



# Material Safety Data Sheet

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Infosafe No. 3NU2K Issue Date : November 2007 ISSUED by NUFARM

Product Name : **TriflurX Selective Herbicide**

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name** TriflurX Selective Herbicide  
**Product Code** 0792  
**Product Type** Group D 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** A pre-emergence herbicide for the control of annual grasses and certain broadleaf weeds in certain horticultural and agricultural crops as listed 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)** R36 Irritating to eyes.  
R43 May cause sensitization by skin contact.  
R65 Harmful: may cause lung damage if swallowed.  
**Safety Phrase(s)** S13 Keep away from food, drink and animal feeding stuffs.  
S2 Keep out of reach of children.  
S24 Avoid contact with skin.  
S37 Wear suitable gloves.  
**Other Information** Poisons Schedule 5

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical Characterization** Liquid

<b>Ingredients</b>	<b>Name</b>	<b>CAS</b>	<b>Proportion</b>
	Trifluralin	1582-09-8	480 g/L
	Dispersants	N/A	<10%
	Liquid Hydrocarbon	64742-94-5	499g/L or 557g/L

**Other Information** di-n-propylnitrosamine < 0.5ppm

## 4. FIRST AID MEASURES

**Inhalation** Remove affected person to fresh air until recovered.  
Apply CPR if there is no breathing and NO pulse.  
**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.  
**Skin** Wash affected areas thoroughly with soap and water.  
Remove contaminated clothing and launder before re-use.  
**Eye** If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes.  
**First Aid Facilities** If poisoning occurs, contact a doctor or the Poisons Information Centre



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**Advice to Doctor** (Australia) on 13 11 26.  
Treat symptomatically.  
If vomiting occurs, solvent present may cause pulmonary pneumonitis.

## 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 hydrogen fluoride, oxides of nitrogen and possibly cyanides.

**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**

## 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.

**Environmental Precautions** This product is a herbicide and spills can damage crops, pastures and desirable vegetation.  
Prevent from entering drains, waterways or sewers.

## 7. HANDLING AND STORAGE

**Conditions for Safe Storage** Store in the closed, original container in a dry, well ventilated area out of direct sunlight.  
Do not store near oxidisers.  
Do not store below 5 °C. Extended storage below 5°C can result in the formation of crystals on the bottom of the container. If crystallisation does occur, store the container on its side at room temperature and rock occasionally until crystals re-dissolve.  
Ensure any crystals are dissolved before adding to the spray tank.

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**National Exposure Standards** 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>; 15ppm TWA, as total hydrocarbon.

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

**Respiratory Protection** Do not inhale spray mist.

**Personal Protective Equipment** 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.  
Sensitive workers should use protective clothing.

**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

**Form** Liquid

**Appearance** Bright orange, clear liquid

**Odour** Solvent odour

**Melting Point** Some crystallisation occurs between 0 and -7°C



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<b>Boiling Point</b>	183-210°C (for solvent)
<b>Solubility in Water</b>	Disperses in water.
<b>Specific Gravity</b>	1.116
<b>Vapour Pressure</b>	0.5 kPa @ 38°C for solvent, 13.7 mPa @ 25°C for trifluralin
<b>Vapour Density (Air=1)</b>	4.8 (solvent)
<b>Volatile Component</b>	51% v/v
<b>Flash Point</b>	103°C
<b>Flammability</b>	Combustible. C1.
<b>Auto-Ignition Temperature</b>	443°C (solvent)
<b>Flammable Limits - Lower</b>	0.9% (for solvent)
<b>Flammable Limits - Upper</b>	6% (for solvent)

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable under normal conditions. Do not store below 5°C.
<b>Incompatible Materials</b>	Prolonged reaction with water can cause slow decomposition and the formation of acid which may attack drums. If a part open drum is to be stored, ensure that no water has been added to the drum.
<b>Hazardous Reactions</b>	Violent reactions between this product and oxidising agents are possible.
<b>Hazardous Polymerization</b>	Hazardous polymerisation is not possible.

