SAFETY DATA SHEET

GA200

1. PRODUCT & COMPANY IDENTIFICATION

Product Identification/Name:	GA200
Alternative Name:	200g/litre glufosinate-ammonium in the form of a soluble liquid concentrate
Product Use:	Herbicide
Company Identification:	Rainbow & Brown Limited 68A Tallyho Street, Rotorua, New Zealand PO Box 10049, Mail Centre, Rotorua, 3046
Telephone:	+64 7 350 2009
Toll-Free Phone:	0508 299 299
After Hours Emergency	+64 27 498 2574
National Poisons Centre	0800 764 766
CHEMCALL Emergency Response	0800 CHEMCALL (0800 243 622) 24,7 365 days a year
Website:	www.rainbowbrown.co.nz
Date of Issue:	17 January 2019
Latest Revision Date:	24 December 2024 – Version 2.1
Expiry Date:	24 December 2029

2. HAZARD IDENTIFICATION

This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2020.

EPA Approval No:	HSR007813
Pictograms:	
Signal Word:	**DANGER**

GHS Classification & Category	HSNO Classification	Hazard Code	Hazard Statement
Eye Irritation, Category 2	6.4A	H319	Causes serious eye irritation
Reproductive Toxicity Category 2	6.8B	H361	Suspected of damaging fertility or the unborn child

Specific Target Organ Toxicity (Repeated Exposure), Category 1	6.9A	H372	Causes damage to organs from repeated oral exposure at high doses.
Aquatic Toxicity (chronic), Category 3	9.1C	H412	Harmful to aquatic life with long lasting effects
Hazardous to soil organisms	9.2B	H422	Toxic to the soil environment
Hazardous to terrestrial vertebrates	9.3C	H433	Harmful to terrestrial vertebrates

Prevention Code	Prevention Statement
P103	Read label before use.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe mist/vapours/spray.
P264	Wash hands, exposed skin, thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear eye protection/face protection.
P281	Use personal protective equipment as required.

Response Code	Response Statement
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P308 + P313	If exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.
P391	Collect spillage.

Storage Code	Storage Statement
P405	Store locked up

Disposal Code	Disposal Statement
P501	In accordance with the EPA Hazardous Substances (Disposal) Notice 2017. Refer to Section 13 of this SDS.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Concentration (%w/w)
Glufosinate-ammonium	77182-82-2	18.3%
Ingredients not contributing to hazard		Up to 100%

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non-hazardous ingredients are also possible.

4. FIRST-AID MEASURES

Eye Contact:	Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15 minutes while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Remove contact lenses after first 5 minutes if present and easy to do, the continue rinsing. Get medical advice/assistance if irritation persists.
Skin:	Remove contaminated clothing. Wash gently and thoroughly with plenty of water (use non-abrasive soap if necessary). Do not scrub the skin. Get medical advice/attention if irritation occurs. Wash contaminated clothing before re-use.
Ingestion:	If swallowed, do NOT induce vomiting. Rinse mouth with water. Contact a Poisons Information Centre or call a doctor.
Inhalation:	No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air, and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.
General:	Call the National Poisons Centre (0800 POISON, 0800 764 766) for advice if you feel unwell or have been exposed and are concerned. Have product label or SDS at hand.
Advice to Doctor:	Most Important Symptoms and Effects, both acute and delayed: Vomiting, Diarrhoea, Abdominal pain, Tremors, Hypotension, muscular weakness, Unconsciousness, Coma, Convulsions, Respiratory failure, Nausea, Tachycardia Symptoms may be delayed. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. 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. Forced alkaline diuresis and haemodialysis 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.

5. FIRE-FIGHTING MEASURES

Flammable Limits:	Not flammable
Extinguishing Media:	Water spray, dry chemical, alcohol resistant foam, CO_2
Fire & Explosion Hazards:	Not a fire or explosion hazard. Toxic fumes and irritating vapours may be formed during a fire. Containers may explode at very high temperatures due to pressure build-up.
Fire Fighting Equipment:	Wear personal protection equipment include SCBA.
Fire Fighting Instructions:	Do not allow runoff into drains.
Hazchem Code:	3Z

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Clear area of all unprotected personnel. Keep people upwind of fire. Use appropriate protective clothing and equipment.
Spills:	In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including eye/face protection. All skin areas should be covered. Refer to Section 8 for personal protective equipment. If vapours or mists are likely to build up in the clean-up area, we recommend using a respirator. Usually, no respirator is necessary when using this product. Stop leak if safe to do so and contain spill. Collect liquid spills. Absorb small spills and residues with sand, vermiculite, or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect contaminated solids into labelled containers for recycling or salvage and dispose of promptly. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Ensure legality of disposal by consulting regulations prior to disposal.

