SAFETY DATA SHEET

Rainbow & Brown Glyphosate 360

1. PRODUCT & COMPANY IDENTIFICATION

Product Identification/Name:	Rainbow & Brown Glyphosate 360
Alternative Name:	Contains 360g/litre glyphosate as the isopropylamine salt in the form of a soluble 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 24,7 365 days a year
Website:	www.rainbowbrown.co.nz
Date of Issue:	26 November 2018 – Version 1.0
Latest Revision Date:	8 October 2024 – Version 2.0

2. HAZARD IDENTIFICATION

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

EPA Approval No:	HSR101102
Pictograms:	
Signal Word:	No Signal word

GHS Classification & Category	HSNO Classification	Hazard Code	Hazard Statement
Aquatic toxicity (chronic) Category 2	9.1B	H411	Toxic to aquatic life with long lasting effects.

Prevention Code	Prevention Statement
P103	Read label before use

P273	Avoid release to the environment.

Response Code	Response Statement
P391	Collect spillage.

Storage Code	Storage Statement
-	-

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

Other	Do not apply directly into or onto water

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Concentration (%w/w)
Glyphosate	38641-94-0	360

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.

5. FIRE-FIGHTING MEASURES

Flash Point:	> 200 F – tag closed cup
Extinguishing Media:	Water spray, foam, dry chemical, CO_2. Use extinguishing media suited to surrounding materials.
Fire & Explosion Hazards:	There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
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 to use 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

Label:	Must be under the control of a suitably qualified handler when being applied into or onto water and the water has the potential to leave the place containing the application area.
Handling:	Read label before use.

	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:	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 100L 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)
Glyphosate	38641-94-0	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:	No special engineering controls or ventilation requirements are normally necessary for this product. However, make sure that the work environment remains clean, and that vapours and spray mists are minimised.
Personal Protection:	
Respiratory Protection:	Usually, no respirator is necessary when using this product. However, if you have any doubts refer to standard AS/NZ 1715 for appropriate equipment.
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:	Liquid
Odour:	Odorless
Odour Threshold:	No data available
pH:	4.5 – 6.5
Boiling Point:	112°C
Melting Point:	No data available
Freezing Point:	No data available
Flash Point:	Not applicable
Flammability:	No data available
Upper/Lower Flammability or Exposure Limits:	Not applicable
Vapour Pressure:	No data available
Vapour Density:	1.16 – 1.17 g/cm^3 Reference temperature 20°C
Specific Gravity:	Not available
Water Solubility:	Soluble
Partition Coefficient:	No data available
Auto-ignition Temperature:	Not applicable
Decomposition Temperature:	No data available
Kinematic Viscosity:	No data 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:	Exposure to heat, direct sunlight.
Incompatibility:	Spray solutions of this product should be mixed, and stored, or applied using only stainless steel, aluminium, fiberglass, plastic or plastic-lined containers. Do not mix, store or apply this product or spray solutions of this product in galvanized or unlined steel (except stainless steel) containers or spray tank. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.
Hazardous Decomposition Products:	No data available
Hazardous Polymerisation:	Do not occur, this product can react with caustic (basic materials to liberate heat). This is not a polymerization but rather a chemical neutralisation in an acid base reaction.

11. TOXOLOGICAL INFORMATION

Acute toxicity	Inhalation (4 H): Slightly toxic LC50=5.23 mg/l (rat) Eye irritation: Non- irritating Skin irritation: Non-irritating (rabbit-4-hour exposure) Skin absorption: practically non-toxic(rabbit LD50>5000mg/kg) Oral: slightly toxic to practically non-toxic (rat LD50; 5000mg/kg, Mouse LD50>5000mg/kg)
Skin corrosion/irritation:	Non-irritating
Eye damage/irritation:	Non-irritating
Respiratory/skin sensitisation:	Non-irritating
Mutagenicity:	No data available
Carcinogenicity:	No data available
Reproductive Toxicity:	No data available
Specific Target Organ Toxicity:	No data available
Aspiration hazard:	No data available
Toxicological data:	As above

