



Infosafe No™ 3NUJ3 Issue Date :October 2008 ISSUED by NUFARM CS: 1.4.21

Product Name **MINDER**

Classified as hazardous

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name** MINDER  
**Product Code** 0618  
**Company Name** NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)  
**Address** 103-105 Pipe Road Laverton North  
Victoria 3026 Australia  
**Emergency Tel.** 1800 033 498 (24hr Australia)  
**Telephone/Fax Number** Tel: +61 3 9282-1000  
Fax: +61 3 9282-1001  
**Recommended Use** Experimental product.  
**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. HAZARDS IDENTIFICATION

**Hazard Classification** 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.  
**Risk Phrase(s)** Classified as hazardous  
R22 Harmful if swallowed.  
R23 Toxic by inhalation.  
R36 Irritating to eyes.  
R43 May cause sensitization by skin contact.  
R63 Possible risk of harm to the unborn child.  
R66 Repeated exposure may cause skin dryness and cracking.  
R67 Vapours may cause drowsiness and dizziness  
**Safety Phrase(s)** S1/2 Keep locked up and out of reach of children.  
S13 Keep away from food, drink and animal feeding stuffs.  
S23(2) Do not breathe vapour.  
S24 Avoid contact with skin.  
S36/37 Wear suitable protective clothing and gloves.  
S62 If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.  
**Other Information** Poisons Schedule S6

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical Characterization** Liquid

<b>Ingredients</b>	<b>Name</b>	<b>CAS</b>	<b>Proportion</b>
	Bromoxynil present as the n-octanoyl ester	1689-99-2	250 g/L
	Di flufenican	83164-33-4	25 g/L
	Liquid Hydrocarbon	64742-94-5	416 g/L
	N-methyl pyrrolidone	872-50-4	10-30 %
	Other ingredients (considered non-hazardous)		Balance

## 4. FIRST AID MEASURES

**Inhalation** 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.
<b>Eye</b>	If irritation persists, seek medical advice. If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes.
<b>Advice to Doctor</b>	Seek medical advice. 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>Specific Hazards</b>	

## 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 323 mg/m <sup>3</sup> ; 50 ppm TWA, as total hydrocarbon. NOHSC 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</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.
<b>Hygiene Measures</b>	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>	NSW regulations require that people who use pesticides in their job or business must 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>	1.08
<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>	75°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>	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. Supernumerary ribs are seen in control animals and are often seen in reproductive toxicity studies. The ribs disappear during subsequent development with rats, but not with mice. 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, 'ADI List', September 2007).  
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.

**Container Disposal** Do not use this container for any other purpose.  
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.  
If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.  
Empty containers and product should not be burnt.

## 14. TRANSPORT INFORMATION

**Transport Information** Not classified as Dangerous Goods, according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

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

**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

**AICS (Australia)** All of the components in this product are listed on the Australian Inventory of Chemical Substances.

## 16. OTHER INFORMATION



# Material Safety Data Sheet

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**Date of preparation**      revised 22/10/2008

**or last revision of**

**MSDS**

**Contact**

Normal Hours:    Mr Volker Maier      Phone: +61 3 9282 1000

**Person/Point**

After Hours:     Shift Supervisor      Phone:    1800 033 498

**Literature**

(1) Krieger ed. (2001, Handbook of Pesticide Toxicology, Second Edition Vol.2

**References**

Agents - Academic Press

**Revisions**

First Issue

**Highlighted**

Product code assigned.

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