SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	**ETHOSAT 500 SC HERBICIDE**
Chemical name of active	Propane-1, 2-diol
Product Use:	Herbicide
Restriction of Use:	Refer to Section 15
New Zealand Supplier:	ADAMA New Zealand Ltd
Address:	Level 1/93 Bolt Road Tahunanui, 7011, 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: HSR000826

Pictograms

Ecotoxic

Signal Word: **Warning**

HSNO Classification	Hazard Code	Hazard Statement	GHS Category
9.1B	H411	Toxic to aquatic life with long lasting effects.	Aquatic Chronic 2
9.2A	H421	Very toxic to the soil environment.	

Prevention Code	Prevention Statement
P103	Read label before use.
P273	Avoid release to the environment.

Response Code	Response Statement
P391	Collect spillage.

Storage Code	Storage Statement
None allocated	Store in the original, unopened container in a cool, dry place, out of direct sunlight and away from stockfeed or foodstuffs.

	As a Class 9 Substance with Ecotoxicity Classifications, storage of Ethosat Herbicide must be carried out in such a manner as to prevent contamination of waterways. It is recommended that The New Zealand Standard for the Management of Agrichemicals (NZS8409) is followed

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.
Ethofumesate	44	26225-79-6
Non hazardous	To balance	NA

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes — Rinse cautiously with water for 15 minutes If eye irritation persists: Get medical advice/attention.

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

If Swallowed — Wash out mouth with plenty of water. Get medical attention. Never give anything by mouth to an unconscious person. 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.

Most important symptoms and effects, both acute and delayed
Symptoms:
Ingestion: Not applicable
Skin: Not applicable
Inhalation: Not applicable
Eyes: Not applicable
Chronic: Not applicable

Section 5. Fire Fighting Measures

Hazard Type	Non Flammable.
Hazardous thermal (de)composition products	Carbon oxides (CO, CO2) sulphur oxides (SO2, SO3).
Suitable Extinguishing media	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Precautions for firefighters and special protective clothing	Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
HAZCHEM CODE	**3Z**

Section 6. Accidental Release Measures

Personal Precautions:	Ensure suitable personal protection during removal of spillages. This means wearing eye protection, chemically resistant gloves, boots and overalls.
Environmental Precautions:	Washings must be prevented from entering surface water drains or waterways. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities...
Procedure for Spill:	(1) Keep all bystanders away. (2) Wear full length clothing and PVC gloves. (3) Reposition any leaking containers so as to minimise further leakage. (4) Dam and absorb spill with an absorbent material (e.g. sand, soil, diatomaceous earth or vermiculite). (5) Shovel the absorbed spill into drums. (6) Decontaminate the spill area with detergent and water and rinse with the smallest volume of water practicable.
Procedure for Disposal:	Disposal of the absorbed material will depend upon the extent of the spill. Contaminated material must be disposed of in accordance with all local authority requirements. • For quantities up to 50 L of product bury in a secure approved landfill site. • For quantities greater than 50 L seek advice from the manufacturer (use emergency contact number below) before attempting disposal. Contain in a secure location until disposal method is established.

Section 7. Handling and Storage

Precautions for Handling:

- Keep out of reach of children.
- Do not eat, drink or smoke while using.
- Ensure good ventilation
- When mixing or applying wear appropriate protective clothing including cotton overalls buttoned to the neck and wrist, impervious, elbow-length gloves, and eye protection.
- Remove protective clothing and wash hands, arms and face with soap and water before meals and after work.
- Avoid release into the environment.

Precautions for Storage:

- Store away from incompatible materials listed in Section 10.
- Store in the original, unopened container in a cool, dry place, out of direct sunlight and away from stockfeed or foodstuffs.
- As a Class 9 Substance with Ecotoxicity Classifications, storage of Ethosat Herbicide must be carried out in such a manner as to prevent contamination of waterways. It is recommended that The New Zealand Standard for the Management of Agrichemicals (NZS8409) is followed as a means of meeting the secondary containment provisions of the HSNO Emergency Management Regulations.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

	TWA		**STEL**	
Substance	**ppm**	**mg/m3**	**ppm**	**mg/m3**
Propane-1, 2-diol	150 ppm	474		

(total, vapor and particulates), 10 (particulates)

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
In workplace ensure good ventilation.

