SAFETY DATA SHEET
HURRICANE

1: Identification of the Substance and Supplier

Product Name	**HURRICANE**
Recommended Use	Herbicide
Suppliers Details	Orion AgriScience Ltd Unit 1, 15 Sir Gil Simpson Drive, Harewood, Christchurch, 8053 PO Box 39 071, Harewood, Christchurch, 8545
Web Address	www.orionagriscience.co.nz
Email Address	orders@orionagriscience.co.nz
Telephone Number	(03) 928 2386 (office hours), 0800 674 6627 (free phone)
Emergency Telephone	0800 CHEMCALL (0800 243 622) (24 hours)
National Poison Centre	0800 POISON (0800 764 766) (24 hours)
Date of Issue/Revision	March 2025

2: Hazards Identification

Hazard Pictograms

Signal Words	**Warning**
Hazard Classes:	**Hazard Statements:**
Flammable Liquid (Cat. 4)	H227 Combustible Liquid
Eye Irritation (Cat. 2)	H319 Causes serious eye irritation
Specific target organ toxicity (repeated exposure) (Cat. 2)	H373 May cause damage to organs through prolonged or repeated exposure
Hazardous to the aquatic environment chronic (Cat. 2)	H411 Toxic to aquatic life with long lasting effects
Precautionary Statements:	
Prevention	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking P280 Wear protective gloves/protective clothing/eye protection/face protection P264 Wash hands thoroughly after handling P260 Do not breathe dust/fume/gas/mist/vapours/spray P273 Avoid release to the environment Keep out of reach of children. Read label before use. Avoid contact with eyes and skin. Do not breathe in the vapour or spray mist. When mixing or applying, wear personal protection as described in section 8. Take all reasonable steps to ensure that this product does not cause any significant adverse effects to the environment beyond the application area. Do not apply directly into or onto water.
Response	P370+P378 In case of fire use water spray, foam, dry chemical or C02 to extinguish P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing P337+P313 If eye irritation persists: Get medical advice/attention P314 Get medical advice/attention if you feel unwell P391 Collect spillage First aid measures described in section 4. Contain and collect spillage for disposal. In an emergency call 111, Police or Fire Brigade. For specialist advice in an emergency only, call 0800 CHEMCALL (0800 243 6225) (24 hrs).
Storage	P403 Store in a well ventilated place Keep cool.

Disposal	P501 Dispose of contents by using it in accordance with this label. Dispose of the container via AgRecovery after triple rinsing (use the rinsate for spraying).

3: Composition/ Information on Ingredients

Ingredient	CAS No	Content (% w/v)
Haloxyfop-R-methyl ester (active ingredient)	72619-32-0	10
Diethylene glycol monoethyl ether	111-90-0	30 - 60
Other ingredients	Proprietary	Remainder

4: First Aid Measures

If medical advice is needed, have product container or label at hand. For advice call the National Poisons Centre or a Doctor

Ingestion:	Seek medical advice if feeling unwell
Skin Contact:	Wash with plenty of soap and water. Seek medical advice if irritation occurs.
Eye Contact:	Rinse cautiously with water for several minutes. Remove contact lenses, if easy to do so. Continue rinsing. Seek medical advice if irritation persists.
Inhalation:	Seek medical advice if feeling unwell
Workplace Facilities:	Hand wash facility. Eye wash facility
Advice to Doctor:	No specific antidote. Treat symptomatically
National Poison Centre	0800 POISON (0800 764 766) (24 hours)

Symptoms of Exposure which could occur if this material is not handled in accordance with instructions:

Ingestion:	Dizziness, headache, nausea, incoordination
Skin Contact:	No data available
Eye Contact:	Irritation.
Inhalation:	Irritation, headache, dizziness, nausea, drowsiness

5: Fire-Fighting Measures

Fire/Explosion Hazard	Flammable liquid and vapour
HAZCHEM Code	3Z
ERP Guide No	47
Extinguishing Media	Water spray, foam, dry chemical or C02. Avoid water jet.
Fire Fighting Instructions	During a fire, toxic fumes may be emitted. Wear self-contained breathing apparatus. Contain runoff.
Specific Hazards Arising from Fire	No data available

6: Accidental Release Measures

Personal Precautions	Caution: Floors may be slippery if wet. Eliminate all ignition sources and naked lights. Use non-sparking equipment. Leave and/or avoid entering confined spaces. Wear personal protective clothing and equipment as described in section 8. Respiratory protection (with organic vapour cartridge) required for any spill other than minor. Exclude non-essential people from the area.
Environmental Precautions	Prevent further spillage or leakage. Prevent material from entering drains, waterways, etc.
Clean Up	Absorb spillage with inert material such as spill kit, sand or cat litter. Collect and place in a sealable container for disposal. Wash down affected area with water and detergent. Absorb and collect washings for disposal. Dispose of safely to a suitable landfill.

7: Handling and Storage

Storage:	Keep out of reach of children. Store in the original tightly closed container in a cool, well ventilated, and secure area.
Handling and Use:	Keep out of reach of children. Refer to Prevention statements in section 2 above. Keep people and animals away from the area while spraying and for the duration of the REI.

