SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	**Adama Di-Bak G Herbicide**
Chemical name of active ingredient:	Glyphosate present as the mono-ammonium salt
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
E-mail:	nzorders@adama.com
Emergency Telephone:	**0800 764 766 (National Poison Centre)** **0800 734 607 (24hr Emergency Response)**
Date of SDS Preparation:	13 June 2023

Section 2. Hazards Identification

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

HSNO Approval No: HSR101552

Pictograms

Signal Word: **WARNING**

HSNO Classification	Hazard Code	Hazard Statement
Eye irritation Category 2	H319	Causes serious eye irritation.
Hazardous to the aquatic environment chronic Category 2	H411	Toxic to aquatic life with long-lasting effects.

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.
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 + P317 + 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	No statement.

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. Do not allow product to enter waterways. Do not burn product or container.

Section 3. Composition / Information on Ingredients

Ingredients	Wt%	CAS NUMBER.
Glyphosate present as the mono-ammonium salt	70	114370-14-8
Non-hazardous ingredients	To bal	-

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes — Intact capsules are unlikely to be a hazard. If capsules break open gently brush granules away and hold eyes open and flood with clean water. If eye irritation persists: Get medical advice.

If on Skin — Intact capsules are unlikely to be a hazard. If capsules break open gently brush granules away and remove contaminated clothing. Wash skin with water.

If Swallowed — If swallowed do NOT induce vomiting. Give a glass of water. Rinse mouth thoroughly with water. If poisoning occurs, call a POISON CENTER or doctor/physician.

If Inhaled — Intact capsules are unlikely to be a hazard. Remove to fresh air and observe until recovered. If effects persist, seek medical advice. Over-exposure by inhalation is unlikely.

Most important symptoms and effects, both acute and delayed
Symptoms:
Ingestion: Not applicable.
Inhalation: Not applicable
Skin: Not applicable.
Eye: May cause serious eye irritation.
Chronic: Not applicable.
Aspiration: Not applicable.

Section 5. Fire Fighting Measures

Hazard Type	Not Flammable
Hazards from combustion products	Product is likely to decompose with strong heating and will emit toxic fumes. Firefighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or smoke.
Suitable Extinguishing media	Not flammable. Low risk of explosion if involved in a fire. Extinguish fire using media suited to burning material. If possible, avoid using water as water dissolves the capsules releasing the chemical. If containers are ruptured contain all runoff.

Precautions for firefighters and special protective clothing	Isolate fire area. Evacuate downwind residents. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke or vapours generated.
HAZCHEM CODE	**2Z**

Section 6. Accidental Release Measures

Wear full protective clothing as detailed in Section 8. Evacuate area from unnecessary personnel. Remove ignition sources.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not allow into any sewer, on the ground or into any body of water. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up
Absorb remainder in sand or other inert material. Avoid using sawdust or other combustible materials. Dispose of in an authorized waste collecting point. Dispose as per Local Regulations.

Section 7. Handling and Storage

Precautions for Handling:
- Read label before use.
- Wash hands thoroughly after handling.
- When mixing or applying wear appropriate protective clothing including eye protection.
- Avoid unintended release into the environment.

Precautions for Storage:
- Store away from incompatible materials listed in Section 10.
- Keep away from children.
- 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 must be carried out in such a manner as to prevent contamination of waterways. Stores containing more than 1000 kg of Adama Di-Bak G Herbicide require bunding and are subject to signage. Storage must generally be in accordance with The New Zealand Standard for the Management of Agrichemicals (NZS8409).

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 tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices NOV 2017 9TH EDITION.

Engineering Controls
No special ventilation requirements are normally necessary for this product
However, make sure that the work environment remains clean and that dusts are minimized.

Personal Protection Equipment

Eyes	Safety goggles or face shield.
Hands and Skin	Prevent skin contact by wearing impervious gloves. Make sure that all skin areas are covered. Chemical resistant gloves. Use protective clothing of rubber or PVC.
Respiratory	Usually, no respirator is necessary when using this product.