7. HANDLING AND STORAGE

Handling:	Read label before use. Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label. Refer to Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling to minimise risks to persons using the product in the workplace.

	Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.
Storage:	Store locked up. Keep out of reach of children. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Keep away from food and feedstuffs. Store in accordance with the current version of NZS8409 Management of Agrichemicals. Storage of 1,000L or more requires signage, secondary containment and an emergency response plan.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure Guidelines:

Ingredient	CAS Number	TWA (mg/m^3)	STEL (mg/m^3)
Glufosinate-ammonium	77182-82-2	Not set	Not set

WorkSafe's 13th edition of WES and BEI values, published April 2022.

The WES TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5-day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Engineering Controls:	Use in a well-ventilated area.
Personal Protection:	
Respiratory Protection:	Use an approved organic vapour respirator if there is a risk of inhaling mist/vapours/spray.
Skin Protection:	Wear protective clothing such as impervious gloves, waterproof hat, coat, and trousers when using. Use impervious elbow-length gloves and facial protection when handling this product. See below for suitable material types. Protective clothing be made from the following materials: rubber, PVC. Refer to Standard AS 2161, AS2919 and AS.NZ2210.
Eye Protection:	Protective glasses or goggles should be worn when this product is being used. Emergency eye wash facilities are also recommended in an area close to where this product is being used. Refer to standard AS.NZ1337.
Dust:	N/A
General advice:	Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used. Do not eat, drink or smoke while using. Wash hands and exposed skin thoroughly with soap and water before meals and after work. Wash protective clothing daily after work. Launder contaminated clothing separately from household laundry.

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance:	Blue-green liquid
Odour:	Weakly pungent
Odour Threshold:	Not determined
pH:	5.0-7.5
Boiling Point:	Not available
Melting Point:	Not available
Freezing Point:	Not available
Flash Point:	Not flammable
Flammability:	Not flammable or combustible
Upper/Lower Flammability or Exposure Limits:	Not applicable
Vapour Pressure:	Not available
Density:	1.07-1.10 g/cm^3 at 20°C
Water Solubility:	Soluble in water
Partition Coefficient:	Not available
Auto-ignition Temperature:	Not determined
Decomposition Temperature:	Not available
Kinematic Viscosity:	Not available
Particle Characteristics:	Property does not apply

10. STABILITY & REACTIVITY

Stability:	Stable under normal conditions.
Reactivity:	This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf-life.
Conditions to Avoid:	No special requirements.
Incompatibility:	Avoid strong oxidisers, strong acids and strong alkalis. Ammonia may be produced on contact with strong alkalis.
Hazardous Decomposition Products:	Oxides of carbon, phosphorus, sulphur and nitrogen may be formed during a fire. Ammonia may be formed in abnormal use conditions if product is mixed with strong alkalis.
Hazardous Polymerisation:	This product will not undergo polymerisation reactions.

11. TOXOLOGICAL INFORMATION

ACUTE EFFECTS:	
Oral Toxicity:	LD_{50} (rat) = 5000 mg/kg
Dermal Toxicity:	LD_{50} (rat): >2,000 mg/kg
Inhalation Toxicity:	LC_{50} > 2.751 mg/L, Exposure time: 4h
Eye Corrosion/Irritation:	Non irritation (rabbit)
Skin Corrosion/Irritation:	Non irritation (rabbit)
CHRONIC EFFECTS:	
Carcinogenicity:	Product is not classified for carcinogenicity.
Reproductive Toxicity:	Suspected human reproductive and developmental toxicant from repeated oral exposure.
Germ Cell Mutagenicity:	Product is not classified for mutagenicity.
Aspiration:	Product is not classified for Aspiration.
STOT/SE:	Product is not classified for Single Exposure STOT
STOT/RE:	Causes damage to human target organs or systems (kidney) via ingestion through prolonged or repeated exposure.

