

Material Safety Data Sheet

CS: 1.4.21

Page: 1 of 5

Infosafe No™ 3NU2L Issue Date :February 2009 ISSUED by CRPCARE CS: 1.4.21

Product Name **TRIFLURALIN 480 Selective Herbicide**

Classified as hazardous

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name TRIFLURALIN 480 Selective Herbicide
Product Code 0812
Product Type Group D Herbicide
Company Name Crop Care Australasia Pty Ltd (ABN 53 061 362 347)
Address Unit 15/16 Metroplex Avenue Murarrie
Queensland 4172 Australia
Emergency Tel. 1800 033 498 (24hr Australia)
Telephone/Fax Number Tel: +61 7 3909 2000
Fax: +61 7 3909 2010
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.
Other Names

<u>Name</u>	<u>Product Code</u>
Crop Care Trifluralin 480 Selective Herbicide	0812

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 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.
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

<u>Ingredients</u>	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>
	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.

Material Safety Data Sheet

CS: 1.4.21

Page: 2 of 5

Infosafe No™ 3NU2L Issue Date :February 2009 ISSUED by CRPCARE CS: 1.4.21

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Skin Wash affected areas thoroughly with soap and water.
Remove contaminated clothing and laundry 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 (Australia) on 13 11 26.

Advice to Doctor 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.

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/m³; 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 and preparing the 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 wear 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

Material Safety Data Sheet

CS: 1.4.21

Page: 3 of 5

Infosafe No™ 3NU2L	Issue Date :February 2009	ISSUED by CRPCARE	CS: 1.4.21
--------------------	---------------------------	-------------------	------------

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Melting Point	Some crystallisation occurs between 0 and -7°C
Boiling Point	183-210°C (for solvent)
Specific Gravity	1.116
Vapour Pressure	0.5 kPa @ 38°C for solvent, 13.7 mPa @ 25°C for trifluralin
Vapour Density (Air=1)	4.8 (solvent)
Volatile Component	51% v/v
Flash Point	103°C
Flammability	Combustible. C1.
Auto-Ignition Temperature	443°C (solvent)
Flammable Limits - Lower	0.9% (for solvent)
Flammable Limits - Upper	6% (for solvent)

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions. Do not store below 5°C.
Incompatible Materials	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.
Hazardous Reactions	Violent reactions between this product and oxidising agents are possible.
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. 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.
Inhalation	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.
Ingestion	The concentrate is of low toxicity if swallowed. However, swallowing of large amounts may cause injury, mainly due to solvent. If aspirated into the lung, e.g. from vomiting, the presence of the solvent may result in chemical pneumonitis or other lung damage.
Skin	Prolonged contact with the concentrate can cause defatting of the skin and may result in dermatitis. May cause sensitisation by prolonged skin contact.
Eye	The concentrate may cause irritation of the eyes.
Chronic Effects	No chronic effects of trifluralin exposure have been documented in the literature over many years of use, other than relatively rare skin sensitisation.
Carcinogenicity	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 256-664 mg/kg/day. Thus trifluralin itself is considered to be non-carcinogenic.

Material Safety Data Sheet

CS: 1.4.21

Page: 4 of 5

Infosafe No™ 3NU2L Issue Date :February 2009 ISSUED by CRPCARE CS: 1.4.21

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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 Office of Chemical Safety, 'ADI List', April 2008).

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 (96hr) for young rainbow trout is 0.088 mg/l.
LC50 (96hr) 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 road and rail transport (in packs less than 3000 kg or 1t) by the Australian Code for the Transport of Dangerous Goods by Road and Rail. Ref: ADG7; SP No. AU01.

Exempt from classification as a Dangerous Good in packs less than 3,000 kg or L as per ADG7, SP no. AU01.
For bulk shipments as Class 9, use UN 3082, HazChem code •3Z.

UN Number (Sea Transport) 3082

IMO Class/Packing Group Class 9; Packing Group III

IMO Marine Pollutant Marine Pollutant

Material Safety Data Sheet

CS: 1.4.21

Page: 5 of 5

Infosafe No™ 3NU2L	Issue Date :February 2009	ISSUED by CRPCARE	CS: 1.4.21
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IMO Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains Trifluralin)
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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	Revised 25/02/2009
Contact Person/Point	Normal Hours: Mr Volker Maier Phone: (03) 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...

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