Section 9 Physical and Chemical Properties

Appearance	Clear gelatine capsule filled with beige granules
Odour	No odour
Odour Threshold	Not applicable
pH	Not available
Boiling Point	Not available
Freezing Point	Not applicable
Flash Point	Not applicable
Flammability	Not flammable
Vapour Pressure	Not available
Bulk Density	Not applicable
Specific Gravity	Not applicable
Solubilities in water	Soluble. Capsule will disintegrate in water. Granules are soluble.
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	Product is considered stable in ambient conditions for a period of at least 2 years after manufacture.
Reactivity	This product is unlikely to react or decompose under normal storage conditions.
Conditions to Avoid	DO NOT store for prolonged periods in direct sunlight.
Incompatible Materials	Water, as water dissolves the capsules.
Hazardous Decomposition Products	This product is likely to decompose only after being exposed directly to fire. Hazardous decomposition products include oxides of carbon.

Section 11 Toxicological Information

No specific data is available for this product as no toxicity tests have been conducted on this product. Information presented is our best judgement based on individual components. As with all products for which limited data is available, caution must be exercised through the use of protective equipment and handling procedures to minimise exposure.

Potential Health Effects:

ACUTE EFFECTS

Swallowed: Low acute toxicity. Direct ingestion may produce gastro-intestinal discomfort, nausea, vomiting and diarrhoea. Ingestion of a large quantity of the undiluted product may result in hypotension and pulmonary oedema. Acute Oral LD50 > 5,000 mg/kg.

Eye: Intact capsules are unlikely to be a hazard. If capsule is opened the granules may cause physical irritation of the eyes.

Skin: Intact capsules are unlikely to be a hazard. If capsule is opened the granules may be irritating to the skin. Acute dermal LD50 > 5,000 mg/kg.

Inhaled: Intact capsules are unlikely to be a hazard.

Long Term Exposure:
Chronic toxicity: Studies of glyphosate lasting up to 2 years, have been conducted with rats, dogs, mice, and rabbits, and with few exceptions no effects were observed. Laboratory studies show that glyphosate produces reproductive changes in test animals very rarely and then only at very high doses (over 150 mg/kg/day). It is unlikely that the compound would produce reproductive effects in humans.

Glyphosate does not appear to be teratogenic, mutagenic or carcinogenic.

Section 12. Ecotoxicological Information

Environmental Toxicology: Glyphosate is not harmful to wild birds. The dietary LC50 in both mallards and bobwhite quail is greater than 4500 ppm. Technical glyphosate acid is practically nontoxic to fish and may be slightly toxic to aquatic invertebrates. The reported 96-hour LC50 values for other aquatic species include greater than 10 mg/L in Atlantic oysters, 934 mg/L in fiddler crab, and 281 mg/L in shrimp. The 48-hour LC50 for glyphosate in Daphnia (water flea), an important food source for freshwater fish, is 780 mg/L. Some formulations may be more toxic to fish and aquatic species due to the surfactants used in the formulation. There is a very low potential for glyphosate to build up in the tissues of aquatic invertebrates or other aquatic organisms. Glyphosate is nontoxic to honeybees. It's oral and dermal LD50 is greater than 0.1 mg/bee. The reported contact LC50 values for earthworms in soil are greater than 5000 ppm.

Environmental Fate: Glyphosate is moderately persistent in soil, with an estimated average half-life of 47 days. Reported field half-live's range from 1 to 174 days. It is strongly adsorbed to most soils, even those with lower organic and clay content. In water, glyphosate is strongly adsorbed to suspended organic and mineral matter and is broken down primarily by microorganisms. Its half-life in pond water ranges from 12 days to 10 weeks. Glyphosate may be translocated throughout the plant, including to the roots. It is extensively metabolized in some plants, while remaining intact in others.

Section 13. Disposal Considerations

Disposal Method: 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 before puncturing and offering for recycling or landfill.

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

Road and Rail Transport

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

Air Transport

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

Marine Transport

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

Special Provisions:

If the product's individual container is below 5kg, 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: HSR101552

HSNO Classification: Eye irritation Category 2, Hazardous to the aquatic environment chronic Category 2.

HSW (HS) Regulations 2017	**Trigger Quantity**
Certified Handler	Not required
Location Certificate	Not required
Signage Trigger Quantities (Schedule 3)	1000 kg
Emergency Response Plan (Schedule 5)	1000 kg
Secondary Containment (Schedule 5)	1000 kg
Tracking (Schedule 26)	Not required
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 Subpart C	Qualifications required for the application of substances that are hazardous to the environment

Section 16 Other Information

Glossary

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.
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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