SAFETY DATA SHEET

According to
HSNO Hazardous Substances (Safety Data Sheets) Notice 2017

Section 1. Identification of the material and the supplier

Product:	**Torus**
Product Use:	Herbicide
Restriction of Use:	Refer to Section 15
New Zealand Supplier:	**Adria Crop Protection Solutions**
Address:	407 State Highway 16 Kumeu 0841, Auckland
Telephone:	+64 9 412 9817
Fax:	+64 9 412 9807
Website:	www.adria.nz
Emergency No:	**0800 734 607 (24hr)3** **0800 764 766 (National Poison Centre)**
Date of SDS Preparation:	19 August 2019

Section 2. Hazards Identification

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

EPA Approval No: HSR000436

Pictograms:

Irritant Chronic Ecotoxic

Signal Word: **Warning**

HSNO Classification	Hazard Code	Hazard Statement	GHS Category
3.1D	H227	Combustible liquid.	Flam. Liq. 4
6.1E (oral)	H303	May be harmful if swallowed.	Acute Tox. 5
6.3B	H316	Causes mild skin irritation.	Skin Irrit. 3
6.4A	H319	Causes serious eye irritation.	Eye Irrit. 2A
6.9B	H373	May cause damage to organs through prolonged or repeated exposure.	STOT RE 2
9.1A	H410	Very toxic to aquatic life with long lasting effects.	Aquatic Chronic 1
9.2A	H421	Very toxic to the soil environment.	-

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.
P210	Keep away from heat, sparks, open flames or hot surfaces. No smoking.
P260	Do not breathe fumes, vapours or spray.
P264	Wash hands thoroughly after handling.
P273	Avoid release to 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.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P391	Collect spillage.
P305 + P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P370 + P378	In case of fire: Use dry chemical extinguisher, foam, carbon dioxide or waterspray for extinction.

Storage Code	Storage Statement
P403 + P235	Store in a well-ventilated place. Keep cool.

Disposal Code	Disposal Statement
P501	Refer to Section 13.

Section 3. Composition / Information on Hazardous Ingredients

Ingredients	Content (%w/v)	CAS NUMBER.
Carfentrazone-ethyl	24	128639-02-1
Non-hazardous	To bal	-

Section 4. First Aid Measures

Routes of Exposure:

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.

If on Skin — Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

If Swallowed — Do NOT induce vomiting. Wash mouth with water. 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: May be harmful if swallowed.
Inhalation: Not applicable.
Skin: Causes mild skin irritation.
Eye: Causes serious eye irritation.
Chronic: May cause damage to organs through repeated exposure.
Treatment: Treat according to symptoms (decontamination, vital functions).

Section 5. Fire Fighting Measures

Hazard Type	This product is combustible
Hazards from combustion products	Carbon and nitrogen oxides.
Suitable Extinguishing media	Dry chemical extinguisher, foam, carbon dioxide.
Recommended protective clothing & Precautions for firefighters	Wear SCBA and chemical-protective clothing.
HAZCHEM CODE	**3Z**

Section 6. Accidental Release Measures

Personal precautions:
Use protective clothing as per Section 8. Avoid contact with skin, eyes and clothing. Remove contaminated clothes and shoes immediately.

Environmental precautions:
Do not discharge into drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

Spill and Disposal procedures:
Absorb spills with inert material and place in waste containers. Wash area with water and absorb with further inert material. Dispose of waste safely, according to Local Council regulations.

Section 7. Handling and Storage

Precautions for Handling:
- Read label before use.
- Keep away from heat, sparks, open flames or hot surfaces. No smoking.
- Do not breathe fumes, vapours or spray.
- Wash hands after handling.
- Avoid contact with skin and eyes.
- Ventilation required.
- Keep away from heat sources and direct sunlight.
- Avoid release to the environment.
- Wear protective clothing as detailed in Section 8.

Precautions for Storage:
- Store away from incompatible materials listed in Section 10.
- Keep out of reach of children.
- Keep away from heat and protect from sunlight.
- Protect against freezing.
- Stores containing more than 100L are subject to requirement of an emergency management response plan, secondary containment and signage.

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 / Industrial Hygiene
Ensure adequate ventilation.

