SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	**GALIGAN 500 SC HERBICIDE**
Item Code:	
Product Use:	Agricultural herbicide for use as described on the product label.
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:	3 September 2018

Section 2. Hazards Identification

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

EPA Approval No: HSR100031

Pictograms

Irritant Chronic Ecotoxic

Signal Word: **Warning**

HSNO Classification	Hazard Code	Hazard Statement	GHS Category
6.3B	H316	Causes mild skin irritation.	Category 3
6.4A	H320	Causes eye irritation.	Category 2B
6.9B	H373	May cause damage to organs through prolonged or repeated exposure.	Category 2
9.1A	H400.	Very toxic to aquatic life.	Category 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.
P260	Do not breathe fumes, vapours or spray.
P264	Wash hands thoroughly after handling.

P273	Avoid release to the environment.

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.
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.

Storage Code	Storage Statement
None Allocated	

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.
Oxyfluorfen	500g/l	42874-03-3
Other non-hazardous ingredients	To 100	N/A

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes — Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.

If on Skin — Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: get medical advice/attention.

If Swallowed — Rinse mouth. Drink plenty of 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. Get medical advice if breathing becomes difficult.

Most important symptoms and effects, both acute and delayed
Symptoms:
Ingestion: Not applicable.
Skin: Causes mild skin irritation.
Inhalation: Not applicable.
Eyes: Causes serious eye irritation.
Chronic: May cause damage to organs through prolonged or repeated exposure.

Section 5. Fire Fighting Measures

Hazard Type	Non Flammable Liquid
Hazards from combustion products	The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is little risk of an explosion from this product if commercial quantities are involved in a fire. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances. This product is likely to decompose only after heating to dryness, followed by further strong heating. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.
Suitable Extinguishing media	In case of fire, use carbon dioxide, dry chemical, foam, water fog. Alcohol resistant foam is the preferred firefighting medium but, if it is not available, normal foam can be used. Try to contain spills, minimise spillage entering drains or water courses.
Precautions for firefighters and special protective clothing	If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is full fire kit and breathing apparatus.
HAZCHEM CODE	**3Z**

Section 6. Accidental Release Measures

In the event of a major spill, prevent spillage from entering drains or water courses.
As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC, Viton. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Because of the environmentally hazardous nature of this product, special care should be taken to restrict release to waterways or drains. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7. Handling and Storage

General Hygiene Considerations
When using do not eat drink or smoke

Precautions for Handling:

- Read label before use.
- Do not breathe fumes, vapours or spray.
- Wash hands thoroughly after handling.
- Avoid release to the environment.

Precautions for Storage:

- Store away from incompatible materials listed in Section 10.
- Keep away from children.

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 set in WES.

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

This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

Personal Protection Equipment

Eyes	Eye protection such as protective glasses or goggles is recommended when this product is being used.
Hands and Skin	You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and facial protection when handling this product. See below for suitable material types. We suggest that protective clothing be made from the following materials: rubber, PVC, Viton.
Respiratory	Usually, no respirator is necessary when using this product.

Section 9 Physical and Chemical Properties

Appearance	Light yellow coloured liquid
Odour	No available
Odour Threshold	Not applicable
pH	5.3-6.3 (1% in water)
Boiling Point	Approximately 100°C at 100kPa.
Melting/Freezing Point	No specific data. Liquid at normal temperatures.
Flash Point	Not applicable
Flammability	Not Flammable
Upper and Lower Exposure Limits	Not applicable
Vapour Density	As water
Density	Not applicable
Specific Gravity	1.155-1.185
Solubilities	Not applicable
Partition Coefficient:	Not applicable
Auto-ignition Temperature	Not applicable
Surface tension	Not applicable
Viscosity, dynamic	Not applicable
Bulk Density	Not applicable

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions. This product is unlikely to react or decompose under normal storage

	conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.
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	No information available.
Hazardous Decomposition Products	This product is likely to decompose only after heating to dryness, followed by further strong heating. Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. May form nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. May form hydrogen chloride gas, other compounds of chlorine. May form hydrogen fluoride gas and other compounds of fluorine. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Oxyfluorfen is not harmful by ingestion, with reported oral LD50 values of 5000 mg/kg in both rats and dogs, and 2700 to 5000 mg/kg in mice.
Dermal	It is also not harmful by dermal exposure; the LD50 is greater than 5000 mg/kg in both rats and rabbits
Inhalation	Not applicable.
Eye	Causes severe eye irritation.
Skin	May mild skin irritation.

