SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

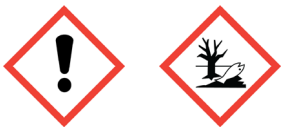
Product:	**ADAMA METSULFURON HERBICIDE**
Chemical Name of Active Ing:	Metsulfuron methyl
Product Use:	Herbicide
Restriction of Use:	Refer to Section 15
New Zealand Supplier:	ADAMA New Zealand Ltd
Address:	Level 1/93 Bolt Road Tahunanui, Nelson
Telephone:	+64 3 543 8275
Email:	nzorders@adama.com
Emergency Telephone:	**0800 764 766 (National Poison Centre)** **0800 734 607 (24hr Emergency Response)**
Date of SDS Preparation:	07 May 2024

Section 2. Hazards Identification

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

HSNO Approval No: HSR000242

Pictograms



Signal Word: **Warning**

HSNO Classification	Hazard Code	Hazard Statement
Eye irritation Category 2	H319	Causes serious eye irritation.
Hazardous to the aquatic environment acute Category 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment chronic Category 1	H410	Very toxic to aquatic life with long lasting effects.
Hazardous to soil organisms	H421	Very toxic to the soil environment.

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label carefully before use and follow all instructions.
P264	Wash hands thoroughly after handling.
P273	Avoid unintended release into the environment.
P280	Wear protective clothing as detailed in Section 8.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P305 + P313 + P337 + P338 + P351	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
P391	Collect spillage.

Storage Code	Storage Statement
None allocated	

Disposal Code	Disposal Statement
P501	Wherever possible completely use material by using according to label instructions. Dispose of unwanted product and wastes from spillages as hazardous substances in accordance with local and national regulations using a licensed waste disposal company. Triple rinse containers and add rinsate to spray tank before puncturing and offering for recycling or landfill. Do not allow product to enter waterways. Do not burn product or container.

Section 3. Composition / Information on Ingredients

Ingredients	Wt %	CAS NUMBER.
Metsulfuron methyl	60	74223-64-6
Other non-hazardous ingredients	To bal	-

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes — Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.

If on Skin — Take off contaminated clothing and wash before re-use. Wash with plenty of soap and water. If skin irritation or rash occurs: get medical advice/attention.

If Swallowed — Do not induce vomiting. Wash out mouth with water and drink several glasses of water. Never give anything to the mouth of an unconscious person. If vomiting occurs, place victim face downwards, with the head turned to the side and lower than the hips to prevent vomit entering the lungs. Call a POISON CENTER or doctor/physician if you feel unwell.

If Inhaled — Remove person to fresh air. Remove contaminated clothing and loosen remaining clothing. Allow person to assume most comfortable position and keep warm. Keep at rest until fully recovered. Apply artificial respiration if not breathing. Get medical advice if breathing becomes difficult.

Most important symptoms and effects, both acute and delayed

Symptoms:

Ingestion: Not applicable.
Inhalation: Not applicable.
Skin: Not applicable.
Eye: Causes serious eye irritation.

Section 5. Fire Fighting Measures

Hazard Type	Non Flammable / Not combustible.
Hazards from products	Fire decomposition products from this product may be toxic if inhaled.
Suitable Extinguishing media	There is no risk of an explosion from this product under normal circumstances if it is involved in a fire. Preferred extinguishing media are carbon dioxide, dry chemicals, foam, water fog.
Precautions for firefighters and special protective clothing	Full protective clothing and self-contained breathing apparatus.
HAZCHEM CODE	**3Z**

Section 6. Accidental Release Measures

As a minimum wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC. If there is a significant chance that dust is likely to build up in cleanup area, we recommend that you use a dust mask.

Environmental precautions
In the event of a major spill, prevent spillage from entering into drains and water courses.

Methods and material for containment and cleaning up
Stop leak if safe to do so, and contain spill. Sweep up and shovel or collect recoverable product into labeled containers for recycling or salvage and dispose of promptly. Consider vacuuming if appropriate. Ensure disposal is in compliance with local disposal regulations.

Section 7. Handling and Storage

Precautions for Handling:

- Read label carefully before use and follow all instructions.
- Avoid unintended release into the environment.
- Wash hands thoroughly after handling.
- Wear protective clothing as detailed in Section 8.

