



Infosafe No™ 3NUAF	Issue Date : March 2010	ISSUED by NUFARM
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Product Name **Sequence Herbicide**

Classified as hazardous

**1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

**Product Name** Sequence Herbicide

**Product Code** 0605

**Product Type** Group A Herbicide

**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** For the control of certain grass weeds in beetroot, cabbage, canola, celery, chickpeas, cotton, faba beans, field peas, forestry, lentils, lettuce, lupins, mung beans, non-bearing fruit trees, onions, ornamentals, peanuts, potatoes and soybeans as per the Directions for Use table on the label.

**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  
R36/38 Irritating to eyes and skin.  
R65 Harmful: may cause lung damage if swallowed.  
R66 Repeated exposure may cause skin dryness and cracking.  
R67 Vapours may cause drowsiness and dizziness

**Safety Phrase(s)** S13 Keep away from food, drink and animal feeding stuffs.  
S2 Keep out of reach of children.  
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S37/39 Wear suitable gloves and eye/face protection.  
S46 If swallowed, seek medical advice immediately and show this container or label.

**Other Information** Poisons Schedule S5

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Chemical Characterization** Liquid

<b>Ingredients</b>	<b>Name</b>	<b>CAS</b>	<b>Proportion</b>
	Clethodim	99129-21-2	240 g/L
	Liquid Hydrocarbons	64742-94-5	655 g/L
	Other ingredients (considered non-hazardous)		Balance

**4. FIRST AID MEASURES**

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

**Ingestion** Rinse mouth and then drink plenty of water.  
Do not give anything by mouth to a semi-conscious or unconscious person.  
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

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<b>Skin</b>	(Aust). Make every effort to prevent vomit from entering the lungs by careful placement of the patient. Wash affected areas thoroughly with soap and water.
<b>Eye</b>	Remove contaminated clothing and launder before re-use. If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes. Seek medical advice.
<b>First Aid Facilities</b>	If poisoning occurs, contact a doctor or the Poisons Information Centre (Australia) on 13 11 26.
<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>	May emit toxic fumes of hydrogen chloride or phosgene if involved in fires or exposed to extreme heat.
<b>Special Protective Equipment for fire fighters</b>	Breathable air apparatus should be worn when fighting a fire in which this product is involved.
<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. On-site disposal of concentrate is not acceptable.
<b>Clean-up Methods - Large Spillages</b>	Place damaged containers in recovery bins (if available) and return to manufacturer. If large liquid spills occur, attempt to recover as much spilt material from sumps and bunded areas before absorbing remaining material into vermiculite or other absorbent.
<b>Environmental Precautions</b>	This product is a herbicide and spills can damage crops, pastures and desirable vegetation.

## 7. HANDLING AND STORAGE

<b>Conditions for Safe Storage</b>	Store in the closed, original container in a dry, well ventilated area out of direct sunlight. Protect from frosts.
<b>Tank Cleaning</b>	See label for detailed information on cleaning of spray equipment.
<b>Other Information</b>	Always read the label and any attached leaflet before use.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>National Exposure Standards</b>	The manufacturer of the solvent has recommended an occupational exposure limit of 100 mg/m <sup>3</sup> ; 17ppm TWA, as total hydrocarbon.
<b>Engineering Controls</b>	Handle in well ventilated areas, generally natural ventilation is adequate.
<b>Personal Protective Equipment</b>	When opening the container, preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and goggles.
<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>	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

<b>Form</b>	Liquid
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<b>Appearance</b>	Amber liquid
<b>Odour</b>	Mild aromatic odour
<b>Solubility in Water</b>	Forms an emulsion in water.
<b>Specific Gravity</b>	0.95
<b>Vapour Pressure</b>	<0.01 mPa (20°C)
<b>Octanol/Water Partition Coefficient</b>	Kow Log P is 4.18
<b>Flash Point</b>	67.5°C
<b>Flammability</b>	Combustible liquid C1.
<b>Other Information</b>	pKa is 4.47

## 10. STABILITY AND REACTIVITY

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

## 11. TOXICOLOGICAL INFORMATION

<b>Inhalation</b>	High vapour concentrations of the solvent while handling the concentrate are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, and may have other central nervous system effects.
<b>Ingestion</b>	Amounts swallowed incidental to normal handling procedures and use are not expected to cause injury. 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>	Will irritate the skin. Prolonged contact with the concentrate can cause defatting of the skin and may result in dermatitis.
<b>Eye</b>	Will irritate the eyes.
<b>Chronic Effects</b>	Chronic exposure can cause damage to the liver.
<b>Reproductive Toxicity</b>	No such effects have been observed in the absence of maternal toxicity.
<b>Mutagenicity</b>	The weight of evidence indicates that clethodim does present a mutagenic risk.
<b>Carcinogenicity</b>	Data indicates no carcinogenic effects.
<b>Acute Toxicity - Oral</b>	The following data is for the active ingredient, clethodim. LD50 (male rats) 1630 mg/kg LD50 (female rats) 1360 mg/kg
<b>Acute Toxicity - Dermal</b>	LD50 (rat) >5000 mg/kg for clethodim
<b>Acute Toxicity - Inhalation</b>	LC50 (rat) (4hr) >3.9 mg/l for clethodim
<b>Eye Irritation</b>	The product is an eye irritant.
<b>Skin Irritation</b>	The product is a skin irritant.
<b>Skin Sensitisation</b>	Product is not a skin sensitiser.
<b>Other Information</b>	The Australian Acceptable Daily Intake (ADI) for clethodim for a human is 0.01 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 1 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', December 2008).

## 12. ECOLOGICAL INFORMATION

<b>Persistence / Degradability</b>	Average field half life of clethodim is 1-3 days.
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**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** Spray drift can cause damage, read the label for more information.

**Acute Toxicity - Fish** The following is data for the active ingredient, clethodim.  
Not toxic to fish. LC50 (96 hr) for rainbow trout is 67 mg/l.  
EC50 (48hr) for daphnia is 120 mg/l for clethodim.

**Acute Toxicity - Daphnia**

**Acute Toxicity - Algae** EC50 (120hr) for algae is 57.8 mg/l for clethodim.

**Acute Toxicity - Other Organisms** Birds: Not toxic to birds. LD50 for bobwhite quail is >2000 mg/kg  
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 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.  
If recycling, replace cap and return clean containers to recycler or designated collection point.  
If not recycling, puncture or shred and bury containers in local authority landfill.  
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.

### 15. REGULATORY INFORMATION

**Poisons Schedule** S5

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

**Hazard Category** Harmful, Irritant

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

### 16. OTHER INFORMATION

**Date of preparation or last revision of MSDS** Reviewed 30/03/2010

**Contact Person/Point** Normal Hours: Mr Volker Maier Phone: +61 3 9282 1000  
After Hours: Shift Supervisor Phone: 1800 033 498

**Revisions Highlighted** The MSDS was reviewed. Minor changes were made to the information.  
...End Of MSDS...



# Material Safety Data Sheet

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