

Infosafe No™ 3NUJ3	Issue Date : August 2012	ISSUED by NUFARM
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 Product Name **MINDER Selective Herbicide**

Classified as hazardous

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<b>Product Name</b>	MINDER Selective Herbicide
<b>Product Code</b>	0618
<b>Product Type</b>	Group C F Herbicide
<b>Company Name</b>	NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)
<b>Address</b>	103-105 Pipe Road Laverton North Victoria 3026 Australia
<b>Emergency Tel.</b>	1800 033 498 (24hr Australia)
<b>Telephone/Fax Number</b>	Tel: +61 3 9282-1000 Fax: +61 3 9282-1001
<b>Recommended Use</b>	For the control of certain broadleaf weeds in winter cereals and pastures as specified in the Directions for Use table on the label.
<b>Other Information</b>	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. HAZARDS IDENTIFICATION

<b>Hazard Classification</b>	Classified as hazardous HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. Hazard classification according to the criteria of NOHSC. Dangerous goods classification according to the Australia Dangerous Goods Code.
<b>Risk Phrase(s)</b>	Classified as hazardous R22 Harmful if swallowed. R23 Toxic by inhalation. R41 Risk of serious damage to eyes. R43 May cause sensitization by skin contact. R63 Possible risk of harm to the unborn child. R65 Harmful: may cause lung damage if swallowed. R66 Repeated exposure may cause skin dryness and cracking. R67 Vapours may cause drowsiness and dizziness
<b>Safety Phrase(s)</b>	S1/2 Keep locked up and out of reach of children. S13 Keep away from food, drink and animal feeding stuffs. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S46 If swallowed, seek medical advice immediately and show this container or label.
<b>Other Information</b>	Poisons Schedule S6

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

<b>Chemical Characterization</b>	Liquid		
<b>Ingredients</b>	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>
	Bromoxynil octanoate	1689-99-2	250 g/L
	Di flufenican	83164-33-4	25 g/L
	Liquid Hydrocarbon	64742-94-5	125 g/L
	Ketones		200 g/L
	N-methyl pyrrolidone	872-50-4	50 g/L
	Other ingredients (considered non-hazardous)		30-60 %

## 4. FIRST AID MEASURES

<b>Inhalation</b>	Remove affected person to fresh air until recovered. Obtain medical advice.
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<b>Ingestion</b>	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.
<b>Skin</b>	Wash affected areas thoroughly with soap and water. Remove contaminated clothing and launder before re-use. If irritation persists, seek medical advice.
<b>Eye</b>	If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes. Seek medical advice.
<b>Advice to Doctor</b>	Treat symptomatically. If vomiting occurs, solvent present may cause pulmonary pneumonitis.

## 5. FIRE FIGHTING MEASURES

<b>Suitable Extinguishing Media</b>	Water fog, foam, carbon dioxide or dry chemical.
<b>Hazards from Combustion Products</b>	Combustible liquid at high temperatures. If involved in a fire, it will emit oxides of carbon and nitrogen, hydrogen chloride, hydrogen bromide and possibly other compounds of bromine, chlorine, fluorine and nitrogen.
<b>Special Protective Equipment for fire fighters</b>	Breathable air apparatus may have to be worn if material is involved in fires especially in confined spaces.
<b>Other Information</b>	STOP FIRE WATER FROM ENTERING DRAINS OR WATER BODIES.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Spills &amp; Disposal</b>	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.
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## 7. HANDLING AND STORAGE

<b>Precautions for Safe Handling</b>	For personal protective equipment (PPE) and hygiene advice, refer Section 8.
<b>Conditions for Safe Storage</b>	Store in the closed, original container in a cool, well ventilated area. Do not store for prolonged periods in direct sunlight.
<b>Other Information</b>	Always read the label and any attached leaflet before use.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>National Exposure Standards</b>	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/m <sup>3</sup> ; - ppm TWA, as total hydrocarbon. Safe Work Australia has set the following exposure standard for N-methyl pyrrolidone : TLV (TWA) 103 mg/m <sup>3</sup> , STEL 309 mg/m <sup>3</sup> . SK 'SK' notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.
<b>Engineering Controls</b>	Permissible Exposure Level (PEL) for diflufenican recommended by the manufacturer is 2.3 mg/m <sup>3</sup> . Local exhaust ventilation may be required in confined spaces.
<b>Personal Protective Equipment Hygiene Measures</b>	When preparing and using the product wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield. 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.
<b>Requirements Concerning Special Training</b>	Check State or Territory regulations that require people who use pesticides in their job or business to have training in the application of the materials.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Form</b>	Liquid
<b>Appearance</b>	Amber Liquid
<b>Odour</b>	Hydrocarbon odour
<b>Boiling Point</b>	176 - 200°C (for solvent)
<b>Solubility in Water</b>	Forms an emulsion in water.
<b>Specific Gravity</b>	1.15
<b>pH Value</b>	4 - 5
<b>Vapour Pressure</b>	0.19 mPa @ 25°C for bromoxynil octanoate; 0.00425 mPa for diflufenican.
<b>Volatile Component</b>	~60%
<b>Octanol/Water Partition Coefficient</b>	Kow Log P is 5.4 for bromoxynil octanoate, 4.9 for diflufenican
<b>Flash Point</b>	100°C
<b>Flammability</b>	Combustible liquid C1.
<b>Auto-Ignition Temperature</b>	Not determined
<b>Explosion Properties</b>	No information

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable under normal conditions.
<b>Hazardous Reactions</b>	Keep away from strong oxidising agents, may react violently.
<b>Hazardous Polymerization</b>	Hazardous polymerisation is not possible.

