

MATERIAL SAFETY DATA SHEET



TRIFLURALIN 480 SELECTIVE HERBICIDE

4 FARMERS PTY LTD

ACN 067 443 485

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AUSTRALIA

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MSDS NO. 54062

I *PRODUCT IDENTIFICATION*

Product Name 4Farmers TRIFLURALIN 480 SELECTIVE HERBICIDE

Other Names:	None
Manufacturer's Code	dinitroaniline
U.N. Class and Number:	None allocated
Australian Code for Transport of Dangerous Goods by Road	N/A
Poisons Schedule:	Schedule 5
Hazchem Code:	None allocated
Use	Agricultural Herbicide for a wide range of crops

PHYSICAL DESCRIPTION/PROPERTIES

Appearance:	Orange coloured liquid. Hydrocarbon odour.
Specific Gravity:	1.08 - 1.10
Flash Point;	>63 °C
Solubility:	Forms an emulsion
Corrosiveness	Not corrosive
Vapour Pressure:	No specific data. Expected to be low at 100°C.

Ingredients

Chemical Entity	CAS No	Proportion (%)
Trifluralin (Active ingredient)	1582-09-8	48
Liquid Hydrocarbon	secret	47.5
Other non hazardous ingredients	secret	to 100

II HEALTH HAZARD INFORMATION

Health Effects:

No specific data is available for the product for chronic exposure symptoms.

For Trifluralin: Prolonged or repeated skin contact with trifluralin may cause allergic dermatitis. The administration of 25 mg/kg/day to dogs for 2 years resulted in no observed toxicity. In another study of beagle dogs, toxic effects were observed at 18.75 mg/kg/day. These included decreased red blood cell counts and increases in methaemoglobin, total serum lipids, triglycerides, and cholesterol. Trifluralin has been shown to cause liver and kidney damage in other studies of chronic oral exposure in animals.

Reproductive effects: The reproductive capacity of rats fed dietary concentrations of trifluralin as high as 10 mg/kg/day was unimpaired through four successive generations. Trifluralin administered to pregnant rabbits at doses as high as 100 mg/kg/day, and to rats at doses as high as 225 mg/kg/day, produced no adverse effect on either the mothers or offspring. Loss of appetite and weight loss followed by miscarriages were observed when pregnant rabbits were fed high doses of 224 or 500 mg/kg/day. Foetal weight decreased and there was an increase in the number of foetal runts at the 500 mg/kg/day dosage. It is unlikely effects on reproduction will be produced in humans at expected exposure levels.

Teratogenic effects: No abnormalities were observed the offspring of rats fed doses as high as 10 mg/kg/day for four generations. Studies in the rat and rabbit show no evidence that trifluralin is teratogenic. The highest doses tested in these studies were 1000 mg/kg/day in rats and 500 mg/kg/day in rabbits. Trifluralin does not appear to be teratogenic.

Mutagenic effects: No evidence of mutagenicity was observed when trifluralin was tested in live animals, and in assays using bacterial and mammalian cell cultures.

Carcinogenic effects: In a 2-year study of rats fed 325 mg/kg/day, the highest dose tested, malignant tumors developed in the kidneys, bladder, and thyroid. However, more data are needed to characterize its carcinogenicity. The ingredients are not listed as carcinogenic in Worksafe's document "Exposure Standards for Atmospheric Contaminants in the Occupational Environment" (May 1995).

Organ toxicity: Liver, kidney, and thyroid damage appear to be the main toxic effects in chronic animal studies

Acute Effects:

Pure trifluralin is practically nontoxic to test animals by oral, dermal, or inhalation routes of exposure. The oral LD₅₀ for technical trifluralin in rats is greater than 10,000 mg/kg, in mice is greater than 5000 mg/kg, and in dogs, rabbits, and chickens, is greater than 2000 mg/kg. However, certain formulated products that contain trifluralin may be more toxic than the technical material itself, as in the case of this product, where the main hazards are associated with the solvent. The dermal LD₅₀ for technical trifluralin in rabbits is greater than 2000 mg/kg. The 1-hour inhalation LC₅₀ for technical trifluralin in rats is greater than 2.8 mg/L. Nausea and severe gastrointestinal discomfort may occur after eating trifluralin. Trifluralin does not cause skin irritation. When applied to the eyes of rabbits, trifluralin produced slight irritation, which cleared within 7 days. Skin sensitization (allergies) may occur in some individuals. Inhalation may cause irritation of the lining of the mouth, throat, or lungs

First Aid

Ingestion:	If more than 15 minutes from a hospital, DO NOT induce vomiting. Seek medical advice (ph 131126).
Inhalation:	Move affected person to fresh air and keep at rest until recovered.
Skin Contact:	Remove contaminated clothing and wash affected skin thoroughly with soap and water
Eye Contact:	Hold eyes open, flood with water for at least 15 minutes. Seek medical advice
Advice to Doctor	Treat symptomatically. Contact a Poisons Information Centre.