Precautions for Storage:

- Keep out of reach of the children.
- Store away from incompatible materials listed in Section 10.
- Store in the original, unopened container in a cool, dry place, out of direct sunlight and away from stockfeed or foodstuffs.
- As a substance with aquatic ecotoxicity classifications, storage of ADAMA Metsulfuron Herbicide must be carried out in such a manner as to prevent contamination of waterways. It is recommended that The New Zealand Standard for the Management of Agrichemicals (NZS 8409) is followed.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

	TWA		STEL	
Substance	**ppm**	**mg/m3**	**ppm**	**mg/m3**

No ingredients have exposure limits.

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible

P351TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices NOV 2017 9TH EDITION.

Engineering Controls
Control airborne concentrations below the exposure guidelines. Exhaust ventilation may be necessary under certain confined conditions.

Personal Protection Equipment

Eyes	Safety goggles or face shield.
Hands and Skin	Wear suitable protective clothing. Chemical resistant boots. Chemical resistant gloves.
Respiratory	Ensure good ventilation. If not adequate, wear a suitable dust respirator.
General	When handling do not eat, drink or smoke. Wash hands thoroughly after handling. Wash clothing separately before re-use.

Section 9 Physical and Chemical Properties

Appearance	Beige to light brown tubular granule (solid)
Odour	No odour
Odour Threshold	Not applicable
Coefficient pH	4 – 7 (10% solution)
Boiling Point	Expected to decompose before boiling
Melting /Freezing Point	Not applicable
Flash Point	Not applicable
Flammability	Not applicable
Upper and Lower Exposure Limits	Not applicable
Vapour Pressure	Not applicable
Density	Not applicable.
Solubilities	Wettable
Coeff Oil/water distribution:	Not applicable
Auto-ignition Temperature	Not applicable
Kinematic viscosity mm2/s 40 °C	Not applicable
Particle Characteristics	Not applicable
Volatiles	Not applicable

Section 10. Stability and Reactivity

Stability of Substance	This product is 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 properties.
Conditions to Avoid	Containers should be kept dry. Protect this product from light. Store in closed original container in a dry, cool, well ventilated area, out of direct sunlight.
Incompatible Materials	Incompatible with strong oxidizing agents.
Hazardous Decomposition Products	If heat to decompose, it emits toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxide and sulfur oxides.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Not applicable
Dermal	Not applicable
Inhalation	Not applicable
Skin	Not applicable
Eye	Causes severe eye irritation.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Not applicable.

Acute toxicity - Dermal:	LD50 (rabbit) >2000 mg/kg
Acute toxicity – Inhalation:	LC50 (rat) 5 mg/L (4 hours) (technical material)
Skin irritation:	May be irritating (rabbits)
Eye irritation:	May be irritating (rabbit).
Sensitization:	Non sensitizer (guinea-pig)

Common name: Metsulfuron

Chronic toxicity: 2-year feeding study in rats resulted in a NOEL of 25.0 mg/kg/day (or 500 ppm in feed), based on decreased body weight seen at 250 mg/kg/day (5000 ppm) which was the highest dose tested. EPA has based its reference dose (0.25 mg/kg/day) on this study.

Carcinogenicity:	Negative for rats and mice in laboratory tests.
Mutagenicity:	Not mutagenic
Reproduction toxicity:	None

Section 12. Ecotoxicological Information

Persistence and degradability	No data available.
Bioaccumulation	No data available.
Mobility in Soil	No data available.
Other adverse effects	No data available.
Precautions	Do not allow to enter waterways.

Breakdown of chemical in soil and groundwater: The breakdown of Metsulfuron-methyl in soils is largely dependant on soil temperature, moisture content, and pH. The chemical will degrade faster under acidic conditions and in soils with higher moisture content and higher temperatures. The chemical has a higher mobility potential in alkaline soils than in acidic soils, as it is more soluble under alkaline conditions. Metsulfuron-methyl is stable to photolysis, but will break down in ultraviolet light. Half-life estimates for Metsulfuron-methyl in soil are wide ranging from 14-180 days; with an overall average of reported values of 30 days. Reported half-life values (in days) for soil include: clay – 178; sandy loam – 102; clay loam – 70, 14-28, 14-105; silty loam – 120-180.

Breakdown of chemical in surface water: The dissipation time for Metsulfuron-methyl was investigated in a mixed wood/boreal forest lake. The DT_{50} or length of time required for half of the material to dissipate in water was >84 days when high concentrations of Metsulfuron-methyl were applied, and 29.1 days at concentrations that might be expected if the chemical is applied for forestry uses. It is stable to hydrolysis at neutral and alkaline pHs, and has a half-life of 3 weeks at pH 5.0, 25°C and >30 days at 15°C.

