

BOUND 200 SL

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: BOUND 200 SL
Other identifier: Glufosinate-ammonium 200 SL
Recommended use: Herbicide
Restrictions on use: Agriculture

Supplier: Villa Crop Protection (Pty) Ltd.
Co. Reg. No.: 1992/002474/07
 PO Box 10413
 Aston Manor, 1630, South Africa
Telephone: (011) 3962233
Fax: (011) 3964666
Website: www.villacrop.co.za

Emergency telephone numbers:

24 Hr Transport / Spill emergency no:

(Hazcall24) +27 86 044 4411

(Client: Villa Crop Protection)

Griffon Poison Information Centre +27 82 446 8946

(Client: Villa Crop Protection)

Poisoning Emergency telephone numbers:

Griffon Poison Information Centre +27 82 446 8946

Poisons Information Centre +27 861 555 777

2. HAZARDS IDENTIFICATION

UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP]
 EU & SANS 10234:2008

Hazard classes	Hazard categories	H-statements
Health		
Reproductive Toxicity	Reproductive Toxicity 1B	H360Fd
Specific Organ Toxicity, Repeat Exposure	Specific Organ Toxicity, Repeat Exposure 2	H373

The most important adverse effects:

Physiochemical effects: None known

Human health effects:

May cause damage to organs through prolonged or repeated exposure.

May damage fertility or the unborn child.

Label elements:



Signal word: Danger

Hazard statements:

H373: May cause damage to organs through prolonged or repeated exposure.

H360Fd: May damage fertility or the unborn child.

Precautionary statements:

P203: Obtain, read and follow all safety instructions before use.

P260: Do not breathe dust, fume, gas, mist, vapours and spray.

P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.

P318: IF exposed or concerned, get medical advice.

P319: Get medical help if you feel unwell.

P405: Store locked up.

P501: Dispose of content/container to suitable landfill in accordance with local regulations.

Other hazards:

None known.

Toxicity:

None known

Classification according to GHS: Unclassified

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture

Composition

Chemical name	CAS	Conc. (m/v %)	Classification EC 1272/2008
Glufosinate-ammonium (Tech 95%)	77182-82-2	20%	Acute Toxicity 4 (H302) Acute Toxicity 4 (H312) Acute Toxicity 4 (H332) Specific Organ Toxicity, Repeat Exposure (H373) Reproductive toxicity 1B (H360Fd)
Alkyl hydroxyl-poly (oxyethylene) sulfate salt	9004-82-4	<5%	Acute Toxicity 4 (H302) Eye Irritation 2 (H319)

4. FIRST AID MEASURES

Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure.

Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation occurs.

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Skin: Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Obtain medical attention if irritation persists.

Eyes: Flush eyes with clean water for at least 15 – 20 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. Seek medical attention.

Ingestion: Seek medical attention or call a poison control centre for treatment advice. Do not induce vomiting unless instructed to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person. If the person is alert, rinse mouth thoroughly with water.

Anticipated acute effects: None known.

Anticipated delayed effects: None known.

Most important symptoms / effects: Shivering, disturbance of consciousness, cramps, gastrointestinal complaints, hyperthermia, dyspnoea, bradycardia/tachycardia.

Advice to physician: No specific antidote. Treat symptomatically. Specific treatment: Gastric lavage – administer activated charcoal, sodium sulphate and endotracheal intubation.

Administer phenobarbital sodium 1 mg/kg intra-muscularly or subcutaneously up to 5 mg/kg per day. If required, administer 10 mg Diazepam slowly intravenously. Elimination by dialysis (forced alkaline diuresis) or haemodialysis, perfusion. If necessary, give oxygen.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Use carbon dioxide or dry chemical for small fires and water fog or foam for large fires.

Unsuitable Extinguishing Media: High volume water jet. Use a water jet only to cool heated containers.

Specific hazards: In a fire, irritant and toxic fumes containing oxides of carbon and nitrogen, hydrogen chloride, sulphur dioxide and other substances may be generated.

Special fire-fighting procedures: Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Remain upwind of fire. Avoid inhaling hazardous vapours and fumes from burning materials. Remove container from fire area if possible and without risk. Do not use high volume water jet, due to contamination risk. Do not scatter the burning material. Water can be used to cool unaffected containers but must be contained for later disposal. Contain fire control agents for later disposal.

Personal protective equipment: Wear NIOSH / MSHA approved self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid contact with eyes. Do not breathe in spray mist or dust. Ventilate area of spill or leak, especially in contained areas.

Protective equipment: Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.

Emergency procedures: Alert firefighting personnel, evacuate unprotected personnel and animals.

Environmental Precautions: Prevent spilled product from entering sewers, waterways or ground water.

Methods and Materials for Containment: Contain spilled product by diking area with sand or earth.

