



# Material Safety Data Sheet

Page: 1 of 5

Infosafe No. 3NU4U Issue Date : January 2007 ISSUED by NUFARM

Product Name : **INVADER 600 Herbicide**

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name** INVADER 600 Herbicide  
**Product Code** 0521  
**Product Type** Group I Herbicide  
**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/Fax Number** Tel:  
(03) 9282-1000  
Fax:  
(03) 9282-1001  
**Recommended Use** For the control of various woody and broadleaf weeds as specified in 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** 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)** R22 Harmful if swallowed.  
R36 Irritating to eyes.  
R43 May cause sensitization by skin contact.  
**Safety Phrase(s)** S13 Keep away from food, drink and animal feeding stuffs.  
S2 Keep out of reach of children.  
S24/25 Avoid contact with skin and eyes.  
S46 If swallowed, 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>
	Triclopyr (present as the butoxyethyl ester)	64700-56-7	600 g/L
	Butyl diglycol	112-34-5	10-30 %
	Other non-hazardous ingredients		Balance

## 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



# Material Safety Data Sheet

Page: 2 of 5

Infosafe No. 3NU4U Issue Date : January 2007 ISSUED by NUFARM

Product Name : **INVADER 600 Herbicide**

swallowed (more than about 10ml) 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 laundry before re-use.  
Wash affected areas thoroughly with soap and water.  
Seek medical advice, but only after the exposed skin has been thoroughly washed.

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

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

**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, it will emit oxides of carbon, oxides of nitrogen, hydrogen chloride and possibly phosgene.

**Special Protective Equipment for fire fighters** Breathable air apparatus may have to be worn if material is involved in fires especially in confined spaces.

**Specific Hazards**

**Hazchem Code** 2X

**Emergency Action in case of Fire** If exposed to fire, keep container cool by spraying with water.  
If possible, remove other containers from the area of fire.

**Other Information** STOP FIRE WATER FROM ENTERING DRAINS OR WATER BODIES.

## 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

**Precautions for Safe Handling** Do NOT contaminate dams, rivers or streams, or any other water bodies with chemical or used containers.

**Conditions for Safe Storage** Store in the closed, original container in a dry, cool well ventilated area out of direct sunlight.  
Keep container tightly sealed and do not store with seed, fertilisers or foodstuffs.

**Tank Cleaning** See label for detailed information on cleaning of spray equipment.

**Other Information** Always read the label and any attached leaflet before use.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Handle in well ventilated areas, generally natural ventilation is adequate.

**Personal Protective Equipment** It is good practice to wear suitable personal protective equipment (PPE).  
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 face shield or goggles.

**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.



# Material Safety Data Sheet

Page: 3 of 5

Infosafe No. 3NU4U Issue Date : January 2007 ISSUED by NUFARM

Product Name : **INVADER 600 Herbicide**

**Requirements Concerning Special Training** NSW regulations require that people who use pesticides in their job or business must have training in the application of the materials. By 1st September, 2005 all users must have received such training.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Form** Liquid  
**Appearance** Amber liquid  
**Solubility in Water** Disperses in water.  
**Specific Gravity** 1.21  
**Vapour Pressure** 0.48 mPa (triclopyr butoxyethyl ester)  
**Flash Point** 95°C  
**Flammability** Combustible C1.

## 10. STABILITY AND REACTIVITY

**Chemical Stability** Stable under normal conditions.  
**Hazardous Polymerization** Hazardous polymerisation is not possible.

