SAFETY DATA SHEET

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

Section 1. Identification of the material and the supplier

Product:	**Nirvana**
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:	3 September 2018

Section 2. Hazards Identification

This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2017
EPA Approval No: HSR100096

Pictograms

Irritant Chronic Corrosive Ecotoxic

Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement	GHS Category
6.1E (oral)	H303	May be harmful if swallowed.	Acute Tox. 5
6.3A	H315	Causes skin irritation.	Skin Irrit. 2
6.8B	H361	Suspected of damaging fertility or the unborn child.	Repr. 2
6.9A	H372	Causes damage to organs through prolonged or repeated exposure.	STOT RE 1
8.3A	H318	Causes serious eye damage.	Eye Corr. 1
9.1C	H412	Harmful to aquatic life with long lasting effects.	Aquatic Chronic 3
9.2B	H422	Toxic to the soil environment.	
9.3C	H433	Harmful 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 fumes, vapours or spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective clothing as detailed in Section 8.
P281	Use personal protective equipment as required.

Response code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P310	Immediately call a POISON CENTER or doctor/physician.
P362	Take off contaminated clothing and wash before re-use.
P391	Collect spillage.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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	Refer to Section 13.

Section 3. Composition / Information on Hazardous Ingredients

Ingredients	Content (%w/v)	CAS NUMBER.
Glufosinate-ammonium	20.00	77182-82-2
Not 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 contaminated clothing before reuse. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

If Swallowed — If swallowed do NOT induce vomiting. For advice, contact the National Poisons Centre on 0800 POISON (0800 764766) or a doctor immediately.

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 skin irritation.
Eye:	Causes serious eye damage.
Chronic:	Suspected of damaging fertility or the unborn child. Causes damage to organs through repeated or prolonged exposure.
Treatment:	Treatment: Treat according to symptoms (decontamination, vital functions). No known specific antidote.

Section 5. Fire Fighting Measures

Hazard Type	This product is not flammable.
Hazards from combustion products	Specific hazards in a fire: carbon monoxide, hydrogen fluoride, nitrogen oxides.
Suitable Extinguishing media	Use water, foam, dry chemical, or carbon dioxide to extinguish fires.
Recommended protective clothing & Precautions for firefighters	Wear SCBA and chemical-protective clothing.
HAZCHEM CODE	**1Z**

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:

- Keep out of reach of children.
- Read label before use.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe fumes, vapours or spray.
- Ventilation required.
- Keep away from: sparks, open flame and direct sunlight.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Avoid release to the environment.
- Wear protective clothing as detailed in Section 8.
- Use personal protective equipment as required.

Precautions for Storage:

- Store away from incompatible materials listed in Section 10.
- Protect from temperatures above: 40°C.
- Store locked up.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA ppm	TWA mg/m³	STEL ppm	STEL 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 there is 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 and wash hands and face before breaks and after work. Wash contaminated clothing before re-use.

Section 9 Physical and Chemical Properties

Appearance	Liquid
Colour	Blue to Blue-Green
Odour	Characteristic
Odour Threshold	Not available
pH	6.4 – 6.8
Boiling Point	>100^{0}C
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	1.1 kg/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.
Possibility of hazardous reactions	Evolution of ammonia under influence of alkaline substances. Stable under normal conditions of use.
Conditions to Avoid	Excessive temperatures.
Incompatible Materials	None known.
Hazardous Decomposition Products	Specific hazards in a fire: carbon monoxide, hydrogen fluoride, nitrogen oxides.

Section 11 Toxicological Information

Acute Effects:

Swallowed	May be harmful if swallowed.
Dermal	Not applicable.
Inhalation	Not applicable.
Eye	Causes serious eye damage.
Skin	Causes skin irritation.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Suspected of damaging fertility or the unborn child.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Cause damage to organs through prolonged or repeated exposure.

Acute Toxicity -

Chemical Name	LD50 (Oral)	LD50 (Dermal)	LC50 (inhalation)
Glufosinate-ammonium (77182-82-2)	416mg/kg(mouse)	>2000mg/kg (rabbit)	1.26 mg/L (dust/mist (rat)

Section 12. Ecotoxicological Information

Ecological effects information	9.1C = Harmful to aquatic life with long lasting effects. 9.2B = Toxic to the soil environment. 9.3C = Harmful to terrestrial vertebrates.
Persistence and degradability	No data available
Bioaccumulation	No data available
Mobility in Soil	No data available
Other adverse effects	No data available
Acute fish toxicity:	LC50 710 mg/L Rainbow trout
Toxicity for daphnia:	LC50 560 – 1 000 mg/L
Toxicity to algae:	LD50 1 000 mg/L
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 NOT classified as a Dangerous Good for transport in NZ; NZS 5433:2012

Section 15 Regulatory Information

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

EPA Approval Code: HSR100096

HSNO Classification: 6.1E(oral), 6.3A, 6.8B, 6.9A, 8.3A, 9.1C, 9.2B, 9.3C

HSW (HS) Regulations 2017	**Trigger Quantity**
Certified Handlers	Not required
Location Certificate	Not required
Signage Trigger Quantities (Schedule 3)	1000L (9.1C)
Emergency Response Plan (Schedule 5)	1000L (9.1C)
Secondary Containment (Schedule 5)	1000L (9.1C)
Tracking (Schedule 26)	Not required
For all further controls	Refer to EPA www.epa.govt.nz for controls document - HSR100096
HSNO Additional Controls (Restrictions of use)	
77A	a). The maximum application rate for the substance shall be 10 L/ha (2.03 kg ai/ha), with a maximum of two applications per year and a minimum application interval of 90 days. b). The substance must not be applied onto or into water. c). The method of application of the substance shall be limited to ground-based application only.
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 4 Subpart A	Site and storage controls for class 9 substances
ACVM Act and Regulations	
ACVM Approval No See www.foodsafety.govt.nz for registration controls	P8007

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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