



MATERIAL SAFETY DATA SHEET

BIOTIS TRIFLURALIN 480 SELECTIVE HERBICIDE

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name	BIOTIS TRIFLURALIN 480 SELECTIVE HERBICIDE
Product Type	Group D Herbicide
Company Name	BIOTIS LIFE SCIENCE PTY LTD
Address	11 Norfolk Way, North Ryde, NSW 2113, Australia.
Telephone Number	02 9889 1995
Fax Number	02 9889 1998
Recommended Use	A pre-emergence herbicide for the control of annual grasses and certain broad leaf weeds in certain horticultural and agricultural crops as listed in the directions for use table.

2. HAZARDS IDENTIFICATION

Hazard Classification	Classified as hazardous according to the criteria of NOHSC Australia. Classified as dangerous goods according to the ADG code, see Section 14 for land transport exemption.
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. S23 Do not breath fumes or spray. S24 Avoid contact with skin.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS Number</u>	<u>Proportion</u>
Trifluralin	1582-09-8	480 g/L
Liquid hydrocarbon	64742-94-5	475 g/L
Other ingredients	-	Balance

4. FIRST AID MEASURES

Inhalation

Remove affected person to fresh air until recovered.

Skin Contact

Wash affected areas thoroughly with soap and water. If irritation persists, seek medical advice.

Eye Contact

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

Seek medical advice immediately.

Ingestion

If swallowed, do NOT induce vomiting; seek medical advice immediately and show this container or label or contact the Poisons Information Centre (Phone number: 13 112). Make every effort to prevent vomit from entering the lungs by careful placement of the patient.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Water fog, foam, carbon dioxide or dry chemical.

Hazardous from Combustion Products

If involved in a fire, it may emit hydrogen fluoride, oxides of nitrogen, fluorinated hydrocarbon.

Special Protective Equipment for Fire Fighters

Breathable air apparatus must be worn when fighting a fire in which this product is involved.

6. ACCIDENTAL RELEASE MEASURES

Spills and 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.

Dispose of at landfill in accordance with local regulations.

Environmental Precautions

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

7. HANDLING AND STORAGE

Handling

For personal protective equipment (PPE) and hygiene advice, refer Section 8.

Storage

Store in the closed original container in a cool, well-ventilated area out of direct sunlight.

Keep container tightly sealed and do not store with seed, fertilizers or foodstuffs.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards

No exposure standard has been established for this product or the active ingredients. However, the manufacturer of the solvent has recommended an occupational exposure limit of 100 mg/m³; 15ppm TWA, as total hydrocarbon.

Engineering Controls

Natural ventilation is sufficient when handling concentrate and preparing spray solution.

Personal Protective Equipment

When preparing product for use, wear elbow-length PVC gloves and face shield or goggles.

When using controlled droplet applicator, wear protective waterproof clothing and impervious footwear.

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

Appearance	Clear orange liquid
Odor	Odourless
Physical state	Liquid
pH (1% v/v)	5 ± 1
Solubility in Water	Emulsifiable in water
Specific gravity	1.10±0.1

10. STABILITY AND REACTIVITY

Stability	Stable for at least 2 years under normal conditions of warehouse storage.
Incompatible Material	Prolonged reaction with water can cause slow decomposition and the formation of acid which may attack drums. If open drum is to be stored, ensure that no water has been added to the drum.
Hazardous Reactions	Violent reactions between this product and oxidizing agents are possible.
Hazardous Polymerization	Hazardous polymerization is not possible.

11. TOXICOLOGICAL INFORMATION

Potential Health Effects:

No harmful effects are expected if the precautions on the label and this MSDS are followed.

Inhalation

No adverse effects anticipated by this route of exposure to trifluralin. When applying the product as a spray avoids breathing in spray mist. High vapour concentration of the solvent while handling the concentrate are irritating to eyes and the respiratory tract, may cause headaches and dizziness, can be anesthetic 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 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.

Skin

Prolonged contact with the concentrate may result in dermatitis.

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 sensitization.

Carcinogenicity

The weight of the evidence is that trifluralin is not carcinogenic.

Acute Toxicity-Oral : LD₅₀ (rat) : > 5000 mg/kg

Acute Toxicity-Dermal : LD₅₀ (rabbit) : > 5000 mg/kg. Non-irritating to skin (rabbits)

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, December 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.

Environment Protection

Marine Pollutant. Spray drift can cause damage, read the label for more information.

Acute Toxicity-Fish	LC ₅₀ (96 h) Young rainbow trout: 0.01-0.04 mg/L
	LC ₅₀ (96 h) Young bluegill sunfish: 0.02-0.09 mg/L
Acute Toxicity-Daphnia	EC ₅₀ (48 h) Daphnia: 0.56 mg/L
Acute Toxicity-Bird	LD ₅₀ (5 d) Bobwhite quail: > 5000 mg/kg
	LD ₅₀ (5 d) Mallard ducks: > 5000 mg/kg
Acute Toxicity-Bees	Not toxic to bees
	LD ₅₀ Bees: 0.011 mg/bees

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.

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.

Returnable containers: empty contents fully into application equipment. Replace cap, close all valves and return to the point of supply for the refill or storage. 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 root.

Empty containers and product should not be burnt.



14. TRANSPORT INFORMATION

Road and Rail Transport	Not dangerous goods under the ADG code when being transported in IBCs or other receptacles < 500L (special provision AU01)
UN Number (Sea Transport)	3082
IMO Class/Packing Group	Class 9; Packing Group III
IMO Marine Pollutant	Marine Pollutant
IMO Proper Shipping Name	Environmentally Hazardous Substance, Liquid, N.O.S. (CONTAINS trifuralin)

15. REGULATORY INFORMATION

Poisons Schedule	S5
Packaging and Labelling	CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING

16. OTHER INFORMATION

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user must review this information in the specific context of the intended application. BIOTIS LIFE SCIENCE PTY LTD. will not be responsible for damages of any nature resulting from use of or reliance upon this information.
