

Safety Data Sheet



Liberty® 200 Herbicide

Version 1 / AUS
102000031399

1/10
Revision Date: 05.10.2016
Print Date: 05.10.2016

SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Trade name Liberty® 200 Herbicide
Product code (UVP) 84442615

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use Herbicide

1.3 Details of the supplier of the safety data sheet

Supplier Bayer Cropscience Pty Ltd
ABN 87 000 226 022
Level 1, 8 Redfern Road
3123 Hawthorn East
Victoria
Australia

Telephone (03) 9248 6888

Telefax (03) 9248 6800

Responsible Department 1800 804 479 Technical Information Service

Website www.crop.bayer.com.au

1.4 Emergency telephone no.

Emergency telephone no. 1800 033 111 IXOM Operations Pty Ltd

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Australian GHS Regulation

Acute toxicity: Category 4
H302 Harmful if swallowed.

Acute toxicity: Category 4
H312 Harmful in contact with skin.

Eye irritation: Category 2A
H319 Causes serious eye irritation.

Reproductive toxicity: Category 1B
H360F May damage fertility.

Reproductive toxicity: Category 2
H361d Suspected of damaging the unborn child.

Specific target organ toxicity - repeated exposure: Category 2
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

2.2 Label elements

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

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Glufosinate ammonium

Signal word: Danger

Hazard statements

- H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H319 Causes serious eye irritation.
H360F May damage fertility.
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

Precautionary statements

- P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
P330 Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of water/ soap.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P312 Call a POISON CENTER/doctor/physician if you feel unwell.
P305 + P351 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
+ P338
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local regulation.

2.3 Other hazards

No other hazards known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

Glufosinate-ammonium 200g/l

Chemical nature Soluble concentrate (SL)

Chemical Name	CAS-No.	Concentration [%]
Glufosinate ammonium	77182-82-2	18.02
1-Methoxy-2-propanol	107-98-2	>= 1.00 - <= 10.00
Other ingredients (non-hazardous) to 100%		

SECTION 4. FIRST AID MEASURES



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If poisoning occurs, immediately contact a doctor or Poisons Information Centre (telephone 13 11 26), and follow the advice given. Show this Safety Data Sheet to the doctor.

4.1 Description of first aid measures

Inhalation	Move to fresh air. Keep patient warm and at rest. If symptoms persist, call a physician.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.
Eye contact	Wash off immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Keep at rest. Rinse mouth. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	Vomiting, Diarrhoea, Abdominal pain, Tremors, Hypotension, Muscular weakness, Unconsciousness, Coma, Convulsions, Respiratory failure, Nausea, Tachycardia. Symptoms may be delayed.
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4.3 Indication of any immediate medical attention and special treatment needed

Treatment	In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. Forced alkaline diuresis and hemodialysis may be considered. There is no specific antidote. In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. If not effective, phenobarbital may be used. Contraindication: atropine. Oxygen or artificial respiration if needed. Keep respiratory tract clear. ECG - monitoring (Electrocardiogram). EEG - monitoring (Electroencephalogram). Monitor: respiratory, cardiac and central nervous system. Keep under medical supervision for at least 48 hours.
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SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable	Water spray, Foam, Carbon dioxide (CO ₂), Dry powder
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5.2 Special hazards arising from the substance or mixture	In the event of fire the following may be released: Carbon monoxide (CO), Carbon dioxide (CO ₂), Nitrogen oxides (NO _x), Oxides of phosphorus, Sulphur oxides
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5.3 Advice for firefighters

Special protective equipment for firefighters	In the event of fire, wear self-contained breathing apparatus.
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Further information Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth. Do not allow run-off from fire fighting to enter drains or water courses.

Hazchem Code Not applicable

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions Use personal protective equipment.

6.2 Environmental precautions Do not allow to get into surface water, drains and ground water. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling Use only in area provided with appropriate exhaust ventilation.

Hygiene measures When using, do not eat, drink or smoke. Handle in accordance with good industrial hygiene and safety practice. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Remove soiled clothing immediately and clean thoroughly before using again.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Protect from freezing.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Glufosinate ammonium	77182-82-2	0.9 mg/m ³		OES BCS*



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		(TWA)		
1-Methoxy-2-propanol	107-98-2	369 mg/m ³ /100 ppm (TWA)	12 2011	AU NOEL
1-Methoxy-2-propanol	107-98-2	553 mg/m ³ /150 ppm (STEL)	12 2011	AU NOEL

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

8.2 Exposure controls

Respiratory protection Respiratory protection is not required under anticipated circumstances of exposure.
Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection Wear CE Marked (or equivalent) nitrile rubber gloves (minimum thickness of 0,4 mm). Wash when contaminated and dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Eye protection Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection Wear standard coveralls and Category 3 Type 6 suit.
Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.
If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

General protective measures In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the above mentioned recommendations would apply.

Engineering Controls

Advice on safe handling Use only in area provided with appropriate exhaust ventilation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form Liquid
Colour blue to blue green
Odour weakly pungent
pH 5.9 - 7.9 at 100 % (23 °C)
Flash point ca.60 °C
The product does not sustain combustion.
Upper explosion limit No data available



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Lower explosion limit	No data available
Vapour pressure	No data available
Relative vapour density	No data available
Density	ca. 1.11 g/cm ³ at 20 °C
Partition coefficient: n-octanol/water	No data available
Partition coefficient: n-octanol/water	Glufosinate-ammonium: log Pow: -4.01 at pH 7
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

Thermal decomposition Stable under normal conditions.