Methods and Materials for Clean-up: Cover contained spill with an inert absorbent material such as sand, vermiculite, earth or other appropriate material. Vacuum, scoop, or sweep up material and place the material into a clean, dry, sealable container. Label containers with the contents and dispose of according to local regulations. Do not place spilled material back in original container. Do not re-use spilled material. Collect washings and add to the drums already collected. Do not flush spilled material or washings into drains or waterways. To decontaminate the spill area, tools and equipment, wash with water and suitable detergent. See section 13 for disposal considerations.

7. HANDLING AND STORAGE

Handling:

Precautions for safe handling: Avoid contact with skin and eyes. Ensure adequate ventilation during handling and use. Do not handle broken packages without protective equipment. Immediately clean up spills that occur during handling. Keep containers closed when not in use. In the case of contact with the product refer to First Aid Measures – Section 4.

General occupational hygiene: Practice good hygiene when using this material. Wash hands before eating, drinking, chewing gum, smoking, using the toilet or applying cosmetics. Worker should shower at the end of each workday. Launder all clothing before it is re-used.

Storage:

Conditions for safe storage: Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original, labelled container, tightly closed in an isolated, dry, cool and well-ventilated area. Do not store near heat, open flame, sources of ignition or hot surfaces. Not to be stored next to foodstuffs, feed and water supplies. Avoid cross contamination with other pesticides and fertilisers.

Incompatible substances and mixtures: Refer to product label.

Packaging material: Plastic containers and PE line metal drums.

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8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration: No occupational exposure limits has been determined for the significant ingredients in this product.

Engineering Controls:

It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Local Exhaust: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OELs or other specified exposure limits. Local exhaust ventilation is preferred. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire and other applicable regulations.

Personal Protective Equipment:

Respiratory Protection: For most well-ventilated conditions, no respiratory protection should be needed. If used in a poorly ventilated area (airborne concentrations exceed exposure limits), use a NIOSH approved, air-purifying respirator with cartridges / canisters approved for organic vapours.

Hand Protection: The use of chemically protective gloves is recommended to prevent against skin contact.

Eye Protection: The use of chemical safety goggles is recommended to prevent against eye contact. Contact lenses are not protective eye devices.

Skin and Body Protection: Employees must wear appropriate protective clothing, boots, hat and equipment to prevent repeated or prolonged skin contact with this substance.

Emergency eyewash: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Blue to bluish-green liquid.

Odour: Weakly pungent odour.

pH (1% aqueous dilution): 4.8 to 7.0.

Melting point: Not available.

Freezing Point: Not available.

Boiling Point: Not available.

Flash Point: Not available.

Flammability: Not flammable.

Upper/lower explosion limits: Not explosive.

Vapour Pressure (mm Hg): Not available.

Relative Vapour Density: Not available.

Density: 1.070 to 1.090 g/cm³

Solubility: Soluble in water.

N-octanol/water partition coefficient: Not available.

Auto-ignition temperature: Not available.

Decomposition temperature: Not available.

Viscosity: Not available.

10. STABILITY AND REACTIVITY

Chemical Stability: The product is stable for 2 years at ambient temperature and pressure, under normal storage and handling conditions. Avoid storage under extreme temperatures and conditions. Store below 50°C, preferably below 30°C, and not for prolonged periods in direct sunlight.

Reactivity: None known.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Exposure to extreme heat and moisture.

Incompatible Materials: None known.

Hazardous Decomposition Products: Toxic oxides of carbon and nitrogen are released when the product decomposes on heating.

10. STABILITY AND REACTIVITY

Chemical stability: The product is stable for two years at ambient temperature and pressure, under normal storage and handling conditions. Avoid storage under extreme temperatures and conditions. Store below 50 °C, preferably below 30 °C, and not for prolonged periods in direct sunlight.

Reactivity: None known.

Possibility of hazardous reactions: Unlikely to occur.

Conditions to avoid: Extreme heat or exposure to flames.

Incompatible materials: Strong oxidizers, strong bases, strong reducing agents.

Hazardous decomposition products: Toxic oxides of carbon and nitrogen are released when the product decomposes on heating.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Calculated according to GHS

Oral LD₅₀ (24h) > 6803 mg/kg (rat)

Dermal LD₅₀ > 10000 mg/kg (rabbit)

Inhalation LC₅₀ (4h) > 13 mg/l (rat)

Skin Irritation / Corrosion: Not classified.

Eye Damage / Irritation: Not classified.

Skin Sensitization: Not classified.

Respiratory Sensitization: Not classified.

Reproductive cell mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive toxicity: May damage fertility or the unborn child.

Specific target organ toxicity – single exposure: Not classified.

Specific target organ toxicity – repeated exposure: May cause damage to organs through prolonged or repeated exposure.

