Material Safety Data Sheet

Infosafe No. 3NU15 Issue Date : December 2003 ISSUED by NUFARM

Product Name : **NUGRASS Selective Herbicide**

Classified as hazardous according to criteria of NOHSC

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product Name NUGRASS Selective Herbicide

Product Code 0639

Product Use For post-emergent control of annual rye grass, common barb grass and wild oats in wheat, linseed, peas and other crops as listed in the Directions for Use Table.

Company Name NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)

Address 103-105 Pipe Road Laverton North
Victoria 3026 Australia

Emergency Tel. 24hr 1800 033 498

Telephone/Telex Number Tel: (03) 9282-1000 Fax: (03) 9282-1001

Product Type Group A Herbicide

Other Information This MSDS 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. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization Liquid

Ingredients

Name	CAS	Proportion
Liquid Hydrocarbon	64742-94-5	534 g/L
Diclofop-methyl	51338-27-3	375 g/L
Proprietary mix of surfactants (non-hazardous)		10-20 %

3. HAZARDS IDENTIFICATION

Harmful if swallowed.
Harmful: may cause lung damage if swallowed.

Other Information Poisons Schedule 6

4. FIRST AID MEASURES

Inhalation Remove affected person to fresh air until recovered.
If symptoms develop or persist, seek medical advice.

Ingestion If swallowed do NOT induce vomiting; seek medical advice immediately and show this container or label or contact the Poisons Information Centre on 13 11 26 (Aust). Make every effort to prevent vomit from entering the lungs by careful placement of the patient.
The above first aid instructions are mandated by the Commonwealth Department of Health and Aged Care via the National Drugs and Poisons Schedule. These instructions are suitable for ingestion of spray solution and small amounts of concentrate; however, if SUBSTANTIAL AMOUNTS of the concentrate have been swallowed (more than about 20ml for an adult person) AND if medical assistance is more than 30 minutes away, the induction of vomiting should be CONSIDERED, preferably based on MEDICAL ADVICE if a physician can be contacted by phone. All care must be taken to prevent vomit from being inhaled. Do not give anything by mouth to a semi-conscious or unconscious person.

Skin Remove contaminated clothing and launder before re-use.
Wash affected areas thoroughly with soap and water.

Eye If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes.
Seek medical advice immediately.

First Aid Facilities If poisoning occurs, contact a doctor or Poisons Information Centre on 13 11 26 (Australia).

Advice to Doctor	No specific antidote. Treat symptomatically. Gastric lavage with medicinal charcoal in water is recommended. Induce diuresis and monitor electolyte and fluid balance. Monitor kidney and liver function, red blood cell count, blood lipids and cholesterol for hypolipidaemia and lowered cholesterol (low density lipoproteins). If vomiting occurs, solvent present may cause pulmonary pneumonitis.

5. FIRE FIGHTING MEASURES

Extinguishing Media	Water fog, foam, carbon dioxide or dry chemical.
Hazardous Combustion Products	If involved in a fire, it will emit oxides of carbon, oxides of nitrogen and possibly toxic fumes of hydrogen chloride and phosgene.
Protective Equipment	Breathable air apparatus may have to be worn if material is involved in fires especially in confined spaces.

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal	Contain spill and absorb with clay, sand, soil or proprietary absorbent (such as vermiculite). Collect spilled material and waste in sealable open-top type containers for disposal.
Personal Protection	For appropriate personal protective equipment (PPE), refer Section 8.

7. HANDLING AND STORAGE

Storage	Store in the closed, original container in a cool, well ventilated area. Do not store for prolonged periods in direct sunlight. Keep container tightly sealed and do not store with seed, fertilisers or foodstuffs.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Limits	No exposure standards have been set for this product or the active ingredients. The manufacturer of the solvent has recommended an occupational exposure limit of 100 mg/m3; 17ppm TWA, as total hydrocarbon.
Personal Protective Equipment	When opening the container and preparing the spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield or goggles.
Eng. Controls	Handle in well ventilated areas, generally natural ventilation is adequate.
Hygiene Measures	After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash contaminated clothing and safety equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear brown liquid
Odour	Aromatic hydrocarbon odour.
Melting Point	<0°C
Solubility in Water	Forms an emulsion in water.
Boiling Point	>226°C
Specific Gravity (H2O=1)	1.090 - 1.098
pH Value	4.5 - 6.5 (1% aqueous emulsion)
Vapour Pressure	0.17kPa @ 38°C (for solvent), 0.034mPa @ 20°C for diclofop-methyl
Vapour Density (Air=1)	>1.00 (for solvent)
Volatile Component	40 - 50%

Partition co-efficient, n-octanol/water	Kow Log P is 4.5 for diclofop-methyl
Flash Point	92°C
Flammability	Combustible. C1.
Ignition Temperature	Not known, >226°C
Flammable Limits LEL	0.6%
Flammable Limits UEL	7.0%

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Hazardous Polymerization	Hazardous polymerisation is not possible.
Hazardous Reaction	Keep away from strong oxidising agents.
Conditions to Avoid	Excessive heat and fire.

