguishing media – small fires</i> Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. <i>Extinguishing media – large fires</i> Use alcohol resistant foam or water spray
<b>Hazchem Code:</b>	2X
<b>Recommended Protective Clothing:</b>	When fighting a major fire wear an air-supplied respirator. Wear protective equipment.

## 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>	Washings must be prevented from entering surface water drains or waterways.
<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>	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"><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>	3.1D = Combustible liquid Stores with quantities of 500 litres or more require 2 fire extinguishers. Hazardous Substances (Emergency Management) Regulations 2001. Code EM10 (Regs 21-24), Code EM11 (Regs 25-34), Code EM12 (Regs 35-41) and Code EM13 (Reg 42)
<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>	Not required.

<b>Storage:</b>	
<b>Conditions for Safe 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. Avoid temperatures below minus10°C or above 35°C.
<b>Store Site Requirements:</b>	Signage will be required at sites holding 100 litres or more and secondary containment at sites with 1000 litres or more of any product classified as 9.1B, 9.2A (eg TWINAX).
<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>	<b>Components</b>	<b>Exposure Limits</b>	<b>Value type</b>	<b>Source</b>
	Cloquintocet-mexyl	10 mg/m <sup>3</sup>	8 h TWA	Syngenta
	Petroleum solvent	20 ppm 100 mg/m <sup>3</sup>	8 h TWA	Supplier
<b>Application in the workplace:</b>	Not required			
<b>Exposure standards outside the workplace:</b>	Not required			
<b>Engineering controls:</b>	<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 vapours 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>			
<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>	Yellow to orange clear liquid
<b>Odour:</b>	aromatic
<b>pH value</b>	3 - 7 (1% in dionised water)
<b>Flashpoint:</b>	79°C
<b>Autoignition temperature:</b>	305°C
<b>Oxidising properties:</b>	not oxidising
<b>Explosive properties:</b>	not explosive
<b>Density:</b>	1.01-1.05 g/ml at 20°C
<b>Miscibility:</b>	miscible
<b>Viscosity, dynamic:</b>	9.34 mPa.s at 20°C 4.41 mPa.s at 40°C
<b>Surface tension:</b>	36.6 mN/m at 25°C

## Section 10: STABILITY AND REACTIVITY

<b>Stability of the Substance:</b>	Stable under normal 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 vapors.
<b>Hazardous polymerisation</b>	Does not occur
<b>Specific Data</b>	not applicable

## Section 11: TOXICOLOGICAL INFORMATION

### HSNO Classifications:

- 6.1E = May be harmful if swallowed or inhaled.
- 6.3B = May cause skin irritation
- 6.4A = May cause eye irritation
- 6.9B = May cause kidney damage from repeated oral exposure at high doses.

### *Acute Effects (Undiluted product)*

Swallowed:	LD <sub>50</sub>	>3129 mg/kg (rat)
Dermal absorption:	LD <sub>50</sub>	>2000 mg/kg (rat)
Inhaled:	LC <sub>50</sub> (4 h)	>5.0 mg/m <sup>3</sup> (rat)
<b><u>Irritation</u></b>		
Eye:	IRRITANT (rabbit)	
Skin:	IRRITANT (rabbit)	
<b><u>Sensitization</u></b>		
NOT A SENSITISER (guinea pigs)		

### *Chronic / Long Term Effects (Active Ingredient)*

**Pinoxaden technical** has been extensively tested on laboratory mammals and in test-tube systems. No evidence of carcinogenic, mutagenic, teratogenic or reproductive effects was obtained. The kidney was identified as the target organ.

The **aromatic hydrocarbon mixture** may cause central nervous system depression and narcosis.

## Section 12: ENVIRONMENTAL INFORMATION

### HSNO Classifications:

9.1B = Toxic to aquatic organisms.  
9.2A = Harmful to the soil environment.

### Environmental Risk and Safety Phrases:

Avoid contamination of any water supply with chemical or empty container

### Ecotoxicity Effects

<b>Acute toxicity to fish:</b>	LC <sub>50</sub> (96 h) = 8.8 mg/L (Rainbow trout) (Formulated material)
<b>Growth inhibition, Algae:</b>	EC <sub>50</sub> = 1.2 mg/L (Green algae) (Formulated material) EC <sub>50</sub> = 7.4 mg/L (Duckweed) (Formulated material)
<b>Toxicity to aquatic Invertebrates:</b>	LC <sub>50</sub> (48h) = 8.5 mg/L (Daphnia magna) (Formulated material)
<b>Acute Oral Toxicity to Birds:</b>	LD <sub>50</sub> = >2250 mg/kg bw (Northern Bobwhite) (Active Ingredient)
<b>Toxicity to soil dwelling organisms:</b>	LC <sub>50</sub> (14 days) = 84.4 mg/kg (earthworms) (Formulated material)
<b>Toxicity to Bees:</b>	LD <sub>50</sub> (oral) = 189 µg/bee (Formulated material)

### Environmental Fate

<b>Bioaccumulation:</b>	Cloquintocet-mexyl does not bioaccumulate. Pinoxaden has low potential for bioaccumulation.
<b>Stability in Water:</b>	Cloquintocet-mexyl is not persistent in water. Pinoxaden is not persistent in water.
<b>Stability in Soil:</b>	Cloquintocet-mexyl is not persistent in soil. Pinoxaden is not persistent in soil.
<b>Mobility:</b>	Cloquintocet-mexy is immobile in soil. Pinoxaden has medium mobility in soil.

## 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 empty container and add rinsate to the spray tank. Recycle empty container through Agrecovery (0800 247 326, <a href="http://www.agrecovery.co.nz">www.agrecovery.co.nz</a> ). Otherwise crush and bury in a suitable landfill. 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. (solvent naphtha)
<b>Sea (IMDG-Code)</b>	UN-No:	3082
	Class:	9
	Packaging Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (solvent naphtha)
<b>Air (ICAO/IATA)</b>	MARINE POLLUTANT:	yes
	UN-No:	3082
	Class:	9
	Packaging Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (solvent naphtha)

## Section 15: REGULATORY INFORMATION

<b>HSNO Approval Number:</b>	HSR002417
<b>HSNO Controls (inc. Tracking and Record Keeping):</b>	See <a href="http://www.epa.govt.nz/search-databases/Pages/controls-search.aspx">http://www.epa.govt.nz/search-databases/Pages/controls-search.aspx</a> for controls.
<b>ACVM Registration:</b>	P 7381
<b>ACVM Controls:</b>	See <a href="http://www.foodsafety.govt.nz/industry/acvm">www.foodsafety.govt.nz/industry/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.

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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.