REI	Until spray has dried

8: Exposure Controls / Personal Protection

Tolerable Exposure Limit	None established
Workplace Exposure Standards	None established (Use lowest practicable level)
Engineering Controls	Select spray application equipment to minimize exposure to operator and bystanders
Personal Protection:	
	The following Standards provide general advice regarding safety clothing and equipment: Respiratory equipment: AS/NZS 1715, Protective Gloves: AS 2161, Occupational Protective Clothing: AS/NZS 4501, Industrial Eye Protection: AS1336 and AS/NZS 1337, Occupational Protective Footwear: AS/NZS2210
Eye	Safety glasses/goggles (or full face respirator incorporating visor) when mixing or applying.
Skin	Cotton overalls snugly fitting at the neck, wrist and ankle, chemical resistant boots and gloves (barrier multilayer, nitrile, neoprene)
Respiratory	Not required where vapour or spray mist is not inhaled. Otherwise, respirator (organic vapour and particulate matter) is required

Clean protective equipment after use

9: Physical and Chemical Properties

Appearance	Clear Amber Liquid
Odour	Solvent like
Odour Threshold	Does not apply
pH	Does not apply
Melting Point/Freezing Point	Does not apply
Boiling Point	Does not apply
Flash Point	93ºC approx. (closed cup method)
Flammability	Flammable
Upper/Lower Flammability Limits	Does not apply. May form explosive mixture in enclosed or poorly ventilated areas
Vapour Pressure	Does not apply
Vapour Density	>1 (heavier than air)
Relative Density	1.05 g/mL (approx.)
Solubility in Water	Emulsifiable
Partition Coefficient: n-octanol/water	See section 12
Auto ignition Temperature	Does not apply
Decomposition Temperature	Does not apply
Kinematic Viscosity	Does not apply
Particle characteristics	Does not apply

10: Stability and Reactivity

Stability	Stable under normal conditions
Hazardous Reactions	Vapours are flammable
Incompatibility	None Known
Hazardous Decomposition Products	None Known

11: Toxicological Information

This section describes effects which could occur if this material is not handled in accordance with this data sheet and label instructions

Acute Oral Toxicity	LD50 > 5000 mg/kg
Acute Dermal Toxicity	LD50 > 5000 mg/kg
Acute Inhalation Toxicity	LD50 > 5 mg/L
Skin corrosion/irritation	Information not available

Serious eye damage/Eye irritation	Eye Irritant
Respiratory or skin sensitisation	Information not available
Germ cell mutagenicity	Information not available
Carcinogenicity	Information not available
Reproductive Toxicity	Information not available
Specific Organ Toxicity – Single exposure	Information not available
Specific Organ Toxicity – Repeated exposure	Long term animal feeding studies on haloxyfop have noted effects to the liver and kidneys
Aspiration hazard	Information not available

12: Ecological Information

This section describes effects which could occur if this material is not handled in accordance with this data sheet and label instructions

The following information is presented in respect of the active ingredient:

Ecotoxicity	• Acute Oral LD50 (Bobwhite quail) 1159 mg/kg • LC50 (96 hr) (Rainbow trout) 0.7 mg/l • EC50 (5 dy) (Algae) 1.72 mg/l • LC50 (48 hr) (Daphnia) 6.12 mg/l • Non - toxic to bees.	
Persistence/degradability	Biodegradable. DT50 (soil) 1 days (typical)	
Bioaccumulative Potential	Octanol-water partition coefficient	LogP = 4 (high)
Soil Mobility	Soil organic carbon water partitioning coefficient	No data available
Environmental Exposure Limit:	EELwater= 0.84 µg/L	

13: Disposal Considerations

Product	Dispose of product by using it in accordance with the label. Waste product should be disposed of to a suitable landfill. For disposal of large quantities contact Orion AgriScience Ltd.
Container	Dispose of to a suitable landfill or via AgRecovery. Do not burn. Do not use packaging for any other purpose.

14: Transport Information

Dangerous Goods

UN Number	3082
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (HALOXYFOP-R-METHYL ESTER 10%)
Class	9
Subsidiary Class	None
Packing Group	III
Additional Information	MARINE POLLUTANT
MTQ (Non-Commercial)	1000 litres
Passenger Service Vehicle	Maximum quantity 10 litres

15 Regulatory Information

EPA Approval No	HSR000373
ACVM Registration No	P7703
Qualified Person	Required
Certified Handler	Not required

Workplace Only	No
Tracking	Not required
Record Keeping	Not required
Site Requirements under EPA Notice and HSWHS Regs:	• A hazardous substance location compliance certificate is not required • A hazardous area is not required • Separation distances for class 3 and class 6 substances to protected places and public places is not applicable • Fire extinguishers are required for more than 500 litres (2 fire extinguishers) • Signage is required for more than 1000 litres • An emergency response plan is required for more than 1000 litres • Secondary containment is required for more than 1000 litres • Segregation from incompatible substances (classes 1, 2, 3.2, 4 and 5) is required
Restrictions	Application into water is subject to requirements concerning maximum application rates, frequencies, intervals, permissions, signage, notification, incident reporting, annual reporting, species thresholds, etc. Refer to Orion or EPA for more information
HSNO Additional Controls (Restrictions of use) Regulation 77A No person may apply this substance unless that person first obtains a permission from the Authority under section 95A of the Hazardous Substances and New Organisms Act 1996	**Refer to EPA www.epa.govt.nz for controls document - HSR000373** 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.
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.
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.
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.
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.
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.
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 sevenday 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.
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.