12. ECOLOGICAL INFORMATION

Ecotoxicity (aquatic and terrestrial):	Product is very toxic in the aquatic environment and with long-lasting effects.
Persistence and degradability:	No data available
Bioaccumulative:	No evidence to suggest bioaccumulation
Mobility in soil:	No data available
Other adverse effects:	This substance must not be applied at rates exceeding 20 L/ha (equivalent to 7.2 kg glyphosate/ha). Prevent spray drift as it may cause severe damage to non-target plants.
Ecotoxicological data:	Oral LD_{50} dog: >5.0 ml/kg (practically non-toxic) Oral LD_{50} goat: 4660mg/kg (slight toxic) 48-hour oral LD_{50} honeybee: >100ug/bee 48-hour Dermal LD_{50} honeybee: > 100ug/bee 48-hour EC_{50} daphnia magna (with areation): 37 mg/l (slightly toxic) 48-hour EC50 daphnia magna (with areation): 24 mg/l (slightly toxic) 48-hour EC50 gammarus pseudolimnaeus: 42 mg/l (slightly toxic) 96-hour TL50 Carp: 19.7 ppm (slightly toxic) 96-hour LC50 Crayfish >1000ppm (practically non-toxic) 96-hour LC50 Rainbow Trout(Satict): 15.26mg/l (slightly toxic) 96-hour LC50 Rainbow Trout (Flow-through): 8.2mg/l (slightly toxic) 96-hour LC50 Bluegill sunfish (Static): 14mg/l (slightly toxic) 96-hour LC50 Channel Catfish: 16mg/l (slightly toxic) 96-hour LC50 Coho salmon: 22mg/l (slightly toxic) 96-hour LC50 Chinook salmon: 20mg/l (slightly toxic) Carp contained in a static pond were unaffected at any time during a 90-day observation period following exposure by aerial application of this material at the normal use concentration. Tissue residue analysis indicated glyphosate, the active ingredient in this material will not bioaccumulate. Exposure to this material in fresh water at concentration of 0, 10, 103 and 990 ug/l for 10 days did not impair the ability of salmon smolts to adapt to seawater. Immersion of chicken eggs at four different embryo ages (0, 6, 12 and 18 days) for about five seconds in 1 or 5% vol/vol material in water solutions was reported to have no adverse effects on the hatchability or time to hatch of the eggs. Brahman-cross heifers were given this material by gavage, at daily dosage of 0, 400, 500, 630, 790, and 1000mg/kg for 7 consecutive days. Clinical signs of toxicity, including loss of appetite, diarrhea, and death (790 and 1000 mg/kg) were observed at 500mg/kg or above. The no-effect level level was considered to be 400 mg/kg/day.

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

This product is classified as a Dangerous Good for transport in NZ; NZS 5433:2012

Dangerous Goods Classification:	3082
Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Glyphosate)
Class:	9
UN Number:	3082
Packaging group:	III
Hazchem Code	3Z
Marine Pollutant:	Yes
IER Guide	No. 47
IMDG EMS	F-A, S-F

15. REGULATORY INFORMATION

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

ACVM Act 1997 Registration No:	P5441
HSNO Approval No:	HSR101102
Substance description:	Contains 360g/litre glyphosate as the isopropylamine salt in the form of a soluble concentrate
Certified Handler:	Not required
Qualified Handler:	Required when being applied into or onto water and the water has the potential to leave the place containing the application area.
Tracking:	Not required
Compliance Certificate:	Not required

Quantity that must be secured:	Not required
Location Certificate	Not required
Emergency Response Plan:	1000L
Secondary Containment:	1000L
Signage:	1000L
Fire Extinguishers:	No fire extinguisher requirement specified.
Record-keeping :	Records of use as described in the NZS 8049 Management of Agrichemicals must be kept.
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:	Do not allow spray drift over aquatic environments. Avoid contact with foliage or green stems of fruit crops, desirable plants and trees. Prevent spray drift as it may cause serious damage to non-target plants. Aerial application is recommended in non-crop areas only. Avoid contamination of any water supply with chemical or empty containers.

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: 8 October 2024
Reason for Revision: Full Review and update to meet the new regulatory requirements
Revision 1.0 –26 November 2018 - Issue SDS
Revision 1.1 – 1 August 2023 - 5 yearly update
Revision 2.0 – 8 October 2024 - Full review and update to meet the new regulatory requirements.

Further Information: Rainbow & Brown Limited
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