



Material Safety Data Sheet

Page: 1 of 5

Infosafe No. 3NUA4 Issue Date : April 2007 ISSUED by NUFARMNZ

Product Name : **RAMROD® Flowable Herbicide**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name RAMROD® Flowable Herbicide
Product Code 00566
Product Type Herbicide
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 Selective herbicide for pre-emergence weed control in maize, sweetcorn, onions, sorghum, soyabeans and transplanted cabbages and cauliflowers.
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.
Other Information 6.1D acute toxicant, 6.3A skin irritant, 6.5B sensitiser, 6.6B mutagen, 6.7B possible carcinogen, 6.9B target organ toxicant, 9.1A aquatic toxicant, 9.2A soil toxicant, 9.3B terrestrial vertebrate toxicant,
TOXICITY
Harmful - may be harmful if swallowed, inhaled or absorbed through the skin. May cause skin irritation or sensitisation from prolonged skin contact. Suspected of causing heritable mutations in human cells. Limited evidence of a carcinogenic effect in animal studies. May cause liver and kidney damage from repeated oral exposure at high doses.
ECOTOXIC
Very toxic to aquatic organisms.
Selective herbicide - very toxic to some plant species.
Toxic to terrestrial vertebrates.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization Liquid
Ingredients

<u>Name</u>	<u>CAS</u>	<u>Proportion</u>
Propachlor	1918-19-7	480g/L
Water	7732-18-5	Balance
Other ingredients		125g/L
Ethylene glycol	107-21-1	91g/L

4. FIRST AID MEASURES

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. If a large area is affected seek medical assistance.
Eye Flush eyes with plenty of water for 15 minutes holding eyelids open if necessary. Seek medical assistance.



Material Safety Data Sheet

Page: 2 of 5

Infosafe No. 3NUA4 Issue Date : April 2007 ISSUED by NUFARMNZ

Product Name : **RAMROD® Flowable Herbicide**

First Aid Facilities Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.
Advice to Doctor Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media Water fog, foam, carbon dioxide or dry chemical.
Hazards from Combustion Products If involved in a fire, the dehydrated components may emit oxides of carbon, oxides of nitrogen and hydrogen chloride.
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.
Specific Hazards Considered low risk due to water content, however upon evaporation of water the product is combustible.
Hazchem Code 2Z
Other Information Location Certificate: Not applicable
Hazardous Atmosphere Zone: Not applicable
Number of Fire Extinguishers: Not applicable

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal Wear protective clothing. Clear area of unprotected personnel. Contain liquid 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.
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: This product must be under the control of an approved handler when applied in a wide dispersive manner; or used by a commercial contractor.
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.
Do not allow drift to occur outside the target area.
Conditions for Safe Storage Store in original container tightly closed and in a locked, dry, cool area away from foodstuffs, fertilisers and seeds. Storage must be in accordance with NZS 8409 Management of Agrichemicals.
Stores containing 100L of Ramrod require secondary containment and are subject to signage, and more than 100L require emergency response plans. Keep out of reach of children.
Recommended Materials Compatible for storage in stainless steel, galvanised steel and plastic.
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 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 Ethylene glycol vapour and mist = Ceiling 50ppm (127mg/m³)
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 chemically resistant gloves, waterproof hat, safety goggles, cotton overalls buttoned to the neck and wrist, and boots.



Material Safety Data Sheet

Page: 3 of 5

Infosafe No. 3NUA4 Issue Date : April 2007 ISSUED by NUFARMNZ

Product Name : **RAMROD® Flowable Herbicide**

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form Liquid
Appearance White liquid suspension
Odour Odourless
Melting Point Not determined. (Propachlor = 77°C)
Solubility in Water Disperses in water
Specific Gravity 1.11
pH Value ~6.4 @ 23°C
Vapour Pressure 10 mPA (25°C, propachlor)
Viscosity 300-900 cps
Octanol/Water Partition Coefficient Kow Log P is 1.4 - 2.3
Flash Point Does not flash
Flammability Non combustible material.
Other Information (SC) Suspension 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.
Incompatible Materials Not compatible with iron and mild steel. Avoid contact of the concentrate with strong acids and bases.
Hazardous Polymerization Hazardous polymerisation will not occur.
Other Information Partial crystallization may occur on prolonged storage below the minimum storage temperature. If frozen, place in warm room and shake frequently to put back into solution.

