

1. PRODUCT & COMPANY IDENTIFICATION

Product Identification/Name	Halox 100 EC
Alternative Name	100g/L haloxyfop-P present as the methyl ester in the form of an emulsifiable concentrate. Also contains 467g/L hydrocarbon solvent.
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	21 June 2021 – Version 1.0
Latest Revision Date	28 March 2025 – Version 2.0
Expiry Date	28 March 2030

2. HAZARD IDENTIFICATION

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

HSNO Approval No	HSR008025
Pictograms	
Signal Word	DANGER

GHS Classification & Category	HSNO Classification	Hazard Code	Hazard Statement
Flammable liquid Category 4	3.1D	H227	Combustible liquid
Aspiration hazard Category 1	6.1E	H304	May be fatal if swallowed and enters airways
Eye irritation Category 2	6.4A	H319	Causes serious eye irritation

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Specific target organ toxicity (repeated exposure) Category 2	6.9B	H373	May cause damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment chronic Category 2	9.1B	H411	Toxic to aquatic life with long lasting effects
Hazardous to terrestrial vertebrates	9.3C	H433	Harmful to terrestrial vertebrates

Prevention Code	Prevention Statement
P102	Keep out of reach of children
P103	Read label before use
P210	Keep away heat/sparks/flames/hot surfaces. No smoking.
P264	Wash hands thoroughly after handling
P280	Wear eye/face protection
P260	Do not breathe spray/mist
P273	Avoid release to the environment

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331	Do NOT induce vomiting
P370+P378	In case of fire: Use for extinction foam, CO2, dry chemical, or fine water spray
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
P314	Get medical advice/attention if you feel unwell
P391	Collect spillage

Storage Code	Storage Statement
P403+P235	Store in a well-ventilated place. Keep cool
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/v)
Haloxfop-P-methyl	72619-32-0	10
Hydrocarbon solvent	64742-47-8	46
Non-Hazardous ingredients	-	To Bal

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 immediately.
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

Extinguishing Media	foam, CO2, dry chemical, or fine water spray
Fire & Explosion Hazards	Barrels exposed to flames or high temperature effects must be cooled with dispersed water spray and removed from affected area if possible.
Fire Fighting Equipment	The personnel directly participating in fire-fighting operations should wear proper, light clothes, protecting the skin (gas proof) and be provided with equipment isolating the airways because of the toxic burning products, such as hydrogen chloride, carbon monoxide and phosgene (carbonyl chloride).
Fire Fighting Instructions	This product is combustible. High temperatures may liberate toxic gases, halogens, nitrogen oxides, carbon dioxide, carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Do not inhale any vapours. Clear area of all unprotected personnel. Keep people upwind of fire. Use appropriate protective clothing and equipment.
Spills	Do not allow larger amounts of the product to enter waste drainage lines, ground and surface waters or soil. In case of environment contamination, notify appropriate authorities. 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	Follow the instructions given on the label-instruction enclosed to the container.
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 original container in a well-ventilated place. Keep cool. Store locked up. Storage temperatures from 0°C to 30°C. Keep away from food and feedstuffs, heaters and open flame sources. 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. The storage area should be inaccessible for unauthorised persons, especially children. Protect against access of third persons. The product expiration period is 3 years from the date of production. The product can be used after the expiration period but only after verification of the conformity of all its parameters with technical specifications. If any parameters are conformable, contact the manufacturer for advice.
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8. EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure Guidelines	Ingredient	CAS Number	WES-TWA	WES-STEL	WES-CEILING	Notations
	Haloxfop-P-methyl	72619-32-0	Not set	Not set	Not set	N/A
	Hydrocarbon solvent	64742-47-8	Not set	Not set	Not set	N/A
WorkSafe's 15th edition of WES and BEI values, published February 2025. The WES-TWA (Time-Weighted Average) exposure value is the average airborne concentration of a particular substance calculated over a normal 8 hour working day for a 5-day working week. The WES-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 "applies to substances with rapid effects, where even brief exceedances of the TWA limit should never occur.						
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	Yellow to brown liquid
Odour	Characteristic
Odour Threshold	Not determined
pH	5.0-8.0
Boiling Point	>100°C
Melting Point	Not applicable
Freezing Point	Not available
Flash Point	>75°C
Flammability	Not available
Upper/Lower Flammability or Exposure Limits	Not available
Vapour Pressure	Not available
Vapour Density	1.02 g/ml
Specific Gravity	Not determined
Water Solubility	Not available
Partition Coefficient:	Not determined
Auto-ignition Temperature	Not determined
Decomposition Temperature	Not determined
Kinematic Viscosity	Not determined
Particle Characteristics	Emulsifiable concentrate