11. TOXICOLOGICAL INFORMATION

Toxicology Information	No harmful effects are expected if the precautions on the label and this MSDS are followed.
Inhalation	May cause irritation to mucous membranes and respiratory tract. Breathing in high concentrations can produce central nervous system depression, which can lead to loss of coordination, impaired judgement and if exposure is prolonged, unconsciousness.
Ingestion	Ingestion of the concentrate in relatively large amounts can result in headache, nausea, lethargy, motor weakness and incoordination. If aspirated into the lung, e.g. from vomiting, the presence of the solvent may result in chemical pneumonitis or other lung damage.
Skin	May irritate the skin. Prolonged or repeated exposure may cause skin sensitisation. Prolonged contact with the concentrate can cause defatting of the skin and may result in dermatitis.
Eye	May irritate the eyes.
Reproductive Toxicity	Data indicates no teratogenic effects.
Mutagenicity	Data indicates no mutagenic effects.
Carcinogenicity	An incidence of liver tumours was noted in long-term studies with the solvent in rodents. As the mechanism involved is not relevant to humans, and the dose levels were very high, the potential oncogenic risk to humans in considered negligible.
Acute Toxicity - Oral	LD50 (rat) 512 (428 - 636) mg/kg for diclofop-methyl LD50 (rat) >2000 mg/kg for similar product
Acute Toxicity - Dermal	LD50 (rabbit) 557 mg/kg LD50 (rat) >5000 mg/kg for similar product
Acute Toxicity - Inhalation	LC50 (rat) (4hr) >1.36 mg/l for diclofop-methyl (1) LC50 (rat) (4hr) >3.83 mg/l for diclofop-methyl ester technical (2)
Eye Irritation	Mild eye irritant.
Skin Irritation	Mild skin irritant.
Skin Sensitisation	Product is not a skin sensitiser.
Other Information	The Australian Acceptable Daily Intake (ADI) for diclofop-methyl for a human is 0.002 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.25 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. (Ref: Comm. Dept. of Health and Ageing, 'ADI List', TGA, August 2003).

12. ECOLOGICAL INFORMATION

Known Harmful Effects on the Environment	The product is a marine pollutant for sea transport.
Other Precautions	Do not contaminate dams, waterways or sewers with this product.
Persistence / Degradability	Loss from soil is principally by microbial degradation. Half life in soil is typically 1-57 days. Soil adsorption Koc 14000 - 24400 mg/kg.
Acute Toxicity - Fish	The following is data for the active ingredient, diclofop-methyl. Toxic to fish. LC50 (96hr) for rainbow trout is 0.23 mg/l.
Acute Toxicity - Daphnia	EC50 (48hr) is 0.23 mg/l.
Acute Toxicity - Algae	EC50 (72hr) for scenedesmus subspicatus 1.5 mg/l.
Acute Toxicity - Other Organisms	Birds: Not toxic to birds. LD50 for japanese quail is >10,000 mg/kg

13. DISPOSAL CONSIDERATIONS

Product Disposal	On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemCollect).
Container Disposal	Triple rinse containers, add rinsate to the spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and dispose of in landfill in accordance with local regulations. drumMUSTER is the national program for the collection and recycling of empty, cleaned, non returnable crop production and on-farm animal health chemical containers. If the label on your container carries the drumMuster symbol, triple rinse the container, ring your local Council, and offer the container for collection in the program.

14. TRANSPORT INFORMATION

U.N. Number	None Allocated
DG Class	None Allocated
Hazchem Code	None Allocated
Packing Group	None Allocated
Storage and Transport	Considered non dangerous for transport by the Australian Code for the Transport of Dangerous Goods by Road and Rail.
UN Number (Sea Transport)	3082
IMO Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS LIQUID, N.O.S. (contains Diclofop-methyl)
IMDG Hazard Class	9
IMDG Pack. Group	III

15. REGULATORY INFORMATION

Risk Phrase	R22 Harmful if swallowed. R65 Harmful: may cause lung damage if swallowed.
Safety Phrase	S13 Keep away from food,drink and animal feeding stuffs. S2 Keep out of reach of children. S23(2) Do not breathe vapour. S24 Avoid contact with skin. S62 If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

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Poisons Schedule	S6
Hazard Category	Harmful
Packaging & Labelling	POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING

16. OTHER INFORMATION

Contact Person/Point	Normal Hours: Mr Volker Maier Phone: (03) 9282 1000 After Hours: Shift Supervisor Phone: 1800 033 498
References	(1) Pesticides Manual 12th Edition, 2000 (2) WSSA Herbicide Handbook 7th Edition, 1994
Revisions Highlighted	The MSDS was reviewed. Minor changes were made to the information. The MSDS is now issued in a 16 header format.

...End Of MSDS...