



Material Safety Data Sheet

CS: 1.4.93

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Infosafe No™ 3NUJ2	Issue Date : March 2010	ISSUED by NUFARMNZ
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Product Name **ADMIRAL®**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name	ADMIRAL®
Product Code	02017
Product Type	Insect Growth Regulator
Company Name	Nufarm NZ
Address	6 Manu Street, Otahuhu Auckland 2024 New Zealand
Emergency Tel.	0800 651 911
Telephone/Fax Number	Tel: 0-9-270 4157 Fax: 0-9-270 4159
Email	www.nufarm.co.nz
Recommended Use	A selective insect growth regulator for the control of whitefly on greenhouse tomatoes and greenhouse cucumbers.
Other Information	This SDS describes, to the best of our knowledge, the properties of the concentrated product. The physical properties and some of the assessments do not apply to the properties of the product once it has been diluted for application. Acute health effects of the diluted product are likely to be much less severe.

2. HAZARDS IDENTIFICATION

Hazard Classification	Classified as Dangerous Goods according to the LTSA New Zealand.
Risk Phrase(s)	
Other Information	3.1D flammable liquid, 6.1E acute toxicant, 6.3A skin irritant, 9.1A aquatic toxicant, TOXICITY Harmful - may be harmful if swallowed, inhaled or absorbed through the skin. May cause skin irritation. FLAMMABLE Warning - combustible liquid. ECOTOXIC Very toxic to aquatic organisms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization	Liquid															
Ingredients	<table><thead><tr><th><u>Name</u></th><th><u>CAS</u></th><th><u>Proportion</u></th></tr></thead><tbody><tr><td>Pyriproxyfen</td><td>95737-68-1</td><td>100 g/L</td></tr><tr><td>Emery</td><td>112-62-9</td><td><30%</td></tr><tr><td>Ingredients determined to be non-hazardous</td><td>-</td><td>To volume</td></tr><tr><td>Aromatic hydrocarbon solvent</td><td>64742-94-5</td><td>300-600g/L</td></tr></tbody></table>	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>	Pyriproxyfen	95737-68-1	100 g/L	Emery	112-62-9	<30%	Ingredients determined to be non-hazardous	-	To volume	Aromatic hydrocarbon solvent	64742-94-5	300-600g/L
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Emery	112-62-9	<30%														
Ingredients determined to be non-hazardous	-	To volume														
Aromatic hydrocarbon solvent	64742-94-5	300-600g/L														

4. FIRST AID MEASURES

First Aid Measures	For advice contact the National Poisons Centre 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.
Inhalation	Remove patient to fresh air. Lay down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance immediately.
Ingestion	Never give anything by mouth to an unconscious person. If swallowed do NOT induce vomiting. For advice, contact the National Poisons Centre (0800 764 766). Seek medical assistance immediately.
Skin	Immediately flush body and clothes with large amounts of water. Remove contaminated clothing and footwear. Wash affected areas with soap and water.



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Eye	If a large area is affected seek medical assistance. Flush eyes with plenty of water for 15 minutes holding eyelids open if necessary. Seek medical assistance.
First Aid Facilities	Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.
Advice to Doctor	Treat symptomatically. If ingested, probable mucosal damage may contraindicate the use of gastric lavage. This product contains a light hydrocarbon liquid; ingestion or subsequent vomiting can result in aspiration of this product, which can cause pneumonitis.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Water fog, foam, carbon dioxide or dry chemical.
Hazards from Combustion Products	On burning may emit fumes which are toxic and/or irritating. Normal combustion forms carbon dioxide, water vapour and may produce oxides of nitrogen. Incomplete combustion can produce carbon monoxide.
Special Protective Equipment for fire fighters	Full protective clothing and self-contained breathing apparatus.
Specific Methods	Keep up wind. Do not allow washings to reach sewage or effluent systems. Keep containers cool with water spray.
Hazchem Code	2X
Unsuitable Extinguishing Media	Do not use water in a jet.
Other Information	Location Certificate: Not applicable Hazardous Atmosphere Zone: Not applicable Number of Fire Extinguishers: 2 for 500L or more