## 11. TOXICOLOGICAL INFORMATION

<b>Inhalation</b>	Symptoms of exposure by inhalation are similar to those described for ingestion.
<b>Ingestion</b>	Possible symptoms of exposure include: headache, nausea, dizziness and weakness. If aspirated into the lung, e.g. from vomiting, the presence of solvent may result in chemical pneumonitis or other lung damage.
<b>Skin</b>	May irritate the skin. Prolonged contact with the concentrate can cause defatting of the skin and may result in dermatitis.
<b>Eye</b>	May irritate the eyes.
<b>Chronic Effects</b>	Chronic Overexposure: Weight loss and damage to liver and kidneys may be expected if exposure is excessive.
<b>Reproductive Toxicity</b>	The solvent, N-methyl pyrrolidone (NMP), may cause effects on the cardiovascular and skeletal systems of developing embryos. Bromoxynil octanoate has been assigned R63 on the basis of studies, in rats, rabbits and mice which show reduced ossification and increased incidence of supernumerary ribs at doses (range 5-15 mg/kg/day) which are not toxic maternally. The significance of supernumerary ribs as an indicator of developmental toxicity and extrapolation to other species remain problematical. (1)
<b>Acute Toxicity - Oral</b>	LD50 (rat) 365 mg/kg for bromoxynil octanoate LD50 (rat) >5000 mg/kg for diflufenican
<b>Acute Toxicity - Dermal</b>	LD50 (rat) >2000 mg/kg for bromoxynil octanoate LD50 (rat) >2000 mg/kg for diflufenican
<b>Acute Toxicity - Inhalation</b>	LC50 (rat) (4hr) 0.76 mg/l for bromoxynil octanoate
<b>Eye Irritation</b>	The product is an eye irritant.
<b>Skin Irritation</b>	Mild to moderate skin irritant.
<b>Skin Sensitisation</b>	The product is a skin sensitiser.

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**Other Information** The Australian Acceptable Daily Intake (ADI) for bromoxynil for a human is 0.003 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.3 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 Office of Chemical Safety and Environmental Health, 'ADI List', December 2011).

ADI for diflufenican is 0.2 mg/kg/day, NOEL 16.3 mg/kg/day.

## 12. ECOLOGICAL INFORMATION

**Persistence / Degradability** Average soil half life of bromoxynil is 1 days.

**Known Harmful Effects on the Environment** Harmful to fish and other aquatic organisms.

**Other Precautions** Do not spray in high winds.  
Do not contaminate dams, waterways or sewers with this product or the containers which have held this product.

**Environ. Protection** Marine pollutant.  
Spray drift can cause damage, read the label for more information.

**Acute Toxicity - Fish** The following is data for the active ingredient, bromoxynil octanoate.  
Toxic to fish. LC50 (96hr) for rainbow trout is 0.041 mg/l.

**Acute Toxicity - Daphnia** LC50 (48hr) for daphnia is 0.046 mg/l for bromoxynil octanoate.  
LC50 (48hr) for daphnia is 0.24 mg/l for diflufenican.

**Acute Toxicity - Other Organisms** Bees: Not toxic to bees. LD50 >100 µg/bee.

## 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 (ChemClear®).

**Container Disposal** Do not use this container for any other purpose.  
Triple or preferably pressure rinse inner bladder or containers before disposal. Add rinsings to the spray tank. If recycling, replace cap and return clean containers to recycler or designated collection point.  
If not recycling, break, crush or puncture and deliver empty packaging for appropriate disposal at an approved waste management facility.  
If an approved waste management facility is not available, bury the empty packaging 500mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations.  
DO NOT burn empty containers or product. 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.  
Returnable containers: empty contents fully into application equipment. Replace cap, close all valves and return to the point of supply for refill or storage.

## 14. TRANSPORT INFORMATION

**Transport Information** It is good practice not to transport agricultural chemical products with food, food related materials and animal feedstuffs.

**Storage and Transport** Considered non dangerous for road and rail transport (in packaging, including IBCs not greater than 3000 Lt each) by the Australian Code for the Transport of Dangerous Goods by Road and Rail. Ref: ADG7; SP No. AU01.

**UN Number (Sea Transport)** For bulk shipments as Class 9, use UN 3082, HazChem code 2Z.  
3082

**IMO Class/Packing Group** Class 9; Packing Group III

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**IMO Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(contains Bromoxynil)

## 15. REGULATORY INFORMATION

**Poisons Schedule** S6

**Packaging & Labelling** POISON  
KEEP OUT OF REACH OF CHILDREN  
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

**Hazard Category** Toxic, Irritant

**Other Information** This product is registered with the Australian Pesticides and Veterinary Medicines Authority (APVMA). APVMA product number: 63214.

## 16. OTHER INFORMATION

**Date of preparation or last revision of MSDS** Draft document revised 03/08/2012

**Contact Person/Point** Normal Hours: Mrs Kathleen Marsh Phone: +61 3 9282 1000  
After Hours: Shift Supervisor Phone: 1800 033 498

**Literature References** (1) Krieger ed. (2001, Handbook of Pesticide Toxicology, Second Edition Vol.2 Agents - Academic Press

**Revisions** First Issue

**Highlighted** Product now commercial.  
...End Of MSDS...

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