Personal Protection Equipment

Eyes	Safety goggles with side-shields.
Hands	Wear suitable gloves resistant to chemical penetration e.g. nitrile rubber gloves with a minimum thickness of 0.4 mm.
Skin	Body protection (chemical protection suit, boots) must be chosen depending on activity and possible exposure.
Respiratory	Wear respiratory protection if ventilation is inadequate. Particle filter with medium efficiency for solid and liquid particles.
General	Keep away from food, drink and animal feedstuffs. No eating, drinking or smoking during use. Wash hands and face before breaks and after work.

Section 9 Physical and Chemical Properties

Appearance	Liquid EW
Colour	White
Odour	Characteristic odour
Odour Threshold	Not available
pH	4.8
Boiling Point	Not available
Melting Point	Not available
Freezing Point	Not available
Flash Point	Not available
Flammability	Not available
Upper and Lower Explosive Limits	Not available
Vapour Pressure	Not available
Vapour Density	Not available
Density	1.06 g/L
Water Solubility	Not available
Partition Coefficient:	Not available
Ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available
Particle Characteristics	Not available

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions. Combustible.
Possibility of hazardous reactions	None known.
Conditions to Avoid	Temperature extremes.
Incompatible Materials	Oxidizing agents, acids and alkali.
Hazardous Decomposition Products	None known.

Section 11 Toxicological Information

Acute Effects:

Swallowed	May be harmful if swallowed. Carfentraazone-ethyl: Female rats LD50: 5,143mg/kg
Dermal	Not applicable. Carfentraazone-ethyl: Rats LD50: > 4,000mg/kg
Inhalation	Not applicable. Carfentraazone-ethyl: Rats LC50: > 5mg/l
Eye	Causes serious eye damage.
Skin	Causes mild skin irritation.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	May cause damage to organs through repeated exposure.

Section 12. Ecotoxicological Information

Ecological effects information	9.1A = Very toxic to aquatic life with long lasting effects. 9.2A = Very toxic to the soil environment.
Persistence and degradability	No data available
Bioaccumulation	No data available
Mobility in Soil	No data available
Other adverse effects	No data available
	(Based on the active ingredient Carfentraazone-ethyl):
Acute fish toxicity (based on active ingredient) [LC50 mg/L] (96 h):	1.6–43, depending on species
Toxicity for daphnia magna (based on active ingredient) [EC50 mg/L] (48 h):	9.8
Toxicity to aquatic plants (based on active ingredient):	EC50 (96 h) for eastern oysters 2.05, mysid shrimps 1.16 ppm. EC50 (14 d) for Lemna gibba 0.0057 mg/l.
Honeybee (based on active ingredient) [LD50 µg/bee]:	>35 (oral), >200 (contact)
Mallard Duck (based on active ingredient) [LC50]:	>5,620 ppm
Precautions:	Do not allow to enter waterways.

Section 13. Disposal Considerations

Disposal Method:
Triple rinse container and add residue to spray tank. Return empty container to an AgRecovery collection point for disposal.

Empty container precautions:
Avoid contamination of any water supply with chemical or empty container.
Precautions or methods to avoid: Avoid release to the environment.

Section 14 Transport Information

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

Road, Rail, Sea and Air Transport

UN No	3082
Class - Primary	9
Packing Group	III
Proper Shipping Name	**ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (carfentrazone-ethyl)**
Marine Pollutant	Yes
Special Provisions-Limited Quantities	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 classified hazardous according to the EPA Hazardous Substances (Classification) Notice 2017

EPA Approval Code: HSR000436

HSNO Classification: 3.1D, 6.1E(oral), 6.3B, 6.4A, 6.9B, 9.1A, 9.2A

HSW (HS) Regulations 2017	**Trigger Quantity**
Certified Handlers	Not required
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
For further information on and control document:	Refer to EPA www.epa.govt.nz for controls document - HSR000436
HSNO Additional Controls (Restrictions of use)	
77A	This substance must not be applied onto or into water.
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	Qualification required for application of class 9 pesticides.
ACVM Act and Regulations	
ACVM Approval No See www.foodsafety.govt.nz for registration controls	P9308

Section 16 Other Information

For proper and safe use of this product, please refer to the approval conditions laid down on the product label. The data contained in this safety data sheet is based on our current knowledge and describes the product only with regard to safety requirements. The data does not describe the products properties. Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any existing laws and legislation are observed.

Glossary

EC_{50}	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
HSW	Health and Safety at Work.
LC_{50}	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD_{50}	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 prepared by TCC (NZ) Ltd and serves as the suppliers 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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Please contact Adria, if further information is required.

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