## 11. TOXICOLOGICAL INFORMATION

<b>Toxicology Information</b>	No harmful effects are expected if the precautions on the label and this MSDS are followed. Nufarm trifluralin (technical) is manufactured to comply with a maximum limit of 0.5ppm di-n-propylnitrosamine, generally, the levels are not detectable at a detection limit of 0.2ppm. The final product specification is set in accordance with the current FAO specification of max 0.5ppm di-n-propylnitrosamine.
<b>Inhalation</b>	When applying the product as a spray avoid breathing in spray mist. High vapour concentrations of the solvent while handling the concentrate are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, can be anaesthetic and may have other central nervous system effects.
<b>Ingestion</b>	The concentrate is of low toxicity if swallowed. However, swallowing of large amounts may cause injury, mainly due to the solvent. If aspirated into the lung, e.g. from vomiting, the presence of the solvent may result in chemical pneumonitis or other lung damage.
<b>Skin</b>	Prolonged contact with the concentrate can cause defatting of the skin and may result in dermatitis. May cause sensitisation by prolonged skin contact.
<b>Eye</b>	The concentrate may cause irritation of the eyes.
<b>Chronic Effects</b>	No chronic effects of trifluralin exposure have been documented in the literature over many years of use, other than relatively rare skin sensitisation.
<b>Carcinogenicity</b>	Early experiments on animals indicated that trifluralin was a carcinogen. This has since been found to be due to an impurity, di-n-propylnitrosamine, a known carcinogen, present in crude trifluralin at about 80 - 100 ppm. Later experimentation with trifluralin on mice and rats given high doses of material containing 1ppm or less of di-n-propylnitrosamine have not shown any tumour formation. Daily doses for rats were 202-392 mg/Kg/day and for mice



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256-664 mg/kg/day. Thus trifluralin itself is considered to be non-carcinogenic.

**Acute Toxicity - Oral** LD50 (rat) >10,000 mg/kg for trifluralin  
LD50 (mouse) 5,000 mg/kg for trifluralin  
In 2 year feeding trials, rats receiving 2,000 mg/kg diet suffered no ill effects.  
In 2 year feeding trials, dogs receiving 1,000 mg/kg body weight suffered no ill effects.

**Other Information** The Australian Acceptable Daily Intake (ADI) for trifluralin for a human is 0.02 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 2.5 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, September 2005).

## 12. ECOLOGICAL INFORMATION

**Persistence / Degradability** Trifluralin degrades in soil at a relatively moderate rate, about 85 - 90% of the material is lost in normal soil in 1/2 to 1 year.

**Other Precautions** Do not spray in high winds.  
Do not contaminate dams, waterways or sewers with 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, trifluralin.  
LC50 (96 hr) for young rainbow trout is 0.088 mg/l.  
LC50 (96 hr) for young bluegill sunfish is 0.089 mg/l.

**Acute Toxicity - Daphnia** LC50 (48hr) for daphnia is 0.245 mg/l.

**Acute Toxicity - Other Organisms** Birds: Not toxic to birds. LD50 for bobwhite quail is >2,000 mg/kg  
Bees: Not toxic to bees. LD50 >100 µg/bee.

## 13. DISPOSAL CONSIDERATIONS

**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.  
Returnable containers: empty contents fully into application equipment.  
Replace cap, close all valves and return to the point of supply for refill or storage.  
If on-site container disposal is necessary, triple rinse empty container with water, add rinsate to the spray tank. Puncture top, sides and bottom, crush and bury in an approved landfill or bury with at least 500 mm of soil cover away from pasture and crop areas, water supplies and houses.  
Empty containers and product should not be burnt.

## 14. TRANSPORT INFORMATION

**Transport Information** It is good practice to separate this product from food, food related materials, animal feedstuffs, seed or fertilisers during transport.

**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 Trifluralin)



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## 15. REGULATORY INFORMATION

<b>Poisons Schedule</b>	S5
<b>Packaging &amp; Labelling</b>	CAUTION 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

<b>Contact Person/Point</b>	Normal Hours: Mr Volker Maier	Phone: +61 3 9282 1000
	After Hours: Shift Supervisor	Phone: 1800 033 498
<b>Revisions Highlighted</b>	The MSDS was reviewed. Minor changes were made to the information.	
	...End Of MSDS...	