

MATERIAL SAFETY DATA SHEET

BIOTIS GLYPHOSATE 450 HERBICIDE

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

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| Product Name | BIOTIS GLYPHOSATE 450 HERBICIDE |
| Product Type | Group M 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 | For the control of annual and perennial weeds in certain situation as per the label. |

2. HAZARDS IDENTIFICATION

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| Hazard Classification | Classified as hazardous according to the criteria of NOHSC Australia Not classified as Dangerous Goods according to the ADG code |
| Risk Phrase(s) | R41 Risk of serious damage to eyes |
| Safety Phrase(s) | S13 Keep away from food, drink and animal feeding stuffs S2 Keep out of reach of children S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice S36/37/39 Wear suitable protective clothing, gloves and eye/face protection S46 If swallowed, seek medical advice immediately and show this container or label. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| <u>Ingredient</u> | <u>CAS Number</u> | <u>Proportion (%)</u> |
|---|-------------------|-----------------------|
| Glyphosate (present as the isopropylamine salt) | 38641-94-0 | 45%* |
| Other non hazardous ingredients | - | 10-20% |
| Water | 7732-18-5 | Balance |

* This concentration is for the active ingredient glyphosate

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 spray, foam, carbon dioxide or dry chemical.

Hazardous from Combustion Products

This product, or spray solutions of this product, react with galvanised steel or unlined steel (except stainless steel) containers and tanks, to produce hydrogen gas which may form a highly flammable or explosive gas mixture. If involved in a fire, could evolve oxides of nitrogen or phosphorus.

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.

Final clean-up with degreasing agent or detergent is advised.

Environmental Precautions

Prevent from entering drains, waterways or sewers.

7. HANDLING AND STORAGE

Handling

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

Storage and Transport

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.

Engineering Controls

No special ventilation required.

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

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|----------------------------------|-----------------------------|
| Appearance | Clear blue liquid |
| Odor | Odourless |
| pH(1% solution in water) | 5±1 |
| Boiling Point | Approx 100°C at 100 kPa |
| Flash Point | Not flammable |
| Specific Gravity | 1.19±0.01 |
| Solubility in Water | Completely soluble in water |
| Flammability | Non combustible material |

10. STABILITY AND REACTIVITY

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| Stability | Stable for at least 2 years under normal conditions of warehouse storage. |
| Incompatible Material | Corrosive to mild steel, galvanized steel and zinc. Non corrosive to stainless steel, polyethylene and plastics. Do not mix, store or apply the product or spray solutions of the product in galvanized steel or unlined steel (except stainless steel) containers or spray tanks. |
| Hazardous Reactions | Avoid contact of the concentrate with strong alkaline materials. Contact with alkaline material may release Isopropylamine vapour with a strong fish like odour, which in an irritant to eyes. Isopropylamine is moderately toxic, LD ₅₀ (oral, rat) is 820 mg/kg and a TLV of 5ppm (TWA) has been established. |
| Hazardous Polymerization | Hazardous polymerization is not possible |

11. TOXICOLOGICAL INFORMATION

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

Inhalation

When applying the product as a spray avoid breathing in spray mist.

May cause irritation to mucous membranes and respiratory tract.

Ingestion

The concentrate is of low toxicity if swallowed. Amounts swallowed incidental to normal handling procedures and use are not expected to cause injury. Possible symptoms of exposure include nausea, vomiting and gastrointestinal discomfort and diarrhea. Ingestion of a large quantity of the undiluted product may result in hypotension and pulmonary oedema.

Skin

The concentrated product may cause slight irritation on contact.

Prolonged contact is likely to result in irritation.

Eye

The concentrate may cause severe irritation of the eyes unless washed off immediately.

Prolonged contact with the concentrate may cause damage to the eye.

Chronic Effects

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Reproductive Toxicity

Data indicates no reproductive effects.

Carcinogenicity

Data indicates no carcinogenicity effects.

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

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

Acute Toxicity-Inhalation

LC₅₀ Inhalation : > 1.3 mg/L (4 hours)

Eye Irritation

The product is an eye irritant

Skin Irritation

The product is slight irritant

Skin Sensitisation

Product is not a skin sensitizer

Other Information

The Australian Acceptable Daily Intake (ADI) for glyphosate for a human is 0.3 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 30 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', December 2008)

12. ECOLOGICAL INFORMATION

Persistence/Biodegradability

Adsorption studies indicate that glyphosate has very low mobility. Average field half life of glyphosate is 47 days.

Environment Protection

Do not contaminate dams, waterways or sewers with this product.

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| Acute Toxicity-Fish | Not toxic to fish LC ₅₀ (96 h) Rainbow trout: >86 mg/L LC ₅₀ (96 h) Carp: >895 mg/L |
| Acute Toxicity-Daphnia | EC ₅₀ (48 h) Daphnia : >780 mg/L |
| Acute Toxicity-Bird | Not toxic to birds LD ₅₀ Mallard duck: >4640 mg/kg LD ₅₀ Bobwhite quail: >3850 mg/kg |
| Acute Toxicity-Bees | Not toxic to bees LD ₅₀ Bees: >0.1 mg/bee |

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

Considered non dangerous for transport by the Australian Code for the Transport of Dangerous Goods by Road and Rail.

15. REGULATORY INFORMATION

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| 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.
