

1. PRODUCT & COMPANY IDENTIFICATION

Product Name	MSF600
Recommended Use	Herbicide
Suppliers Details	Rainbow & Brown Limited 68A Tallyho Street, Rotorua, New Zealand PO Box 10049, Mail Centre, Rotorua, 3046
Web Address	www.rainbowbrown.co.nz
Email address	mail@rainbowbrown.co.nz
Telephone	(07) 350 2009 (office hours), 0508 299 299 (free phone, office hours)
Emergency Telephone	0800 CHEMCALL (0800 243 622) (24 hours)
National Poison Centre	0800 POISON (0800 764 766) (24 hours)
Date of Issue	27 November 2018
Expiry Date	8 December 2025

2. HAZARD IDENTIFICATION

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

EPA Approval No	HSR000242
Hazard Pictograms	
Signal Word	WARNING

GHS Classification & Category	HSNO Classification	Hazard Code	Hazard Statement
Eye irritation, Category 2	6.4A	H319	Causes serious eye irritation
Hazardous to the aquatic environment (acute) Category 1	9.1A	H400	Very toxic to aquatic life
Hazardous to the aquatic environment (chronic) Category 1	9.1A	H410	Very toxic to aquatic life with long-lasting effects
Hazardous to soil organisms	9.2A	H421	Very toxic to soil environment

Prevention Code	Prevention Statement
P101	If medical advice is needed, have product container or label at hand
P102	Keep out of reach of children
P103	Read label before use
P264	Wash hands and face thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear eye/face protection

Avoid contact with eyes and skin. Do not breathe in spray mist. When 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 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.
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 Code	Storage Statement
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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)
Metsulfuron-methyl	74223-64-6	60%
Non specified non-hazardous ingredients	NA (Mixture)	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

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

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.
Skin	Wash with plenty of soap and water. Seek medical advice if irritation or rash occurs.
Ingestion	Never give anything by mouth to an unconscious person. If swallowed do NOT induce vomiting. For advice, contact the National Poisons Centre (0800 764 766). Seek medical assistance immediately.
Inhalation	Remove patient to fresh air. Lay down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance immediately.
Workplace Facilities	Hand wash facility. Eye wash facility.
Advice to Doctor	Treat symptomatically. No specific antidote.
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:

Eye Contact	Causes serious eye irritation
Skin	No data available
Ingestion	No data available
Inhalation	No data available

5. FIRE-FIGHTING MEASURES

Extinguishing Media	Water fog, foam, CO ₂ or dry chemical
Fire & Explosion Hazards	Not a fire or explosion hazard
Fire Fighting Instructions	Wear full protective clothing and self-contained breathing apparatus. Keep upwind. Contain runoff.
Hazchem Code	2Z
ERP Guide No	47

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear protective clothing as described in section 8. Exclude non-essential people from the area.
Environmental Precautions	Prevent further spillage or leakage. Prevent material from entering drains, waterways, etc.

Clean Up	Contain spill and absorb with sand, soil or absorbent granules. If spill does enter waterways contact the local authority. Collect in an appropriate sealable container for disposal in an approved landfill. If spill is onto soil near valuable trees, remove top 50mm of soil after initial cleanup.
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7. HANDLING AND STORAGE

Storage	Keep out of reach of children. Store in the original tightly closed container, dry, cool area away from foodstuffs. Stores containing more than 100kg of MSF600 are subject to signage and secondary containment and require an emergency response plan. Storage must be in accordance with NZS 8409 Management of Agrichemicals.
Handling and Use	Do not handle until all safety precautions have been read and understood. Use personal protective equipment. This product must not be applied into or onto water. Record Keeping: Records of use as described in NZS 8409 Management of Agrichemicals must be kept where more than 3kg of this product is used within 24hrs.
REI	None specified (Also refer to Section 15).

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

Tolerable Exposure Limit	A TELdrinking water has been set for metsulfuron-methyl. The TEL value is 0.04 mg/L.
Workplace Exposure Standards	None established.
Engineering Controls	Handle in well ventilated areas, generally natural ventilation is adequate.
Personal Protection	
Respiratory	No special precautions are necessary for respiratory protection under normal handling conditions. If exposed to unusually high dust concentrations, then use an approved dust respirator.
Skin	Cotton overalls snugly fitting at the neck, wrist and ankle, boots and gloves
Eye	Safety glasses/goggles when applying

Clean protective equipment after use

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance	Off-white/grey-brown granule
Odour	No definitive odour
Odour Threshold	Property does not apply
pH	6.0 – 8.0 (1% solution)
Melting Point/Freezing Point	158°C