10. STABILITY & REACTIVITY

Stability	A stable product under normal conditions
Reactivity	Vapours are flammable

Conditions to Avoid	Temperatures below 0°C
Incompatibility	The product may react with oxidizing agents, acids and alkali
Hazardous Decomposition Products	Carbon monoxide, HCl, nitric oxides
Hazardous Polymerisation	Not known

11. TOXOLOGICAL INFORMATION

ACUTE EFFECTS	
Oral Toxicity	LD50 for rat >5000 mg/kg b.w. Ingestion at high doses is damaging to the liver
Dermal Toxicity	LD50 for rat > 5000 mg/kg b.w.
Inhalation Toxicity	LC50 (rat) >20 mg/L
Eye Corrosion/Irritation	Moderately Irritation
Skin Corrosion/Irritation	Mild Irritation
CHRONIC EFFECTS	
Carcinogenicity	None known
Reproductive Toxicity	None known
Germ Cell Mutagenicity	None known
Aspiration	May be fatal if swallowed and enters airways
STOT/SE	None known
STOT/RE	Ingestion at high doses is damaging to the liver

12. ECOLOGICAL INFORMATION

Ecotoxicity (aquatic & terrestrial)	Toxic to aquatic life with long lasting effects Harmful to terrestrial vertebrates
Persistence & Degradability	No data available
Ecotoxicity Information	LD50 (pheasant) >2000 mg/kg LC50 (96 hours) (rainbow trout) >50 mg/L LC50 (21 days) (daphnia) >100 mg/L EC50(5 days) (algae) >45 mg/L Non toxic to bees
Bioaccumulation	No data available
Mobility in Soil	No data
Other Adverse Effects	Avoid release into the environment, soil, streams and waterways

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. (Halyoxyfop-P)
Class	9
UN Number	3082
Packaging group	III
Hazchem Code	3Z
Marine Pollutant	Yes

15. REGULATORY INFORMATION

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

ACVM Act 1997 Registration No.	P009925
HSNO Approval No.	HSR008025
Substance description	100g/L haloxyfop-P present as the methyl ester in the form of an emulsifiable concentrate. Also contains 467g/L hydrocarbon solvent.
Certified Handler	Not required
Qualified Handler	Not required
Tracking	Not required
Compliance Certificate	Not required

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Quantity that must be secured	Not required
Location Certificate	Not required
Emergency Response Plan	1,000L
Secondary Containment	1,000L
Signage	1,000L
Fire Extinguishers	If over 500L – 2 extinguishers
Record-keeping	Not required
HSNO Additional Controls (Restrictions of use)	Refer to EPA www.epa.govt.nz for controls document – HSR008025
77A – Other – Permissions: requirements relating to permissions from the Authority under section 95A of the HSNO Act 1996	A person must not apply or otherwise use this substance onto or into water, unless that person first obtains a permission from the Authority under section 95A of the Hazardous Substances and New Organisms Act 1996.
77A - Other: Tolerable Exposure Limits	A TELdrinking water has been set for haloxyfop-R-methyl. The TEL value is 0.0021 mg/L.
77A - Other: Environmental Exposure Limits	An EELwater has been set for haloxyfop-R-methyl. The EEL value is 0.84 µg/L.
77A - Other: Aquatic herbicides - annual reporting requirements	A person who applies the substance onto or into water must ensure that the Environmental Protection Authority is provided with an annual written report by 31st July each year. This report will cover all applications of the substances onto or into water for which they are responsible and must include the following information;· A map of all locations where the substance has been applied;· Details of the spray operation by location, including application method used, quantity of the substance applied, rates of application, frequency of application and the dates of application;· Details (including results) of water sampling conducted to confirm compliance with EEL values;· Details of sediment testing conducted;· Details of pest plant species targeted;· Details of dissolved oxygen levels prior to application of the substance to any static water body;· Details of pH testing conducted prior to application of substances containing metsulfuron-methyl;· Details of engagement/consultation activities undertaken;· Details of any incidents reported or complaints received in reference to the application of the substance and details of any actions taken to remedy complaints; and An overall assessment of the outcome of each operation and any proposed follow-up spraying for the forthcoming year.
77A - Other: Aquatic herbicides - incident reporting requirements	A person who applies the substance onto or into water must ensure that any instances of unintended or accidental by-kills, are reported (including the time, date and location monitoring was undertaken) to the EPA within a week of the application of the substance. This excludes the by-kill of non-target plants that may be expected from the herbicidal nature of the substance.

