



SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product: **Karmex 900**
Name of active Ing: Diuron
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: 19 September 2023

Section 2. Hazards Identification

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

HSNO Approval No: HSR101085

Pictograms



Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement
Acute oral toxicity Category 4	H302	Harmful if swallowed.
Carcinogenicity Category 2	H351	Suspected of causing cancer.
Reproductive toxicity Category 2	H361	Suspected of damaging fertility or the unborn child.
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 soil organisms	H421	Very toxic to the soil environment.
Hazardous to terrestrial vertebrates	H432	Toxic to terrestrial vertebrates.

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid unintended release into the environment.
P280	Wear protective clothing and use personal protective equipment as detailed in Section 8.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P301 + P312 + P330	IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P314	Get medical advice/attention if you feel unwell.
P391	Collect spillage.

Storage Code	Storage Statement
P405	Store locked up.

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.
Diuron	86 - 95	330-54-1
Proprietary Surfactants	<1	NA

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes	Rinse cautiously with water for several minutes. If needed get medical advice.
If on Skin	Wash with plenty of soap and water. If needed get medical advice.
If Swallowed	Rinse mouth. Give copious water to drink. 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. Get medical advice if breathing becomes difficult. Call a POISON CENTRE or doctor if you feel unwell.

Most important symptoms and effects, both acute and delayed

Symptoms:

Inhaled: Not applicable.

Ingestion: Harmful if swallowed. Nausea, headaches, cramps, vomiting

Skin: Not applicable.

Eyes: Not applicable.

Chronic: Central nervous system depression, Gastrointestinal disturbance, Liver and Kidney injury may occur from repeated exposure. Suspected of causing cancer. Suspected of damaging fertility or the unborn child.

Section 5. Fire Fighting Measures

Hazard Type	Non Flammable granular solid.
Hazards from combustion products	Carbon oxides, nitrogen oxides (NOx), Hydrogen chloride gas.
Suitable Extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Precautions for firefighters and special protective clothing	In the event of fire, wear self-contained breathing apparatus In the event of fire and/or explosion do not breathe fumes.
HAZCHEM CODE	2Z

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Wear full protective clothing as detailed in Section 8. Evacuate area from unnecessary personnel. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal and dispose of according to Section 13.

Section 7. Handling and Storage

Precautions for Handling:

- Do not handle until all safety precautions have been read and understood.
- Do not breathe dust.
- Avoid contact with skin and eyes.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Avoid unintended release into the environment.
- Use personal protective equipment as required (see section 8 of this SDS).

Precautions for Storage:

- Store away from incompatible materials listed in Section 10.
- Keep away from children.
- Keep container tightly closed in a dry and well-ventilated place.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA		STEL	
	ppm	mg/m ³	ppm	mg/m ³
Diuron [330-54-1]	-	10	-	-

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.

Engineering Controls

Ensure adequate ventilation, especially in confined areas. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal Protective Equipment



Eyes	Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Hands and Skin	Full personal protective clothing comprising coveralls buttoned to the neck, gloves impervious to the substance, hood, visor, sturdy covered footwear and a respirator must be worn when mixing, loading or applying this substance. Remove protective clothing and wash hands, arms and face with soap and water before meals and after work.
Respiratory	Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards.

Section 9 Physical and Chemical Properties

Appearance	Beige - Cream, Solid
Odour	Characteristic
Odour Threshold	Not applicable
pH	7 – 8 @ 20°C
Boiling Point	Not applicable
Melting Point	Not applicable
Flash Point	Not applicable
Flammability	Not flammable
Upper and Lower Exposure Limits	Not applicable
Vapour Pressure	Not applicable
Bulk Density	Not available
Bulk Density	Not available
Relative Density	0.56 – 0.62
Solubilities	Not determined
Partition Coefficient:	0.85 (21°C OECD 117 (n-octanol/water))
Auto-ignition Temperature	396°C

Viscosity, dynamic	Not applicable
Particle Characteristics	Not applicable

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Conditions to Avoid	Protect this product from light. Store in the closed original container in a dry, cool, well ventilated area out of direct sunlight.
Incompatible Materials	Strong alkalis, oxidizing substances and strong acids.
Hazardous Decomposition Products	No hazardous decomposition products if stored and handled as prescribed/indicated.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Harmful if swallowed. Diuron = 1017mg/kg (rat)
Dermal	Not applicable
Inhalation	Avoid inhalation of dust/mist.
Eye	Not applicable
Skin	Not applicable.