10.2 Chemical stability Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions No hazardous reactions when stored and handled according to prescribed instructions.

10.4 Conditions to avoid Heat, flames and sparks.

10.5 Incompatible materials Strong oxidizing agents, Acids, Bases, Alkali metals

10.6 Hazardous decomposition products Thermal decomposition can lead to release of:
Ammonia
Oxides of carbon
Nitrogen oxides (NO_x)
Oxides of phosphorus
Sulphur oxides

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity LD50 (Rat) 1,910 mg/kg

Acute inhalation toxicity LC50 (Rat) 3.22 mg/l
Exposure time: 4 h

Acute dermal toxicity LD50 (Rat) 1,380 mg/kg

Skin irritation Slight irritation (Rabbit)

Eye irritation Moderate eye irritation (Rabbit)

Sensitisation Non-sensitizing (Guinea pig)

Assessment mutagenicity

Glufosinate-ammonium was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.



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Assessment carcinogenicity

Glufosinate-ammonium was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Implantation loss occurred in a rat multigeneration study with Glufosinate-ammonium. There were no effects on male fertility.

Assessment developmental toxicity

Glufosinate-ammonium caused developmental toxicity only at dose levels toxic to the dams. Glufosinate-ammonium caused an increased incidence of post implantation losses.

Assessment STOT Specific target organ toxicity – repeated exposure

Glufosinate-ammonium caused neurobehavioral effects and/or neuropathological changes in animal studies. Glufosinate-ammonium was well tolerated in rats and mice but less well tolerated in the dog in subchronic studies.

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure

Harmful if inhaled.
Harmful if absorbed through skin. Irritating to skin.
Causes eye irritation.
Harmful if swallowed.

Early onset symptoms related to exposure

Refer to Section 4

Delayed health effects from exposure

Refer to Section 11

Exposure levels and health effects

Refer to Section 4

Interactive effects

Not known

When specific chemical data is not available

Not applicable

Mixture of chemicals

Refer to Section 2.1

Further information

No further toxicological information is available.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)) 34 mg/l
Exposure time: 96 h



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	Test conducted with a similar formulation.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 26.8 Exposure time: 48 h Test conducted with a similar formulation.
Toxicity to aquatic plants	(Raphidocelis subcapitata (freshwater green alga)) 37 mg/l The value mentioned relates to the active ingredient glufosinate-ammonium. (Desmodium subspicatus (green algae)) 36 mg/l Exposure time: 72 h Test conducted with a similar formulation.
Toxicity to other organisms	LC50 (Coturnix japonica (Japanese quail)) > 5,000 mg/kg Exposure time: 8 d The value mentioned relates to the active ingredient glufosinate-ammonium.
12.2 Persistence and degradability	
Biodegradability	Glufosinate-ammonium: Not rapidly biodegradable
Koc	Glufosinate-ammonium: Koc: 2.3
12.3 Bioaccumulative potential	
Bioaccumulation	Glufosinate-ammonium: Bioconcentration factor (BCF) < 1 Does not bioaccumulate.
12.4 Mobility in soil	
Mobility in soil	Glufosinate-ammonium: Highly mobile in soils
12.5 Other adverse effects	
Additional ecological information	No other effects to be mentioned.

SECTION 13. DISPOSAL CONSIDERATIONS

Refillable containers:

If tamper evident seals are broken prior to initial use then the integrity of the contents cannot be assured. Empty container by pumping through dry-break connection system. Do not attempt to breach the valve system or the filling point, or contaminate the container with water or other products. Ensure that the coupler, pump, meter and hoses are disconnected, triple rinsed and drained after each use. When empty, or contents no longer required, return the container to the point of purchase. This container remains the property of Bayer CropScience Pty Ltd.

Metal drums and plastic containers:

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

Do not reuse container for any other purpose.



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SECTION 14. TRANSPORT INFORMATION

According to national and international transport regulations not classified as dangerous goods.

SECTION 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994
Australian Pesticides and Veterinary Medicines Authority approval number: 61965

SUSMP classification (Poison Schedule)

Schedule 5 (Standard for the Uniform Scheduling of Medicines and Poisons)

SECTION 16. OTHER INFORMATION

Trademark information Liberty® is a Registered Trademark of the Bayer Group.

This SDS 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 should read this SDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
AU OEL	Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)
CAS-Nr.	Chemical Abstracts Service number
CEILING	Ceiling Limit Value
Conc.	Concentration
EC-No.	European community number
ECx	Effective concentration to x %
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
EN	European Standard
EU	European Union
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx	Inhibition concentration to x %
IMDG	International Maritime Dangerous Goods

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LCx	Lethal concentration to x %
LDx	Lethal dose to x %
LOEC/LOEL	Lowest observed effect concentration/level
MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level
OECD	Organization for Economic Co-operation and Development
OES BCS	OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"
PEAK	PEAK: Exposure Standard - Peak means a maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time which does not exceed 15 minutes.
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SK-SEN	Skin sensitiser
SKIN_DES	SKIN_DES: Skin notation: Absorption through the skin may be a significant source of exposure.
STEL	STEL: Exposure standard - short term exposure limit (STEL): A 15 minute TWA exposure which should not be exceeded at any time during a working day even if the eight-hour TWA average is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL.
TWA	TWA: Exposure standard - time-weighted average (TWA): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

END OF SDS