SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	**Karmex 900 WG**
Item Code:	
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
Fax Number:	+64 3 543 8274
Emergency Telephone:	**0800 764 766 (National Poison Centre)**
Date of SDS Preparation:	4 October 2018

Section 2. Hazards Identification

This substance is hazardous according to the *Hazardous Substances (Classification) Notice 2017*

EPA Approval No: HSR101085

Pictograms

Toxic Chronic Ecotoxic

Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement	GHS Category
6.1D (oral)	H302	Harmful if swallowed.	Category 4
6.3B	H316	Causes mild skin irritation.	Category 3
6.7B	H351	Suspected of causing cancer.	Category 2
6.8B	H361	Suspected of damaging fertility or the unborn child.	Category 2
6.9A	H372	Causes damage to organs through prolonged or repeated exposure.	Category 1
9.1A	H410	Very toxic to aquatic life with long lasting effects.	Category 1
9.2A	H421	Very toxic to the soil environment.	
9.3B	H432	Toxic to terrestrial vertebrates.	

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.
P201	Obtain special instructions before use.
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 release to the environment.
P281	Use personal protective equipment as required.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.
P391	Collect spillage.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.

Storage Code	Storage Statement
P405	Store locked up.

Disposal Code	Disposal Statement
P501	Container Disposal – Ensure packaging is completely empty and crush 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.

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 skin irritation: get medical advice/attention.
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.	Causes mild skin irritation.
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:

- Read label before use.
- Obtain special instructions before use.
- 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 release to 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 ppm	TWA mg/m3	STEL ppm	STEL mg/m3
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^{0}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^{0}C OECD 117 (n-octanol/water)
Auto-ignition Temperature	396^{0}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	Causes mild skin irritation.

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

HSNO Classes: 9.1A = Very toxic to aquatic life with long lasting effects.
9.2A = Very toxic to the soil environment.
9.3B = Toxic to terrestrial vertebrates.

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

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	Values	Method	Remarks
Chemical Name			
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 – Ensure packaging is completely empty and crush 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 5433:2012

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)

Marine Transport

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

Special Provisions:

If the product's individual container is below 5L, 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 (Classification) Notice 2017*

EPA Approval Code: HSR101085

HSNO Classification: 6.1D (oral), 6.3B, 6.7B, 6.8B, 6.9A, 9.1A, 9.2A, 9.3B

HSW (HS) Regulations 2017	**Trigger Quantity**
Certified Handlers	Yes
Location Certificate	Not required
Signage Trigger Quantities (Schedule 3)	100L(9.1A)
Emergency Response Plan (Schedule 5)	100L(9.1A)
Secondary Containment (Schedule 5)	100L(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 (Restrictions of use)	
77A	See below and refer to controls document for full details.
Hazardous Property Controls Notice 2017	
HPC Notice Part 4 Clause 47	Equipment for class 9 substances must be appropriate
HPC Notice Part 4 Clause 48	Records of application of class 9 pesticides and plant growth regulators
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 C	Qualifications required for application of class 9 pesticides
For all further controls:	Refer to EPA website www.epa.govt.nz for controls document - HSR101085
ACVM Act and Regulations	
ACVM Approval No	P009491
See www.foodsafety.govt.nz for registration conditions.	

Restrictions of Use and additional Controls:

- This substance must not be applied to any watercourse.

- This substance must not be applied to any watercourses, drain, or irrigation channel through which water flows, whether continuously or intermittently.

- This substance may only be applied by ground-based methods using low boom coarse sprays

- This substance must not be applied at a rate greater than 3.6 kg (a.i.)/ha more than two times per year, with a minimum interval between applications of 90 days.

- Full PPE and respiratory protection must be worn when mixing, loading or applying this substance.

- Any person mixing, loading or applying this 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).

Section 16 Other Information

Glossary

EC50	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
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 5433:2012
5. HSW (Hazardous Substances) Regulations 2017

Disclaimer

This document has been issued by TCC (NZ) Ltd and serves as their Safety Data Sheet ('SDS'). It is based on information concerning the product which has been provided to TCC (NZ) Ltd or 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. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer. While TCC (NZ) 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, TCC (NZ) 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

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