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal	Wear protective clothing. Clear area of unprotected personnel. Eliminate all ignition sources and naked lights. Use non-sparking utensils. Contain spill and absorb with sand, soil or absorbent granules. If spill does enter waterways contact the local authority. Collect in an appropriate sealable container for disposal in an approved landfill. Prevent material from coming into contact with Class 1, 2, 3.2, 4 or 5 substances. Wash area with water and detergent and absorb with inert material. Dispose of waste safely in an approved landfill.
Personal Protection	For appropriate personal protective equipment (PPE), refer Section 8.
Environmental Precautions	Prevent from entering drains, waterways or sewers.

7. HANDLING AND STORAGE

Precautions for Safe Handling	Avoid skin and eye contact and inhalation of spray mist. APPROVED HANDLER: Not applicable This product must not be applied onto or into water. This product shall be applied in greenhouses only. TRACKING: Is not required RECORD KEEPING: Records of use as described in NZS 8409 Management of Agrichemicals must be kept if 3L or more is applied within 24 hours.
Conditions for Safe Storage	Keep out of reach of children. Do not store near heat or flame. Store in original container tightly closed, in a well-ventilated area, as cool as possible, away from sources of ignition and foodstuffs. Do not store for prolonged periods in direct sunlight. Store in accordance with NZS 8409 Management of Agrichemicals. Do not store with HSNO Class 1, 2, 3.2, 4 or 5 substances. Stores containing 100L litres of Admiral require secondary containment and are subject to signage, and more than 100L litres requires emergency response plans. Stores containing 500L litres must have at least 2 fire extinguishers.
Other Information	Always read the label and any attached leaflet before use. Aggregate Storage Volume Thresholds: When stored with substances of the same hazard classification the aggregate



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quantity must be considered. For full details refer to the current NZS8409 Management of Agrichemicals and the HSNO Regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards	No exposure limits (WES, TEL or EEL's) have been specifically assigned for this product. WES TWA for Emery = 10mg/m ³
Engineering Controls	Handle in well ventilated areas, generally natural ventilation is adequate.
Personal Protective Equipment	When opening the container, preparing spray and using the prepared spray wear safety goggles, waterproof gloves, washable hat, cotton overalls buttoned to the neck and wrist, boots, and a NIOSH approved half face mask with organic vapour cartridge + dust/mist prefilter.
Hygiene Measures	Do not eat, drink or smoke while using. Remove protective clothing and wash hands and face thoroughly before meals and after work. Wash protective clothing daily after work. Wash splashes of concentrate from skin immediately.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Liquid
Appearance	Pale yellow to clear liquid
Odour	Mild aromatic odour
Solubility in Water	Forms an emulsion in water.
Specific Gravity	0.92g/mL @ 20°C
pH Value	5.7 (10%v/v)
Viscosity	18.5 cps
Flash Point	67°C (setaflash cc)
Other Information	(EC) Emulsifiable concentrate

10. STABILITY AND REACTIVITY

Chemical Stability	When stored appropriately this product should show no significant degradation for 2 years from the date of manufacture.
Conditions to Avoid	Avoid direct sunlight.
Hazardous Polymerization	Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information	No specific toxicological data is available for this product. Data below is for constituents.
Ingestion	Due to the low viscosity of the product, it can directly enter the lungs if swallowed (called aspiration). This can occur during the act of swallowing or when vomiting. Once in the lungs, the substance is very difficult to remove and can cause severe injury to the lungs.
Skin	May cause skin irritation.
Reproductive Toxicity	Pyriproxyfen technical did not produce reproductive toxicity in animal studies. No developmental toxicity was produced in animals exposed, even at doses that were toxic to pregnant animal. This product is not expected to be a reproductive hazard when used according to label directions.
Acute Toxicity - Oral	LD50 (rat, female) is 3,773mg/kg
Acute Toxicity - Dermal	LD50 (rabbit) is >2,000mg/kg
Acute Toxicity - Inhalation	LC50 (rat) (4hr) is >3.1mg/L - no deaths
Eye Irritation	Slight irritant. This product produced mild and transient eye irritation in rabbits, which cleared within 72 hours after treatment.
Skin Irritation	Moderate irritant (rabbit)



