



SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product: **FLASH® HERBICIDE**
Item code:
Product Use: Herbicide for the control of certain broadleaf and grass weeds.
Restriction of Use: May only be used for agricultural or biosecurity purposes effective from 11/12/2020. See Section 15.

New Zealand Supplier: ADAMA New Zealand Ltd
Address: Level 1/93 Bolt Road
Tahunanui, Nelson 7011
Telephone: +64 3 543 8275 (weekdays)
Fax Number: +64 3 543 8274

**Emergency Telephone: 0800 764 766 (National Poison Centre)
0800 734 607 (24hr Emergency Response)**

Date of SDS Preparation: 25 August 2021

Section 2. Hazards Identification

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

EPA Approval No: HSR000828

Pictograms



Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement
Acute oral toxicity Category 3	H301	Toxic if swallowed.
Acute inhalation toxicity Category 1	H330	Fatal if inhaled.
Skin irritation Category 2	H315	Causes skin irritation.
Eye irritation Category 2	H319	Causes serious eye irritation.
Specific target organ toxicity (repeated exposure) Category 1	H372	Causes damage to organs through prolonged or repeated exposure.
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 terrestrial vertebrates	H432	Toxic to terrestrial vertebrates.
Hazardous to terrestrial invertebrates	H442	Toxic to terrestrial invertebrates.

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.
P260	Do not breathe spray mist.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid unintended release to the environment.
P280	Wear protective clothing as detailed in Section 8.
P284	Wear respiratory protection.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P301 + P310 + P330	IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER or doctor/physician.
P302 + P313 + P332 + P352	IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/ attention.
P304 + P310 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
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.
P320/321	Specific treatment is urgent - read first aid instructions on this label.
P362 + P364	Take off contaminated clothing and wash before re-use.
P391	Collect spillage.

Storage Code	Storage Statement
P405	Store locked up.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

Disposal Code	Disposal Statement
P501	Triple rinse empty container and add rinsate to spray tank. Submit clean empty container to an Agrecovery® depot for recycling. Alternatively, puncture and bury in a suitable landfill. Avoid contamination of any water supply with product or empty container.

Section 3. Composition / Information on Ingredients

This substance is a mixture

Ingredients	Weight %	CAS NUMBER.
Paraquat (as dichloride)	25	1910-42-5
Other ingredients	<10	Proprietary
Water	To 100	7732-18-5

Contains emetic (PP796) and stenching agent (pyridine).

Section 4. First Aid Measures

IF POISONING IS SUSPECTED, RUSH VICTIM TO THE NEAREST HOSPITAL AFTER ALERTING THEM BY TELEPHONE.

Routes of Exposure:

If Swallowed Rinse mouth. Take to the nearest hospital immediately after alerting them by telephone. For advice contact the National Poisons Centre 0800 POISON (0800 764 766) or a doctor immediately.

If on Skin	Remove contaminated clothing by cutting rather than pulling over the head. DO NOT SCRUB SKIN. Wash the affected area with water and soap. Wash contaminated clothes before re-use. If skin irritation occurs: get medical advice/attention.
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, call a doctor/physician.
If Inhaled	Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing has stopped, DO NOT USE DIRECT MOUTH TO MOUTH METHOD. Use alternative respiratory or proper respiratory device. Take to the nearest hospital immediately after alerting them by telephone. For advice contact the National Poisons Centre 0800 POISON (0800 764 766) or a doctor immediately.

Most important symptoms and effects

Acute symptoms	Symptoms and speed of progression depend upon the quantity ingested. Immediate symptoms of poisoning may include vomiting. This may be followed by pain and swelling of the mouth and throat, abdominal pain and diarrhea (which may become bloody).
Delayed symptoms	Symptoms and speed of progression depend upon the quantity ingested. Mouth and throat ulceration, heart failure, kidney failure, liver failure, hypotension, tachycardia, cough, pulmonary fibrosis, deteriorating lung function, gastrointestinal ulceration, pancreatitis, toxic myocarditis, toxic myocarditis and coma may occur within hours to weeks dependent on dose.