Breakdown of chemical in vegetation: Metsulfuron-methyl is rapidly taken up by plants at the roots and on foliage. The chemical is translocated throughout the plant, but is not persistent. It is broken down to non-herbicidal products in tolerant plants.

Section 13. Disposal Considerations

Disposal Method: Dispose of this product only by using according to the label or at an approved landfill. Container Disposal: Triple rinse container and add rinsate to spray tank. Empty containers and product should not be burnt. Dispose of container in a suitable landfill or take to an Agrecovery collection site. Do not use container for any other purpose.

Precautions: Do not allow product to enter waterways.

Disposal methods to avoid: Do not burn product or container.

Section 14 Transport Information

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

Road and Rail Transport

UN No:	3077
Class-primary	9
Packing Group	III
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, (Metsulfuron)

Air Transport

UN No:	3077
Class-primary	9
Packing Group	III
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, (Metsulfuron)

Marine Transport

UN No:	3077
Class-primary	9
Packing Group	III
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, (Metsulfuron)
Marine Pollutant	Yes

Special Provisions:

If the product's individual container is below 5L/kg, it can be transported as a non-DG as long as the product packaging is still labelled as per DG requirements and the driver is given safety information in accordance with Chapter 3.4 of the UNRTDG.

Section 15 Regulatory Information

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

HSNO Approval Code: HSR000242

HSNO Classification: Eye irritation Category 2, Hazardous to the aquatic environment acute Category 1, Hazardous to the aquatic environment chronic Category 1, Hazardous to soil organisms.

Refer to EPA website www.epa.govt.nz for controls document - HSR000242

HSW (HS) Regulations 2017	**Trigger Quantity**
Signage Trigger Quantities (Schedule 3)	100kg (9.1A)
Emergency Response Plan (Schedule 5)	100kg (9.1A)
Secondary Containment (Schedule 5)	100kg (9.1A)
Tracking (Schedule 26)	Not required
HSW (Hazardous substance) Regulations Part 4 Certified Handlers and supervision and training of workers	HSW Reg 4.5 – 4.6 Information, instruction, training and supervision.
HSNO Additional Controls or Variations to Notices	
Variation to Labelling Notice	Clause 20 of the Labelling Notice does not apply to this substance.
Variation to Hazardous Property Controls Notice Part 4B	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:0.084 kg ai/ha, a maximum of 3 times per year with a minimum application interval of 30 days.
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.
Other: Tolerable Exposure Limits (TEL)	A $TEL_{drinking}$ water has been set for metsulfuron-methyl. The TEL value is 0.04 mg/L.
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 – 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.
Permission	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.
Other: Environmental Exposure Limits (EEL)	An EEL_{water} has been set for metsulfuron-methyl. The EEL value is 0.0084 µg/L.
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 – 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.
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 5 m during daylight hours.
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.
Hazardous Property Controls Notice 2017	
HPC Notice Part 1	Hazardous Property Controls preliminary provisions
HPC Notice Part 3	Hazardous substances in a place other than a workplace
HPC Notice Part 4 Subpart A	Substances that are hazardous to the environment: Site and storage controls
HPC Notice Part 4 Subpart B	Use of substances that are hazardous to the environment
HPC Notice Part 4 Clause 47	Equipment for environmentally hazardous substances must be appropriate
HPC Notice Part 4 Clause 48	Record of application of agrichemicals
HPC Notice Part 4 Subpart C	Qualifications required for the application of substances that are hazardous to the environment
ACVM Act and Regulations	
ACVM Approval No See www.foodsafety.govt.nz for registration controls	P7371

Section 16 Other Information

Glossary

ACVM	Agricultural Compounds and Veterinary Medicines Act 1997.
EC50	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority.
HSNO	Hazardous Substances and New Organisms Act 1996.
HSW	Health and Safety at Work Act 2015.
HSW (HS) Regulations	Health and Safety at Work (Hazardous Substances) Regulations 2017.
LC50	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD50	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
UEL	Upper Explosive Level.
WES	Workplace Exposure Limit.

References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017
2. Workplace Exposure Standards and Biological Exposure Indices Nov 2017 edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433
5. HSW (Hazardous Substances) Regulations 2017

Disclaimer:

This document has been issued by Adama New Zealand Ltd and serves as their Safety Data Sheet ('SDS'). It is based on information concerning the product which is held by Adama New Zealand Ltd or has been obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. While Adama New Zealand Ltd have taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, Adama New Zealand Ltd accept no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS. The information herein is given in good faith, but no warranty, express or implied is made.

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