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Skin Sensitisation	Non-sensitising. This product did not produce a positive skin sensitisation reaction in a Buehler Skin Sensitisation Test.
Subchronic/Chronic Toxicity	Studies with pyriproxyfen technical indicated that repeated high exposures produced changes in the liver, kidney and red blood cells but did not produce cancer in test animals. This product contains a solvent mixture. Reports have associated repeated and prolonged occupational overexposures to solvents with permanent brain and nervous system damage. Symptoms reported include fatigue, concentration difficulties, anxiety, depression, rapid mood swings and short term memory loss. Since many other diseases cause some or all of these symptoms, a doctor should be consulted in any appear. Overall, this product is not expected to be a chronic hazard when used according to the label directions.

12. ECOLOGICAL INFORMATION

Persistence / Degradability	Soil persistent.
Bioaccumulative Potential	Bioaccumulative. Log Kow = 5.37
Basis for Assessment	Ecotoxicological data have not been determined specifically for this product. Data below is for the active ingredient unless otherwise stated.
Acute Toxicity - Fish	LC50 (96hr) for carp is 0.45 mg/l for pyriproxyfen
Acute Toxicity - Daphnia	LC50 (48hr) for daphnia is 0.08 mg/l for pyriproxyfen.
Acute Toxicity - Algae	EC50 (72hr) for green algae (Selenastrum spp) 0.056 mg/l for pyriproxyfen.
Acute Toxicity - Other Organisms	LD50 for mallard duck and bobwhite quail is >2,000 mg/kg for pyriproxyfen

13. DISPOSAL CONSIDERATIONS

Product Disposal	Dispose of product only by using according to the label, or at an approved landfill.
Container Disposal	Do not Burn. Triple rinse empty container and add rinsate to the spray tank. Recycle empty container. Otherwise crush and bury in a suitable landfill.

14. TRANSPORT INFORMATION

Transport Information	It is good practice to separate this product from food, food related materials, animal feedstuffs, seed or fertilisers during transport.
U.N. Number	3082
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. - (pyriproxyfen, 10%)
DG Class	9
Hazchem Code	2X
Packaging Method	-
Packing Group	III
EPG Number	-
IERG Number	47
IMO Marine Pollutant	Yes. Environmentally Hazardous Substance mark required.
IMDG EMS	F-A, S-F
Other Information	Do not carry more than 1L of Admiral® on a passenger service vehicle. Segregation: Check the latest Land Transport Rule Dangerous Goods Rule 45001 for additional information. Sea transport may require additional segregation. Refer NZS5433 sea segregation for details.

15. REGULATORY INFORMATION



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National and or International Regulatory Information	Registered pursuant to the ACVM Act 1997, No. P7660 See www.nzfsa.govt.nz/acvm/ for registration conditions Approved pursuant to the HSNO Act 1996, Approval Code HSR100004 See www.ermanz.govt.nz for approval controls
Packaging & Labelling	WARNING - combustible liquid HARMFUL * ECOTOXIC - keep out of reach of children
Hazard Rating Systems	NFPA/HMIS: 2-2-1

16. OTHER INFORMATION

Contact Person/Point	IN AN EMERGENCY, DIAL 111 - FIRE OR POLICE 24Hr Tollfree Emergency No: 0800 651 911 24Hr Emergency No: National Poisons Centre Phone: 0800 764 766
Other Information	Supersedes SDS issued NA. First Issue ...End Of MSDS...

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