Note to physician: There is no specific antidote. The most important measures are the immediate neutralization of ingested paraquat by activated charcoal, 15% Fuller's earth, or bentonite. Urgent removal of the poison by vomiting or, when possible, gastric lavage. The urgency of these measures is such that, where transfer to hospital may involve a delay of an hour or more, the emergency treatment may need to be given by a paramedical person, e.g., a nurse or a medical assistant, without any delay.

Section 5. Fire Fighting Measures

Hazard Type	Non-Flammable or combustible. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
Hazards from combustion products	Product is likely to decompose only after heating to dryness, followed by further strong heating. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.
Suitable Extinguishing media	Small fire: Dry chemical, CO ₂ or water spray. Large fire: Water spray, fog or foam. Do not use water jets. Use water spray for cooling of unaffected stock to avoid accumulation of polluted run-off from the site.
Precautions for firefighters and special protective clothing	Protective clothing and self-contained breathing apparatus should be worn to prevent skin contamination and breathing of toxic fumes. Do not enter fire area without proper protective equipment.
HAZCHEM CODE	2X

Section 6. Accidental Release Measures

Evacuate area of bystanders and unnecessary personnel.
Prevent smoking or the use of naked flames in the immediate vicinity.
Wear full protective clothing as detailed in Section 8 to deal with leak or spill.

Environmental precautions

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Prevent material or run-off from entering waterways by activating emergency shutoff systems or inserting drain covers.

Prevent contaminating other cargo or vegetation using the most readily available barrier material e.g. sand, earth.

If the product has contaminated surface water sources or sewers, inform the appropriate authorities.

Methods and material for containment and cleaning up

Empty any product remaining in damaged or leaking containers into a clean empty container and label immediately.

Absorb spilt material onto sand, vermiculite or other suitable absorbent material and sweep or shovel spills into appropriate labelled container for disposal.

Wash area with water and alkaline detergent and absorb any remaining liquid with further inert material.

Dispose of waste safely at an approved facility as per Local Regulations.

Section 7. Handling and Storage

This substance must be under the control of a certified handler.

This substance must be appropriately secured from access by persons other than a certified handler.

Location Compliance Certificate required for stores containing $\geq 50L$ if the substance is to be present for a period exceeding 2 hours (unless on a farm of not less than 4 ha when the trigger quantity is $> 100L$).

Precautions for Handling:

- Keep out of reach of children.
- Read label before use.
- Do not breathe spray mist.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Avoid unintended release to the environment.
- Wear protective clothing as detailed in Section 8.
- Wear respiratory protection.

Precautions for Storage:

- Keep away from children.
- Store in the original, container tightly closed and in a locked, dry, cool, well ventilated area, out of direct sunlight and away from stock feed or foodstuffs.
- As an environmentally hazardous substance with Ecotoxicity Classifications storage of Flash Herbicide must be carried out in such a manner as to prevent contamination of waterways. Secondary containment and emergency response plans are required where $\geq 100 L$ of this product are stored. It is recommended that The New Zealand Standard for the Management of Agrichemicals (NZS8409) is followed.
- Avoid all unnecessary exposure.

Section 8 Exposure Controls / Personal Protection

Occupational Exposure Limits:

WORKPLACE EXPOSURE STANDARDS

Ingredient	CAS No	TWA	STEL
Paraquat	4685-14-7	0.1 mg/m ³ (respirable dust)	-
Pyridine	110-86-1	1 ppm / 3.2 mg/kg (skin)	-

Workplace Exposure Standard – Time Weighted Average (TWA). *The average airborne concentration of a substance calculated over an eight-hour working day.*

Workplace Exposure Standard – Short Term Exposure Limit (STEL). *The 15-minute time weighted 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.*

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The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Exposures at concentrations between the WES-TWA and the WES-STEL should be less than 15 minutes, should occur no more than four times per day, and there should be at least 60 minutes between successive exposures in this range.

Engineering Controls:

Enclosure and isolation are the most reliable protection measure if exposure cannot be eliminated.

Store in a well-ventilated area.

Maintain air concentrations below occupational exposure standards.