Poisons Information Centre Phone 131126

III PRECAUTIONS FOR USE

Risk Phrases are: R22. Harmful if swallowed.

Exposure Standards:

A time weighted average (TWA) concentration for an 8 hour day, and 5 day week has not been established by Worksafe Australia for any of the major ingredients in this product. There is a blanket limit of 10mg/m³ for dusts or mists when limits have not otherwise been established. The nature of this product makes it unlikely that this level will be approached in normal use. The ADI (Acceptable Daily Intake) for Trifluralin is set at 0.02mg/kg/day. The corresponding NOEL (No-observable-effect-level) is set at 2.5mg/kg/day. Values taken from Australian ADI List, May 1995.

Engineering Controls:

In industrial situations, concentration values below the TWA value should be maintained. Values may be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify the process or environment to reduce the problem.

Personal Protection:

Respiratory Protection: It is usually safe to not use a dust mask or respirator protection on account of this product. However, if the product is being used in dusty or confined conditions, use of a mask or respirator may be preferred. For help in selecting suitable equipment, consult AS/NZS 1715.

Protective Gloves: Impermeable protective gloves should be worn when you are using this product, to prevent irritation. For help in selecting suitable equipment, consult AS 2161.

Eye Protection: Protective eyewear is suggested when using this product. It is always prudent to use protective eyewear. Consult AS1336 and AS/NZS 1337 for advice on Industrial Eye Protection.

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Clothing: Clean overalls or protective clothing should be worn, preferably with an apron. Consult AS2919 for advice on Industrial Clothing.

Safety Boots: Wearing safety boots in industrial situations is advisory. Consult AS/NZS2210 for advice on Occupational Protective Footwear.

Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

IV SAFE HANDLING INFORMATION

Safety Phrases are: S20. When using, do not eat or drink.

Storage & Transport

No special storage and transport requirements. This product has no UN classification. This product is a S5 Poison. Observe all relevant regulations regarding sale, transport and storage of this class of product. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames, and make sure that the product does not come into contact with substances listed under "Materials to avoid" below.

Spills & Disposals

In the event of a major spill, prevent spillage from entering drains or water courses. Immediately call the Fire Brigade. Wear full protective clothing including face mask, face shield and gauntlets. All skin areas should be covered. Thoroughly launder protective clothing before storage or re-use. See above under Personal Protection regarding Australian Standards relating to personal protective equipment. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Dispose of only in accord with all regulations. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Fire & Explosion Hazard

This product is classified as a C1 combustible product. There is a moderate risk of an explosion from this product if it is involved in a fire. Firefighters should take care and appropriate precautions.

Flashpoint: >63°C

Flammability limits: Not applicable. This product is not flammable.

Extinguishing Media: carbon dioxide, dry chemical, foam, water fog.

Special Fire Fighting procedures: If a significant quantity of this product is involved in a fire, call the fire brigade. Immediately evacuate the area of unnecessary personnel. When fighting fires involving significant quantities of this product, wear safety boots, non-flammable overalls, gloves, hat, goggles and respirator. All skin areas should be covered.

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Unusual Fire & Explosion Hazards: Fire decomposition products from this product may form toxic and corrosive mixtures in confined spaces. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

Stability: This product is unlikely to spontaneously decompose.

Polymerisation: This product is unlikely to spontaneously polymerise.

Decomposition Products: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen, and under some circumstances, oxides of nitrogen. Hydrogen fluoride gas and fluorides. Water.

Materials to avoid: strong oxidising agents. **Exposure Limits:** Store below 30°C
Keep away from heat and moisture

Ventilation: No special precautions required.

Personal Protection: Wear safety glasses when handling or during other activities where there is potential for eye contact. Wear full body clothing and impervious gloves to prevent skin contact. Remove contaminated clothing promptly. Launder clothing and wash protective equipment before re-use.

Flammability: Non-flammable, combustible.

FOR ADDITIONAL NON-EMERGENCY INFORMATION CALL

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NOTE: The physical data are typical values based on material tested but may vary between samples. Values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.