77A - Other: Aquatic herbicides - irrigation water requirements	A person who applies the substance onto or into water must ensure that the substance is not applied in a manner that may cause harm to crops using water taken from that water body.
77A - Other: Aquatic herbicides - notification requirements	A person who applies the substance onto or into water must ensure that any parties who may be potentially directly affected are notified of details of the operation, including treatment dates, the identity of the substance which is being used and relevant restrictions on the use of water, at least five working days prior to each application of the substance.
77A - Other: Aquatic herbicides - requirements for protection of aquatic farms	A person who applies the substance onto or into water must ensure that the substance is not applied in a manner that may cause harm to aquatic farms where food is produced.
77A - Other: Aquatic herbicides - requirements relating to migration of whitebait and elvers	A person who applies the substance onto or into water must ensure that the substance is not applied onto or into water bodies where whitebait and elvers may be present during the Department of Conservation's defined local whitebait season relevant to that region. This control shall not apply to any application of the substance to a pest plant infestation area that is less than 5 m ² , where the application is undertaken during surveillance to ensure completion of the eradication of a pest species in that spray area, during the period 1 to 30 November.
77A - Other: Aquatic herbicides - requirements relating to static water bodies	A person who applies the substance onto or into water must ensure that the substance is not applied, in any single application, onto more than 33% of the surface area of any static water body. If applications of the substance onto or into any static water body, taken cumulatively within a seven day period, arrive at more than 33% of the surface area of the water body, the substance must not be applied to any additional sections of the water body for at least seven days after the last application of the substance to that water body. These controls do not apply if the average dissolved oxygen level for the static water body is less than 4 mg/l at the time of application.
77A - Other: Aquatic herbicides - restrictions on nonylphenol ethoxylates	A person who applies the substance onto or into water must ensure that the substances covered by this approval are not applied onto or into water if they contain nonylphenol ethoxylates as a component of their formulation.
77A - Other: Aquatic herbicides - signage requirements	A person who applies the substance onto or into water must ensure that signage is erected and maintained at all public access points within 100 m of the application area to notify the public that application of a herbicide onto or into water has been undertaken and state the following:· Do not swim;· Do not gather food from the waterway (including fish); and· Do not take water for consumption. The signs must be erected on the day of, and prior to, the operation and remain in place for five days after application, where application of the substance is to a flowing water body, and for 21 days after application where application of the substance is to a static water body. The signs must be removed after five days or 21 days, respectively. The signs must be capable of being read at a distance of at least five metres during daylight hours.

Hazardous Property Controls Notice 2017

HPC Notice Part 4 Subpart B
Use of ecotoxic substances in any place

Clause 52 of the Hazardous Property Controls Notice does not apply to this substance. The maximum application rate for application of this substance onto or into water is: 0.75 kg ai/ha, a maximum of three times per year with a minimum application interval of 30 days.

HPC Notice Part 4 Subpart C
Qualifications required for application of ecotoxic pesticides

Where the substance is applied onto or into water and the water has the potential to leave the place containing the application area, clauses 62, 63 and 64 of the Hazardous Property Controls Notice apply as if the substance has a hazard classification of hazardous to the aquatic environment acute Category 1.

16. OTHER INFORMATION
Glossary

AEL	Acceptable Exposure Limit
DT₅₀	Time (days) for 50% loss
EC₅₀	Median effective concentration
EEL	Environmental Exposure Limit
EPA	Environment Protection Authority
GHS	Globally Harmonised System
HSNO	Hazardous Substances & New Organisms Act
K_{oc}	Organic carbon partition coefficient
LFL	Lower Flammability Limit
LC₅₀	Lethal Concentration in air or water for 50% of test organisms
LD₅₀	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

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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: 28 March 2025

Further Information: Rainbow & Brown Limited
Toll-Free Phone (0508) 299 299
