SAFETY DATA SHEET
GALIGAN 240 EC Herbicide

Section 1: Identification of the Substance and Supplier

Product name : **GALIGAN 240 EC**
Chemical name of active Ingredient(s): 2-chloro-α,α,α-trifluoro-p-tolyl-3-ethoxy-4-nitrophenyl ether
Supplier: ADAMA New Zealand Limited
Level1/19 Elms Street, Wakatu Estate, Stoke, Nelson, New Zealand
P.O.Box 1799, Nelson New Zealand.
Telephone +64 3 543 8275 Fax: +64 3 543 8274

Emergency Telephone: **0800 POISON (0800 764 766) 24 Hour Service**

Section 2: Hazards Identification

HAZARD CLASSIFICATION: 3.1D, 6.1E, 6.3A, 6.4A, 6.8B, 6.9B, 9.1A, 9.2A

Most important hazards:

FLAMMABLE
Combustible liquid. Do not store or use near heat or naked flame. Will burn if ignited.

TOXICITY
Warning
May be harmful if swallowed, inhaled or absorbed through the skin.
May cause skin or eye irritation.
May cause reproductive/development damage from repeated oral exposure.
May cause organ damage from repeated oral exposure at high doses.

Avoid skin and eye contact and inhalation.

ECOTOXICITY
Very toxic to aquatic organisms. Avoid contamination of any water supply with product or empty container.
Very toxic in the soil environment.

Section 3. Composition/information on Ingredients

Substance/preparation Preparation
Information on hazardous ingredients *

Common name	CAS No.	%	EC Number	Symbol	R-Phrases
Oxyfluorfen	42874-03-3	22 - 24	255-983-0	Not classified	-
N-Methyl-2-pyrrolidone	872-50-4	8 - 10	12-828-1	Xi	R36/38
Solvent naphta (petroleum), heavy arom.	64742-94-5	54 – 59	265-198-5	Xn	R65

- ***Occupational Exposure Limit(s), if available, are listed in section 8***

Section 4: First-Aid Measures

Effects and symptoms:
Inhalation: Vapours - headache, dizziness and nausea.
Ingestion: Nausea, headache, cramps, vomiting.
Skin contact: Irritating to skin.
Eye contact: Irritating to eyes.
First-aid measures: Remove victim from area of exposure. Wash off remaining material with plenty of water.

Inhalation:	Remove victim to fresh air. If breathing is difficult: artificial respiration. Get medical attention.
Ingestion:	Wash out mouth with plenty of water. Get medical attention. Never give anything by mouth to an unconscious person.
Skin contact:	Remove contaminated clothing. Wash away remainder with water and soap.
Eye contact:	Wash out with plenty of water with the eyelid held wide open for at least 15 minutes. Get medical attention.
Notes to a physician:	There is no specific antidote. Treat symptomatically and give supportive therapy.
Protection of first-aiders:	Use appropriate protection (see section 8).

Section 5: Fire-Fighting Measures

Extinguishing media	
Suitable:	Dry chemical, water spray, foam, carbon dioxide.
Unusual fire/explosion hazards:	Flashback may occur along vapour trail.
Hazardous thermal (de)composition products:	Chloride compounds, Fluoride compounds and nitrogen oxides
Protection of fire-fighters:	Self-contained breathing apparatus and total protection required in enclosed areas.

Section 6: Accidental Release Measures

Personal precautions:	Wear suitable protective clothing.
Environmental precautions:	Do not discharge into drains or the environment.
Methods for cleaning up:	Keep away from: open flame, sparks and heat. Absorb remainder in sand or other inert material. Dispose of in an authorized waste collecting point.

Section 7: Handling and Storage

Handling:	Avoid contact with skin and eyes. Ventilation required. Keep away from: sparks, open flame and direct sunlight.
Storage:	Keep only in the original container. Keep in a cool, dry, well ventilated place away from direct sunlight.
Packaging materials	Multi-layer high density polyethylene extrusion blow containers.
Suitable:	Resin-lined metal drums

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Section 8: Exposure Controls/Personal Protection

Engineering measures:	Ventilation required.
Hygiene measures:	When handling do not eat, drink or smoke. Wash hands thoroughly after handling. Wash clothing separately before re-use.
Occupational Exposure Limits	
Common name:	**Oxyfluorfen**
TLV (USA):	0.2 mg/m3
STEL (USA):	1.6 mg/m3
Common name:	**N-Methyl-2-pyrrolidone**
"MAK" (Germany):	80 mg/m3
TLV (USA):	25 ppm (skin)
STEL (USA):	75 ppm (skin)
Common name:	**Solvent naphta (petroleum), heavy arom.**
TLV (USA):	25 ppm
Personal protective equipment:	
Respiratory system:	Respiratory protection is not required if good ventilation is maintained.
Skin and body:	Wear suitable protective clothing. Chemical resistant boots.
Hands:	Chemical resistant gloves.
Eyes:	Safety goggles or face shield.