Chronic Effects:

Carcinogenicity	Suspected of causing cancer.
Reproductive Toxicity	Suspected of damaging fertility or the unborn child.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Causes damage to liver and kidneys through prolonged or repeated exposure.

Section 12. Ecotoxicological Information

Aquatic toxicity

Acute toxicity	Values	Species	Method	Remarks
Fish 96-hour LC50 mg/I	: 12.3	D. rerio		
Crustacea 48-hour EC50 mg/I	: 34.2	Daphnia magna		
Algae 72-hour EC50 mg/I	: 0.0144			
Other plants EC50 mg/I				No data available

Terrestrial Toxicity

Birds Oral LD50 mg/kg
Chemical Name

Diuron : 1104 Bobwhite quail

Bees Oral LD50 pg/bee

Chemical Name

Diuron : 145 contact, mg/kg

Persistence and degradability:

Soil DT50 days

Chemical Name

Diuron : 90-180

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Biodegradation
Chemical Name
Diuron : No data available

Bioaccumulative potential

Partition Coefficient (n-octanol/water) Partition Coefficient (n-octanol/water) Log Pow	Values	Method	Remarks
Chemical Name Diuron	: 2.85		25 °C

Mobility in soil

Adsorption/Desorption Chemical Name	Values	Method	Remarks
Diuron	: 400		Koc

Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB

Section 13. Disposal Considerations

Container Disposal – Triple rinse empty container and add rinsate to the spray tank. If recycling, discard cap and deliver clean container to an Agrecovery depot. Alternatively crush and bury in a suitable landfill. Dispose of product only by using according to the label, or at an approved landfill.

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: 3077
Class-primary: 9
Packing Group: III
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (DIURON)

Air Transport

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

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Marine Transport

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

Special Provisions:

If the product's individual container is below 5 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.

National transport regulations: Do not carry this product on a passenger service vehicle.

Section 15 Regulatory Information

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

HSNO Approval Code: HSR101085

HSNO Classification: Acute oral toxicity Category 4, Carcinogenicity Category 2
Reproductive toxicity 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 soil organisms, Hazardous to terrestrial vertebrates.

HSW (HS) Regulations 2017	Trigger Quantity
Certified Handlers	Not required
Location Certificate	Not required
Signage Trigger Quantities (Schedule 3)	100 L (9.1A)
Emergency Response Plan (Schedule 5)	100 L (9.1A)
Secondary Containment (Schedule 5)	100 L (9.1A)
Tracking (Schedule 26)	Not required
Record Keeping	Records of use must be kept under certain circumstances – see The New Zealand Standards for Management of Agrichemicals (NZS8409) for details.
HSNO Additional Controls and Modifications to Controls	
Variation to Hazardous Property Controls Notice Part 4B	This substance must not be applied at rates exceeding 3.6 kg diuron / ha per application (equivalent to 4 L of Diuron 900 / ha per application). This substance must not be applied to the same area more than 2 times per 365 day period and an interval of at least 90 days must be observed before the substance is reapplied to the same area.
Use restrictions	This substance must not be applied to any watercourse. Watercourse includes every river, stream, passage, and channel on or under the ground, whether natural or not, through which water flows, whether continuously or intermittently. Full PPE and respiratory protection must be worn when mixing, loading or applying this substance. Any person mixing, loading or applying this

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	substance must wear full personal protective equipment and respiratory protection (e.g. coveralls buttoned to the neck, gloves impervious to the substance, hood, visor, sturdy covered footwear and a respirator)
Application method restrictions	<p>This substance may only be applied via ground-based application methods. Ground-based methods of applying pesticides include, but are not limited to, application by ground boom, airblast or knapsack, and do not include aerial application methods.</p> <p>This substance may only be applied using low boom application methods. The minimum droplet size for applying this substance is a coarse spray droplet. Coarse spray as classified by the American Society of Agricultural & Biological Engineers (ASABE) droplet size classification scheme.</p>
Environmental Exposure Limits (EEL)	<p>An EEL_{fresh water} has been set for diuron. The EEL value is 0.2 µg/L.</p> <p>An EEL_{marine water} has been set for diuron. The EEL value is 1.8 µg/L.</p>
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	Site and storage controls for class 9 substances
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	P009491
See www.foodsafety.govt.nz for registration conditions.	

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:

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