11. TOXICOLOGICAL INFORMATION

Inhalation Inhalation of spray mist may be irritating to respiratory tract.
Ingestion May cause irritation to mouth, throat and stomach.
Skin Will irritate the skin. May cause pain, redness and a burning sensation.
Eye May irritate the eyes. Possible symptoms include redness, swelling, tearing and pain.
Mutagenicity There is evidence that propachlor has genotoxic activity and analogue data is supportive of a mutagenicity concern. [USEPA REDS]
Carcinogenicity USEPA REDS, 1998 data indicates that propachlor has carcinogenic potential.
Acute Toxicity - Oral LD50 (rat) 1911 mg/kg for a similar formulation
Acute Toxicity - Dermal LD50 (rat) >5000 mg/kg for a similar formulation
Acute Toxicity - Inhalation LC50 concentration not reached.
Eye Irritation Not an eye irritant.
Skin Irritation The product is a skin irritant.
Respiratory Irritation The product may be a mild respiratory irritant.
Skin Sensitisation May produce skin sensitisation in susceptible individuals.
Other Information The Australian Acceptable Daily Intake (ADI) for propachlor for a human is 0.02 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 2 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive



Material Safety Data Sheet

Page: 4 of 5

Infosafe No. 3NUA4 Issue Date : April 2007 ISSUED by NUFARMNZ

Product Name : **RAMROD® Flowable Herbicide**

species. (Ref: Comm. Dept. of Health and Ageing, 'ADI List', TGA, December 2004).

12. ECOLOGICAL INFORMATION

Persistence / Degradability	Half life in soil is typically 4 days. Not readily biodegradable.
Environmental Fate	Dissipation: Soil, 25°C, half life 1.8 - 6.2 days, Koc: 73-138 for propachlor Water, 20°C half life 4.7 - 5.6 days for propachlor
Bioaccumulative Potential	Bluegill sunfish - whole fish BCF = 34 for propachlor Rapid self-purification after end of exposure.
Known Harmful Effects on the Environment	Harmful to fish and other aquatic organisms. Moderate toxicity to birdlife.
Environ. Protection	Spray drift can cause damage, read the label for more information.
Acute Toxicity - Fish	The following is data for a similar product. LC50 (96 hr) for rainbow trout is 0.42 mg/l. LC50 (96 hr) for bluegill sunfish is 1.6 mg/l.
Acute Toxicity - Daphnia	EC50 (48hr) is 13 mg/l.
Acute Toxicity - Algae	ErC50 (growth rate) (72h) static for Selenastrum capricornutum = 23µg/L for propachlor Plant recovers when toxicant is removed.
Acute Toxicity - Bacteria	Nitrogen and carbon transformation test: 40L/ha, 28 days: Less than 25% effect on nitrogen or carbon transformation processes in soil.
Acute Toxicity - Other Organisms	LC50 (contact) (48h) bee >25µg/bee, (oral) (48h) bee >1µg/kg diet for Ramrod LD50 single dose (bobwhite quail) 91mg/kg for propachlor LC50 (14d) earthworm 218mg/kg dry soil for propachlor

13. DISPOSAL CONSIDERATIONS

Product Disposal	Dispose of product only by using according to the label, or at an approved landfill.
Container Disposal	Triple rinse empty container and add rinsate to spray tank. Burn in an appropriate incinerator if circumstances such as wind direction permit. 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. - (propachlor, 48%)
DG Class	9
Hazchem Code	2Z
Packaging Method	-
Packing Group	III
EPG Number	-
IERG Number	47
IMO Marine Pollutant	Yes. Marine Pollutant mark required.
Other Information	Do not carry this product 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



Material Safety Data Sheet

Page: 5 of 5

Infosafe No.	3NUA4	Issue Date : April 2007	ISSUED by NUFARMNZ
--------------	-------	-------------------------	--------------------

Product Name : **RAMROD® Flowable Herbicide**

National and or International Regulatory Information	Registered pursuant to the ACVM Act 1997, No. P3685 See www.nzfsa.govt.nz/acvm/ for registration conditions
Packaging & Labelling	Approved pursuant to the HSNO Act 1996, Approval Code HSR000382 See www.ermanz.govt.nz for approval controls
Hazard Rating Systems	HARMFUL * ECOTOXIC - keep out of reach of children NFPA/HMIS: 3-1-1

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

Revisions Highlighted New format and minor editorial changes.

Other Information Supersedes SDS issued June 2006
...End Of MSDS...