12. ECOLOGICAL INFORMATION

Ecotoxicity (aquatic & terrestrial)	Harmful to aquatic life with long lasting effects. Avoid losses to the environment wherever possible.
Persistence & Degradability	Product is persistent.
Ecotoxicity Information	Toxicity to fish: Rainbow trout LC50 (96 h) =710 mg/L Toxicity to aquatic invertebrates: Daphnia magna LC50(48h) =668mg/L Toxicity to aquatic plants: Algae EC50(96 h) = 46.5 mg/L Toxicity to other organisms: Bobwhite Qual LD50 > 2000 mg/kg; Bees Acute contact LD50 (48 hours) > 345 µg/bee; Acute oral LD50 (48 hours) > 600 µg/bee; Earthworms LC50 (14d) >1000 mg/kg.
Bioaccumulation	Readily biodegradable. This substance/mixture contains no components considered to be either persistent, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher.
Soil Toxicity	Ecotoxic in the soil environment. Soil DT_{50} = 7.4d
Terrestrial Vertebrates	Harmful to terrestrial vertebrates.
Terrestrial invertebrates	Not expected to be ecotoxic to terrestrial invertebrates.
Mobility	Moderate to high mobile (kf = 0.2 – 3.4)

13. DISPOSAL CONSIDERATIONS

Disposal Method:	Triple rinse container and add rinsate to the spray tank where practical to do so. Dispose of product only by using in accordance with label directions, or through Agrecovery Chemical Recovery Service or alternative approved programs.
Container Disposal:	Triple rinse empty container and add rinsate to spray tank. Do not burn containers. Crush or puncture and bury in a suitably approved landfill or through Agrecovery recycling service.

14. TRANSPORT INFORMATION

Dangerous Goods Classification:	Not classified as a Dangerous Good for transport in accordance with NZS5433:2012, IMDG or IATA.
Shipping Name:	Environmentally hazardous substance, liquid, N.O.S. (GLUFOSINATEAMMONIUM)
Class:	9
UN Number:	3082
Packaging group:	III
Passenger Service Vehicle	Do not carry this product on a passenger service vehicle

15. REGULATORY INFORMATION

All of the significant ingredients in this formulation are compliant with NICNAS regulations.

ACVM Act 1997 Registration No:	P009422
HSNO Approval No:	HSR007813
Substance description:	Water soluble concentrate containing 200g/L glufosinate-ammonium
Certified Handler:	Not required
Qualified Handler:	Required if applied in a wide dispersive manner or used by a commercial contractor.
Tracking:	Not required
Compliance Certificate:	Not required
Quantity that must be secured:	Not required
Location Certificate	Not required

Emergency Response Plan:	1,000L
Secondary Containment:	1,000L
Signage:	1,000L
Record-keeping:	Not required
Training requirements:	All workplace personnel handling this substance are required to be trained on the safe handling and PPE requirements for the hazards associated with this substance in accordance with Clause 4.5 of the Health and Safety at Work (Hazardous Substances) Regulations 2017. In addition, any person preparing the product for application or applying the product must be a qualified loader, contractor, or person as applicable. Refer to EPA Hazardous Substances (Hazardous Property Controls) Notice 2017 Part 4, Subpart C.
Other regulatory requirements:	Refer to www.epa.govt.nz for HSR007813 controls and Hazardous Substances Property Controls) Notice 2017.

16. OTHER INFORMATION

Glossary	
AEL	Acceptable Exposure Limit
DT_{50}	Time (days) for 50% loss
EC_{50}	Median effective concentration
EEL	Environmental Exposure Limit
EPA	Environment Protection Authority
GHS	Globally Harmonised System
HSNO	Hazardous Substances & New Organisms Act
Koc	Organic carbon partition coefficient
LFL	Lower Flammability Limit
LC_{50}	Lethal Concentration in air or water for 50% of test organisms
LD_{50}	Lethal Dose for 50% of test organisms
NOEL	No Observable Effect Level
OSHA	Occupational Safety & Health Administration (USA)
OSH or WorkSafe	WorkSafe New Zealand
PEL	Permissible Exposure Level
Pow	Octanol water partition coefficient (ratio of concentration of a chemical in octanol and water at equilibrium and at a specified temp.)
pH	Measure of acidity/alkalinity of a substance on a 1-14 scale (1=strong acid, 14 = strongly alkali)

STEL	Short Term Exposure Limit
TEL	Tolerable Exposure Limit
TLV	Threshold Limit Value – an exposure limit set by a competent authority
TWA	Time Weighted Average – average concentration of a chemical in air over a total exposure time (usually 8 hours)
UFL	Upper Flammability Limit
WES	Workplace Exposure Standard – set by WorkSafe NZ

The data in this Safety Data Sheet relates only to this product alone, and not to its use in combination with other substances or products. In such circumstances, assuming the combination is permitted (refer to product labels, and contact manufacturer if in doubt), be guided by the most hazardous of the substances involved and observe the more stringent of all hazard controls applicable to the products used.

Date of Safety Data Sheet: 24 December 2024
Reason for Revision: 5-yearly review

Further Information: Rainbow & Brown Limited
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