Boiling Point	Property does not apply
Flash Point	Property does not apply
Flammability	Non-flammable
Upper/Lower Flammability	Property does not apply
Vapour Pressure	Negligible at room temperature
Vapour Density	3.3 x 10 ⁻⁷ Pa at 25°C (as Flumetsulam)
Relative/Specific Gravity	Property does not apply
Water Solubility	Dispersible
Partition Coefficient: n-octanol/water	Property does not apply
Auto-ignition Temperature	Property does not apply
Decomposition Temperature	Property does not apply
Kinematic Viscosity	Property does not apply
Particle Characteristics	Property does not apply

10. STABILITY & REACTIVITY

Stability	Stable under normal conditions, avoid temperatures >40°C
Hazardous Reactions	Not reactive under normal conditions of use.
Incompatibility	Strong oxidizers. Keep away from food, feedstuffs, seeds and fertilisers.
Hazardous Decomposition Products	Hazardous polymerisation will not occur

11. TOXOLOGICAL 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	LD ₅₀ (rats) > 5000 mg/kg
Acute Dermal Toxicity	Mild skin irritant
Acute Inhalation Toxicity	Not expected to be harmful by inhalation under normal conditions of use.
Skin corrosion/irritation	Not a skin irritant
Serious eye damage/eye irritation	Eye irritant.
Respiratory or skin sensitisation	Not expected to be a respiratory or skin sensitiser.
Germ Cell Mutagenicity	No known effects
Carcinogenicity	No known effects

Reproductive Toxicity	No known effects
Specific Organ Toxicity – Single exposure	No known effects
Specific Organ Toxicity – Repeated exposure	No known effects
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	EC ₅₀ (algal) 0.00016 mg/L (Metsulfuron-methyl) Very toxic to aquatic life with long lasting effects. Avoid losses to the environment wherever possible.
Persistence & Degradability	Not rapidly biodegradable
Bioaccumulation	Not bioaccumulative
Mobility in Soil	EC ₂₅ (rice, 16 day) 0.00071 lb/acre (Metsulfuron-methyl). Very toxic in the soil environment. Soil DT ₅₀ > 30 days.
Environmental Exposure Limit	An EELwater has been set for metsulfuron-methyl. The EEL value is 0.0084 µg/L.

13. DISPOSAL CONSIDERATIONS

Product	Use product strictly according to label directions. Unused product must be disposed of at an approved landfill or in accordance with local regulations.
Container	When empty, triple rinse container residues into spray tank. Dispose of via AgRecovery or other approved recycling scheme. Do not reuse packaging. Do not burn. If AgRecovery is not available, crush and bury in an approved landfill.

14. TRANSPORT INFORMATION

Dangerous Goods	
UN Number	3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Metsulfuron-Methyl)
Class	9
Subsidiary Class	N/A
Packing Group	III
Additional Information	Marine Pollutant

Passenger Service Vehicle	Up to 3kg may be carried on a public passenger vehicle. No limitation on non-passenger vehicles. Must be transported in original sealed and labelled container.
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15. REGULATORY INFORMATION

ACVM Registration No.	P7027
EPA Approval No	HSR000242
Description	Water dispersible granule containing 600g/kg metsulfuron-methyl.
Qualified Person	Yes
Certified Handler	Not required
Workplace Only	No
Location Certificate	Not required
Tracking	Not required
Record Keeping	Not required (unless more than 3kg is applied within 24 hours, and which is likely to enter air or water and leave the application area)
Signage	100kg
Emergency Response Plan	100kg
Secondary Containment	100kg
Additional Requirements	77A - 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. 77A - 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 - 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 - 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 - 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 - 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 - 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. The signs must be removed at the end of this period. The signs must be capable of being read at a distance of at least five metres during daylight hours. 77A - 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. Refer to NZS 8409:2004 'Management of Agrichemicals', and relevant local and regional council plans
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16. OTHER INFORMATION

SDS review Date	8 December 2025
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Glossary

ACVM	Agricultural Compounds and Veterinary Medicines group of the Ministry of Primary Industries
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
GHS	Globally Harmonised System
HSNO	Hazardous Substances & New Organisms Act
Koc	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
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

Rainbow & Brown Ltd Safety Data Sheet Disclaimer

This Safety Data Sheet has been prepared by Rainbow & Brown Ltd and summarises information on this product and safe handling procedures. The information is based on data provided to Rainbow & Brown Ltd or obtained from third-party sources and represents the current understanding of appropriate safety and handling precautions at the time of issue.

Users must ensure they are working with the most current version of this SDS and should familiarise themselves with both the product label and this document. Each user should consider this information in the context of their specific handling and use of the product, including when used in conjunction with other products.

While Rainbow & Brown Ltd has exercised due care to include accurate and up-to-date information, no warranty is provided as to the accuracy, completeness, or suitability of this information. Users are responsible for determining whether this information is suitable and accurate for their particular purposes and specific applications.

For additional clarification regarding any aspect of the product or to ensure an appropriate risk assessment can be conducted, users should contact Rainbow & Brown Ltd directly or obtain further information from the manufacturer.

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