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Aspiration hazard: Not classified.
Chronic Effects: Not classified.
POTENTIAL ADVERSE EFFECTS:
Inhalation: Not classified.
Ingestion: e.g. diarrhoea, vomiting and death.
Other information

12. ECOLOGICAL INFORMATION

This product is not expected to be harmful to aquatic organisms.

ECOTOXICITY DATA:

Active ingredient

Fish:

LC ₅₀ (96 h)	Rainbow trout	710 mg/ℓ
	Carp,	>1000 mg/ℓ
	bluegill sunfish,	
	golden orfe	

Daphnia:

LC ₅₀ (48 h)		668 mg/ℓ
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Algae:

E ₁ C ₅₀ (72 h)	<i>Pseudokirchneriella subcapitata</i>	>80 mg/ℓ
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Birds:

Dietary LC ₅₀ (8 d)	Japanese quail	>5000 mg/kg.
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Bees:

LD ₅₀		>100 µg/bee.
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Worms:

LC ₅₀ (14 d)	Earthworms	>1000 mg/kg soil.
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ENVIRONMENTAL EFFECTS (indicate if this is only for the active ingredient)

Based on information for the active ingredient

Animals: Rapidly excreted, predominantly via faeces (90%). The principal metabolite is 3-(methyl)phosphinoylpropionic acid. A further faecal metabolite is N-acetylglufosinate, formed by intestinal micro-organisms.

Plants: Non-selective use: only the metabolite, 3-(methyl)phosphinoylpropionic acid (3-MPP), is taken up in traces from the soil. Desiccation: most of the residues consist of parent glufosinate, with minor amounts of metabolite 3-MPP. Selective use: the principal metabolite is N-acetylglufosinate, with lesser amounts of parent and 3-MPP.

Persistence and degradability: Rapidly degraded in surface levels of soil, and in water.

Bio-accumulative potential: Because of polarity, it and its metabolites do not bioaccumulate. Metabolism in soil and water reviewed (E. Dorn et al., Z. Pflanzenkr. Pflanzenschutz, 1992, Sonderheft XIII, pp. 459–468). Degraded to 3-(methyl)phosphinoylpropionic acid and 2-

(methyl)phosphinoylpropionic acid, and ultimately to CO₂ and bound residues.

Mobility in soil: In soil, DT₅₀ 3–10 d (lab.), 7–20 d (field); DT₉₀ 10–30 d (lab.); DT₅₀ of metabolites 7–19 d (lab.). Adsorption is more correlated with clay content than organic matter.

Other adverse effects: Not determined

13. DISPOSAL CONSIDERATIONS

Waste: Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or re-processed. Never pour untreated waste or surplus product into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Comply with local legislation applying to waste disposal. The product may be taken to a registered waste disposal site or incineration plant.

Container: Emptied containers retain product residues. Do not re-use the empty container for any other purpose. Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank.

Puncture the triple rinsed container and dispose of via an approved collector or recycler (www.croplife.co.za). Do not bury, burn or donate the container to any other parties that may use it as a container for food or beverages. Observe all labelled safeguards until container is destroyed.

14. TRANSPORT INFORMATION

Not classed i.e. considered non-hazardous material according to UN Orange Book and international transport codes e.g. RID (rail) and IMDG (sea)

Special / Environmental Precautions: Wedge drums tightly to avoid movement.

Transport in bulk: Refer to MARPOL 73/78, Annex II and the IBC code.

15. REGULATORY INFORMATION

Safety, health and environmental regulations / legislation for the mixture:

OHSA 1993 Regulations for Hazardous Chemical Substances.

Relevant information regarding restrictions: None.

EU regulation: Regulation EC1272/2008 (EU-GHS/CLP)

Other national regulations: None.

Chemical Safety Assessment carried out? No

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16. OTHER INFORMATION

Packaging: Packed in 100, 150, 250, 500 millilitres and 1, 5, 10, 20, 25 and 50 litres plastic containers labelled according to South African regulations and guidelines.

Other hazard statements, abbreviations and explanations:

H302: Harmful if swallowed.

H312: Harmful in contact with skin.

H332: Harmful if inhaled.

H319: Causes serious eye irritation.

IATA: International Air Transport Association.

IBC: International Bulk Chemical.

ICAO: International Civil Aviation Organization.

IMDG: International Maritime Dangerous Goods

IMO: International Maritime Organization.

LD₅₀ value: The median lethal dose or the amount of a toxic agent that is sufficient to kill 50 percent of a population within a certain period of time.

OEL/RL: Occupational exposure limit-recommended limit.

TWA: Time-weighted average – The average exposure over a specified period, usually a nominal eight hours.

ST/STEL: Short-term exposure limits.

Disclaimer: The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed. All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

END OF DOCUMENT

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For detailed information on revisions, contact the Registration holder.