A control has been added relating to annual reporting	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
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 m2, 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.
Other: Environmental Exposure Limits	An EELwater has been set for haloxyfop-R-methyl. The EEL value is 0.84 µg/L.
Additional Requirements	Refer to NZS 8409:2004 'Management of Agrichemicals', and relevant local and regional council plans

16: Other Information

SDS review date	19 March 2025
Glossary	
ADE	Acceptable Daily Exposure – A daily dose, received via any route, below which no adverse effects are expected over a lifetime of exposure
ACVM	Agricultural Compounds and Veterinary Medicines group of the Ministry of Primary Industries
Cat.	GHS category
Ceiling	A concentration that should not be exceeded at any time during any part of the working day
Certified Handler	A qualification issued by a Compliance Certifier to handle and use particularly toxic substances (6.1A and 6.1B)
DT50	Time (days) for 50% reduction in concentration
EC50	Concentration required to produce an effect in 50% of organisms
Environmental Exposure Limit	Maximum concentration limit of a substance in an environmental medium, e.g., water, soil.
EPA Notice	Hazardous Property Controls Notice 2017
ERP Guide	Dangerous Goods – Initial Emergency Response Guide SNZ HB 76:2008
GHS	Globally harmonized system of classification and labelling of chemicals
Hazardous Substance Location	For locations storing hazard substances of certain classes above threshold quantities
Compliance Certificate	
Hazardous Area	A designated area designed for the presence of flammable substances - Refer AS/NZS 60079.10.1:2009
HAZCHEM Code	Emergency action code for emergency services
HSWHS Regs	Health and Safety at Work (Hazardous Substances) Regulations 2017
LC50	Concentration that will kill 50% of organisms
LD50	Dose that will kill 50% or organisms
MTQ	Maximum Transport Quantity. The maximum amount of dangerous goods that can be transported by road by the user
Notification	Advance notice given to neighbours and other affected parties, of details of proposed application, and other details as described

Octanol-Water Partition Coefficient	The partition coefficient of a substance between n-octanol and water, used as the Logarithm base 10 form, as an indicator that a substance may bioaccumulate
PDE	Permitted Daily Exposure - A daily dose below which no adverse effects are expected over a lifetime of exposure
Protected Place	Residential properties, schools, hospitals, kindys, factories, shops, warehouses, etc., and other places where people assemble
Public Place	A place frequented by the public, including roads (does not include private property)
Qualified Person	A requirement for the loader, contractor or person applying the product to hold a qualification such as a GROWSAFE Certificate, Unit Standard 21563, etc.
Record Keeping	Includes a spray diary or other record of application
REI	Restricted Entry Interval – The length of time after application before entry into the treated area is permitted without the use of protective equipment. For indoor environments, this time period commences once ventilation after treatment begins.
Segregation	Certain classes of substances must not be in contact with, and must be stored separately from, certain other classes as specified in HSWHS Regs
Separation Distances	The distances specified in Part 11 and Part 13 of HSWHS Regs between storage and/or use of hazardous substances and protected places and/or public places
Signage	Positioned at entrances to commercial premises providing information on the hazardous substances present
Soil Adsorption Coefficient (Kd)	The ratio of the concentrations of a substance adsorbed onto a solid sorbent to that dissolved in a liquid phase. The higher the value the less mobile the chemical is in soil
Soil Organic Carbon-Water Partitioning Coefficient (Koc)	The ratio of the mass of a chemical that is adsorbed in the soil per unit mass of organic carbon in the soil. The higher the value the less mobile the chemical is in soil
STEL	Short term exposure level – 15 minute time weighted average
Tolerable Exposure Limit	Maximum concentration limit of a substance above which persons must not be exposed
Tracking	For some particularly hazardous substances, a record must be kept of the transport, storage, sale and use of the product
TWA	Time weighted average calculated over an 8 hour working day
Workplace Exposure Standard	An occupational health standard limiting concentrations of specified substances to which persons are exposed
Workplace Only	A product that is restricted to a workplace only and under the supervision of a certified handler

Please Note

Users must ensure that the most up to date version of this safety data sheet is used.

This Safety Data Sheet summarises information on this product, and how to safely handle and use the product. Each user should familiarise themselves with the product label and Safety Data Sheet, and consider the information in the context of how the product will be handled and used, including in conjunction with other products. Orion AgriScience Ltd assumes no responsibility for the accuracy, completeness or suitability of this information. The user is responsible for determining the suitability and accuracy of this information for their particular purposes.

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