Personal Protection Equipment

Eyes	Safety goggles or face shield.
Hands and Skin	When mixing or applying wear appropriate protective clothing including cotton overalls buttoned to the neck and wrist, impervious, elbow-length gloves, and eye protection. Remove protective clothing and wash hands, arms and face with soap and water before meals and after work
Respiratory	If fumes build up, use suitable breathing mask.
General	Keep containers closed when not in use. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower. Wash hands thoroughly after handling. Wash clothing before re-using. When handling do not eat, drink or smoke. Wash hands thoroughly after handling. Wash clothing separately before re-use.

Section 9 Physical and Chemical Properties

Appearance	Liquid
Colour	Beige
Odour	Sweet
Odour Threshold	Not available
pH	Not available
Boiling Point	100^0C
Melting Point	70-72ºC
Freezing Point	Not available
Flash Point	Not available
Flammability	Not available
Upper and Lower Explosive Limits	Not available
Vapour Pressure (20^0C)	2,3 x 10e-6hPa (Ethofumesate ISO)
Density (g/ml)	1,1377 (20ºC)
Specific Gravity	Not available
Water Solubility	0,13 g/l (pH 5), 0,125 g/l (pH7), 0,132 g/l (pH9)
Partition Coefficient:	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	772 mPas
Particle Characteristics	Not available
Surface tension	44 mN/m (21,1ºC)

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Conditions to Avoid	Protect from frost

Incompatible Materials	None known.
Hazardous Decomposition Products	Carbon oxides (CO, CO2) sulphur oxides (SO2, SO3)

Section 11 Toxicological Information

Acute Effects:

Swallowed	Not applicable. Rat Oral LD 50 [mg/kg] >2000 (OECD 423)
Dermal	Not applicable. Rat dermal LD50 [mg/kg] >4000 (OECD 402)
Inhalation	Not applicable. Rat inhalation LC50 mg/l/4h]>4,29 (OECD 403)
Eye	Not applicable.
Skin	Not applicable.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Not applicable.

Section 12. Ecotoxicological Information

HSNO Classes: 9.1B = Toxic to aquatic life.
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

Individual component information (Please refer to www.epa.govt.co.nz for full details):
The following information is based on Ethofumesate
Toxic to fish: LC50 22-26,5 mg/l/96h, NOEC 9,3 – 9,7 mg/l/96h
Toxic to daphnia EC50 70,5 mg/l/48h, NOEC 20 mg/l/48h
EC50 >35 mg/l/21d, NOEC 11,1 mg/l/21d
Toxic to algae Scenedusmus suspicatus EbC50 6,65 mg/l/72h, ErC50 12,42 mg/l/72h
NOEC 3,5 mg/l/72h
Do not allow to enter waterways.

Section 13. Disposal Considerations

Disposal Method: - Triple rinse empty container and add rinsate to spray tank. Burn in an appropriate incinerator, if circumstances such as wind direction permit. Otherwise crush or puncture and bury in a suitable landfill, or if appropriate, recycle

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:	3082
Class-primary	9
Packing Group	III
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Ethofumesate)

Air Transport

UN No:	3082
Class-primary	9
Packing Group	III
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Ethofumesate)

Marine Transport

UN No:	3082
Class-primary	9
Packing Group	III
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Ethofumesate)
Marine Pollutant:	Yes

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.

Section 15 Regulatory Information

EPA Approval Code: HSR000826
HSNO Classification: 9.1B, 9.2A

HSW (HS) Regulations 2017 and EPA Notices	**Trigger Quantity**
Certified Handlers	Not Required
Location Certificate	Not required
Tracking Trigger Quantities	Not required
Signage Trigger Quantities	100L(9.2A)
Emergency Response Plan	1000L(9.1B)
Secondary Containment	1000L(9.1B)
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	Qualifications required for application of class 9 pesticides
ACVM Act and Regulations	
Registered pursuant to the ACVM Act 1997, See www.foodsafety.govt.nz for registration conditions	No. P8169

For all further controls	Refer to EPA website (www.epa.govt.nz) for controls document - HSR000826

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 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 the Adama, if further information is required.

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