Personal Protection Equipment:



Eye protection	Always wear tightly fitting safety goggles or a face shield. Avoid wearing contact lenses.
Hand protection	Wear elbow length chemical resistant gloves resistant to chemical penetration (e.g. PVC or nitrile).
Skin / body protection	Wear non-absorbent footwear and chemical resistant apron or coveralls. Contaminated clothing should be removed immediately and laundered separately from domestic laundry before reuse.
Respiratory	When workers are facing concentrations above the exposure limit, they must use appropriate certified respirators. Suitable respiratory equipment: Air-purifying mask respirator with organic vapor cartridge(s) in combination with a particulate filter. The filter class of the respirator must be suitable for the maximum expected concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Section 9 Physical and Chemical Properties

Physical state	Liquid
Appearance	Clear dark blue
Odour	Obnoxious pyridine odour
Odour Threshold	No data
pH	5 – 6.5
Boiling Point	Approx. 100 °C at 100 kPa
Freezing/Melting Point	Approx. 0°C
Flash Point	Not applicable
Flammability	Not flammable
Upper and Lower Exposure Limits	No data
Vapour Pressure	No data
Vapour Density	No data
Specific Gravity	1.08-1.10
Solubilities	Soluble in water
Partition Coefficient:	log Pow: -4.5 (20°C) (paraquat dichloride)
Auto-ignition Temperature	Not applicable
Viscosity, dynamic	No data
Particle Characteristics	Not applicable
Volatiles	Water component

Section 10. Stability and Reactivity

Chemical reactivity	This product is stable under normal conditions.
Hazardous reactions	Corrosive in contact with metals
Conditions to Avoid	Do not store in metal containers that have not be treated with an appropriate lining material
Incompatible Materials	Aluminum, mild steel, iron.
Hazardous Decomposition Products	Combustion or thermal decomposition will evolve toxic and irritant vapours.

Section 11 Toxicological Information

Acute Toxicity:

Oral toxicity	Toxic if swallowed.	LD ₅₀ (similar product) 612 mg/kg (Rat, female) 707 mg/kg (Rat, male)
Inhalation toxicity	Fatal if inhaled.	LC ₅₀ (4 h) (similar product) 0.02 mg/L (Rat) Method: Calculation method
Respiratory irritation	Not applicable	
Skin corrosion/irritation	Causes skin irritation.	
Eye damage / irritation	Causes serious eye irritation.	
Respiratory / Skin sensitization	Not applicable	
Aspiration Hazard	Not applicable	

Chronic Toxicity:

Germ Cell Mutagenicity	Not applicable.
Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Causes damage to organs through prolonged or repeated exposure.
Narcotic effects	Not applicable

Toxicological effects

Mild or subacute poisoning: <20 – 30 mg paraquat ion/kg body weight.

- Asymptomatic or mild gastrointestinal symptoms.
- Renal and hepatic lesions are minimal or absent.
- An initial decrease of the pulmonary diffusion capacity may be present.
- Complete recovery would be expected.

Moderate to severe acute poisoning: >20 – 30 but <40 – 50 mg paraquat ion/kg body weight.

- Immediate: vomiting.
- Hours: diarrhoea, abdominal pain, mouth and throat ulceration.
- One to four days: renal failure, hepatic impairment, hypotension and tachycardia.
- One to two weeks: cough, haemoptysis, pleural effusion, pulmonary fibrosis with deteriorating lung function.
- Survival is possible, but in the majority of cases death occurs within 2 – 3 weeks from pulmonary failure.
- **Fulminant or hyperacute poisoning:** >40 – 55 mg paraquat ion/kg body weight.
 - Immediate: vomiting
 - Hours to days: diarrhoea, abdominal pain, renal and hepatic failure, gastrointestinal ulceration, pancreatitis, toxic myocarditis, refractory hypotension, coma.
 - Death from cardiogenic shock and multi-organ failure occurs within 1-4 days

Section 12. Ecotoxicological Information

HSNO Classifications: Hazardous to the aquatic environment acute Category 1, Hazardous to the aquatic environment chronic Category 1, Hazardous to terrestrial vertebrates, Hazardous to terrestrial invertebrates.