## 11. TOXICOLOGICAL INFORMATION

**Toxicology Information** No harmful effects are expected if the precautions on the label and this MSDS are followed.  
**Inhalation** High vapour concentrations of the solvent while handling the concentrate are irritating to the eyes and the respiratory tract.  
**Ingestion** Ingestion of the concentrate in relatively large amounts can result in headache, nausea, lethargy, motor weakness and incoordination.  
**Skin** May irritate the skin.  
May cause sensitisation by prolonged skin contact.  
**Eye** Will irritate the eyes.  
**Chronic Effects** Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.  
**Mutagenicity** Data indicates no mutagenic effects.  
**Carcinogenicity** Triclopyr has been assessed in animals and some data exists that triclopyr is a substance which causes some concern for humans owing to possible carcinogenic effects from long term exposure, but in respect of which the available information is not adequate for making a satisfactory assessment.  
**Acute Toxicity - Oral** LD50 (rat) 803 mg/kg for triclopyr butoxyethyl ester  
**Acute Toxicity - Dermal** LD50 (rabbit) >2000 mg/kg for triclopyr butoxyethyl ester  
**Acute Toxicity - Inhalation** LC50 (rat) (4hr) >4.8 mg/l for triclopyr butoxyethyl ester  
**Eye Irritation** Moderate eye irritant.  
**Skin Irritation** Mild to moderate skin irritant.  
**Skin Sensitisation** Prolonged and repeated skin contact may result in skin sensitisation.  
**Other Information** The Australian Acceptable Daily Intake (ADI) for triclopyr for a human is 0.005 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.5 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, June 2006).

## 12. ECOLOGICAL INFORMATION

**Persistence / Degradability** Triclopyr butoxyethyl ester is rapidly hydrolysed to triclopyr acid in soil and water. Triclopyr acid is degraded by microbial action and photodecomposition. Triclopyr acid, in soil, has a half-life of approximately forty days, depending on soil and climatic conditions. In water, triclopyr acid



# Material Safety Data Sheet

Page: 4 of 5

Infosafe No. 3NU4U Issue Date : January 2007 ISSUED by NUFARM

Product Name : **INVADER 600 Herbicide**

will decompose rapidly with a half-life of one to two days. Minimal leaching of triclopyr acid may occur in light soils under high rainfall conditions. Contamination of ground water by triclopyr is highly unlikely. If used according to the label, Invader 600 will not be harmful to the environment.

**Other Precautions** 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. Marine pollutant.

**Acute Toxicity - Fish** The following is data for the active ingredient, triclopyr as the butoxyethyl ester.

LC50 (96 hr) for the most sensitive species tested is 0.31 mg/l.

**Acute Toxicity - Daphnia** LC50 (48 hr) for daphnia is 0.66 mg/l for triclopyr butoxyethyl ester.

**Acute Toxicity - Algae** EC50 (48hr) for algae is 0.193 mg/l.

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

LD50 for bobwhite quail is 735 mg/kg for triclopyr butoxyethyl ester

## 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 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

**U.N. Number** None Allocated

**Proper Shipping Name** None Allocated

**DG Class** None Allocated

**Hazchem Code** 2X

**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 Class/Packing Group** Class 9;

**IMO Marine Pollutant** Marine Pollutant

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

## 15. REGULATORY INFORMATION

**Poisons Schedule** S6



# Material Safety Data Sheet

Page: 5 of 5

Infosafe No.	3NU4U	Issue Date : January 2007	ISSUED by NUFARM
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Product Name : **INVADER 600 Herbicide**

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<b>Packaging &amp; Labelling</b>	POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
<b>Hazard Category</b>	Harmful, Irritant
<b>AICS (Australia)</b>	All of the components in this product are listed on the Australian Inventory of Chemical Substances.

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## 16. OTHER INFORMATION

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<b>Contact Person/Point</b>	Normal Hours: Mr Volker Maier                      Phone: (03) 9282 1000 After Hours: Shift Supervisor                      Phone: 1800 033 498
<b>Literature References</b>	EFSA Scientific Report (2005) 56, 1-103 conclusion on the peer review of triclopyr
<b>Revisions Highlighted</b>	The MSDS was reviewed. Minor changes were made to the information. The MSDS is now issued in a 16 header format. ...End Of MSDS...