Chronic Effects:

Carcinogenicity	The data suggests that Oxyfluorfen is not carcinogenic.
Reproductive Toxicity	It does not appear likely that Oxyfluorfen will cause reproductive effects in humans at likely levels of exposure.
Germ Cell Mutagenicity	Mutagenicity tests on rats, mice and on bacterial cell cultures have produced mixed results. Due to the conflicting results, it is not possible to determine the mutagenic potential of Oxyfluorfen.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Repeated exposure causes damage to liver. Because Oxyfluorfen is highly hydrophobic, it may have the potential to bioconcentrate in animal fatty tissues.

Section 12. Ecotoxicological Information

HSNO Classes: 9.1A = Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.
9.2A = Very toxic to the soil environment.

Effects on birds:
Oxyfluorfen is practically nontoxic to birds; the reported oral LD50 values are greater than 2200 mg/kg in bobwhite quail, and greater than 4000 mg/kg in mallard duck.
Effects on aquatic organisms:
Oxyfluorfen is highly toxic to aquatic invertebrates, freshwater clams, oysters, aquatic plants, and fish. Studies indicate a low to moderate potential for bioaccumulation in aquatic species.
Effects on other organisms:

Oxyfluorfen is nontoxic to honeybees, with a reported oral LC50 of greater than 10,000 ppm.

Environmental Fate:
Breakdown in soil and groundwater: Oxyfluorfen is moderately persistent in most soil environments, with a representative field half-life of about 30 to 40 days. Oxyfluorfen is not subject to microbial degradation or hydrolysis. The main mechanism of degradation in soils may be photodegradation and evaporation/codistillation in moist soils.

Breakdown in water: In water, Oxyfluorfen is rapidly decomposed by light. Because Oxyfluorfen is nearly insoluble in water and has a tendency to adsorb to soil, it will be sorbed to suspended particles or sediments.
Breakdown in vegetation: There is very little movement of Oxyfluorfen within treated plants. It is not readily metabolized by plants, but since it is not readily taken up by roots, residues in plants are generally very low. Residues of Oxyfluorfen accumulated in carrots and oats grown on previously treated fields, but not in cotton or lettuce.

Section 13. Disposal Considerations

Disposal Method: 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.
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. (Oxyfluorfen)

Air Transport

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

Marine Transport

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

Special Provisions:

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

EPA Approval Code: HSR100031

HSNO Classification: 6.3B, 6.4A, 6.9B, 9.1A, 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(9.1A)
Emergency Response Plan	100L(9.1A)
Secondary Containment	100L(9.1A)
HSNO Additional Controls (Restrictions of use)	
77A	a). The maximum application rates for Oxy 500 shall be: · 3 L/ha (1.578 kg ai/ha) pre-emergence once per season; and · 1.5 L/ha (0.789 kg ai/ha) post-emergence once per season; or 0.240 L/ha (0.126 kg ai/ha) post emergence three times per season. b). The maximum concentration of N, N-nitrosodimethylamine in oxyfluorfen shall be 1 mg/kg. c). The substance must not be applied onto or into water. d). Oxy 500 shall be applied using ground based methods 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
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. P009367
For all further controls	Refer to EPA website (www.epa.govt.nz) for controls document - HSR100031

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

The information herein is given in good faith, but no warranty, express or implied is made.

Please contact the Adama, if further information is required.

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