Paraquat

Ecotoxicity effects	Endpoint / Time/ Value / Unit / Organism
Toxicity to fish	LC ₅₀ (96 h) = 8.3 mg/L rainbow trout (similar product)
Toxicity to aquatic invertebrates	EC ₅₀ (24 h) = 6 mg/l <i>Daphnia magna</i> (similar product)
Toxicity to algae	EC ₅₀ (72 h) = 0.34 mg/L <i>Pseudokirchneriella subcapitata</i> (similar product)
Toxicity to birds	LD ₅₀ (8 d) = 262-380 mg/kg hens (active ingredient)
Toxicity to soil organisms	LC ₅₀ (14 days) = 262-380 mg/kg earthworms (active ingredient)
Toxicity to Bees	LD ₅₀ (72 h, oral) = 36 µg/bee (active ingredient) LD ₅₀ (72 h, contact) = 150 µg/bee (active ingredient)
Persistence and degradability (product)	Not readily biodegradable.
Bioaccumulative potential (product)	Does not bioaccumulate.
Soil mobility	Immobile in soil. Low leaching potential. Very persistent: DT ₅₀ = 20 y Percentage dissipation: 50% Strong adsorption of paraquat to soil minerals and organic matter.
Aqueous photolysis	Stable
Aqueous hydrolysis	Stable
Bioconcentration factor	Low risk

Do not allow this substance to enter waterways.

Section 13. Disposal Considerations

Container Disposal Triple rinse empty container and add rinsate to spray tank. Submit clean empty container to an Agrecovery[®] depot for recycling. Alternatively, puncture and bury in a suitable landfill. Avoid contamination of any water supply with product or empty container.

Product Disposal Dispose of this product only by using according to the label, or through the Agrecovery[®] Chemical Recovery service or other approved facility.



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: 3016
 Class-primary 6.1
 Packing Group III
 Proper Shipping Name: BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC

Air Transport

UN No: 3016
 Class-primary 6.1
 Packing Group III
 Proper Shipping Name: BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC

Marine Transport

UN No: 3016
 Class-primary 6.1
 Packing Group III
 Proper Shipping Name: BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC
 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.

EPA Approval Code: HSR000828

HSNO Classification: Acute oral toxicity Category 3, Acute inhalation toxicity Category 1, Skin irritation Category 2, Eye irritation Category 2, Specific target organ toxicity (repeated exposure) Category 1, Hazardous to the aquatic environment acute Category 1, Hazardous to the aquatic environment chronic Category 1, Hazardous to terrestrial vertebrates, Hazardous to terrestrial invertebrates.

HSW (HS) Regulations 2017 and EPA Notices	Trigger Quantity
Certified Handler	Any
Location Compliance Certificate	50kg/L
Tracking Trigger Quantities	Any
Signage Trigger Quantities	50L/kg
Emergency Response Plan	100L
Secondary Containment	100L
HSNO Additional Controls (Restrictions of use)	
Restrictions of Use- 77A This substance may only be used for agricultural and biosecurity purposes; the latter requires 95A permission (effective 11/12/2020). No person shall pack for sale or supply this substance unless it contains a stenching agent and an effective emetic. Maximum application rates apply to this substance (effective 11/12/2020). Buffer zones apply to this substance (effective 11/12/2020). Restrictions on method of application apply to this substance (effective 11/12/2020).	

Hazardous Property Controls Notice 2017	
HPC Notice Part 1	Hazardous Property Controls preliminary provisions
HPC Notice Part 2	Certain substances restricted to workplaces only
HPC Notice Part 4 Subpart A	Substances that are hazardous to the environment: Site and storage controls
HPC Notice Part 4 Clause 47	Equipment for environmentally hazardous substances must be appropriate
HPC Notice Part 4 Clause 48	Records of application of agrichemicals that are hazardous to the aquatic environment
HPC Notice Part 4 Clause 52	Agrichemicals that are hazardous to the aquatic environment must not be applied to water
HPC Notice Part 4 Subpart C	Qualifications required for the application of substances that are hazardous to the environment
ACVM Act and Regulations	
Registered pursuant to the ACVM Act 1997, See www.foodsafety.govt.nz for registration conditions	No. P007431

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.
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 5433:2012
5. HSW (Hazardous Substances) Regulations 2017
6. PARAQUAT POISONING: a practical guide to diagnosis, first aid and medical management Revision 8
7. IPCS Health and Safety Guide No 51: Paraquat

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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