Section 9: Physical and Chemical Properties

Physical state:	Liquid
Colour:	Amber
Odour:	Aromatic (solvent)
Boiling point:	220 - 290oC (Naphta)
Density:	1.08 ± 0.02 @ 20oC
Vapour pressure:	< 1 x 10-7 mm Hg @ 25oC (Oxyfluorfen)
Solubility in water:	0.04 ppm (Oxyfluorfen)
Octanol/water partition coefficient	log = 4.7 @ 25oC (Oxyfluorfen)
pH:	5 - 7 CIPAC, MT 75
Flash point:	71oC
Flammability:	Flammable 3.1D
Auto ignition temperature:	> 450oC (Naphta)
Explosion properties :	Naphta (vapours) - May form explosive mixture with air.
Lower explosion limit	0.8 volume %
Upper explosion limit :	7 volume %
Oxidation properties:	Not oxidizing

Section 10: Stability and Reactivity

Stability:	Not subject to polymerization
Materials to avoid:	Oxidizing agents, acids and alkali.
Hazardous reactions :	None
Hazardous decomposition products:	Chloride compounds, Fluoride compounds and nitrogen oxides.

Section 11. Toxicological Information

Preparation	HSNO: Class 6.1E
Acute toxicity - Oral:	LD_{50} (rat) > 2,500 mg/kg
Acute toxicity - Dermal:	LD_{50} (rabbit) > 2,000 mg/kg
Acute toxicity – Inhalation:	LC_{50} > 2.02 mg/L (4 hours) (maximum attainable concentration)
Skin irritation:	Moderately irritating (rabbit).
Eye irritation:	Moderately irritating (rabbit).
Sensitization :	The product is not a skin sensitizer (guinea-pig).
Common name:	**Oxyfluorfen**
Chronic toxicity:	NOEL: rat = 40 mg/kg/day; dog = 100 mg/kg/day; mice = 2 mg/kg/day.
Carcinogenicity:	EPA : Group C EU : Not classified IARC : Not classified HSNO NZ: Not Classified
Mutagenicity:	Not mutagenic
Reproduction toxicity:	HSNO Class 6.8B**.**NOEL (rat): 100 ppm (Maternal) ; 400 ppm (Fetal).
Target Organ Toxicant:	HSNO Class 6.9B
Other information :	Teratogenicity - NOEL (rabbit): 30 mg/kg/day.

Section 12: Ecological Information

Common name: **Oxyfluorfen**

Mobility:
Soil
Not mobile.
Adsorbed on soils with high organic content.
K_{oc} = 2,891 – 3,238 mL/g
No risk of underground water contamination

Persistence/degradability:
Soil
The product is persistent to some extent.
Half-life time (t½): 5-55 days.
Degradation is primarily via: photolysis.
Water
Dissipates rapidly from aquatic systems by adsorption to sediment.

Bioaccumulative potential: Log P_{ow} = 4.7

Ecotoxicity:
Fish
LC_{50} (96 hours) rainbow trout = 0.1 ppm
Daphnia magna
EC_{50} (48 hours) = 0.07 mg/L
Birds
Bobwhite quail (colinus virginianus) LD_{50} > 2,150 mg/kg
Bobwhite quail (colinus virginianus) Mallard duck (anas playtrhynchos) LC_{50} (8 day feeding) > 5,000 ppm
Bees
Oral LD_{50} (48 hours) > 173µg/bee
Contact LD_{50} (48 hours) > 200µg/bee
Very toxic to aquatic organisms. Low toxicity: birds. Non toxic: bees.

Section 13: Disposal Considerations

Methods of disposal: Container Disposal - 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. Avoid contamination of any water supply with product or empty container.

Section 14: Transport Information

UN Number	3082
Proper shipping name	Environmentally hazardous substance, Liquid, N.O.S, Oxyfluorfen
DG Class	9
Subsuduary Risk Class:	3.1D
Packing Group	III
Hazchem Code	2X
Marine Pollutant	Yes
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National transport regulations: Do not carry this product on a passenger service vehicle.

Segregation: Check the land transport Rule Dangerous Goods 1999, Rule 45001 for additional information. Sea transport may require additional segregation. Refer: NZS5433; Sea Segregation, or the International Maritime Dangerous Goods Code for details.

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Section 15: Regulatory Information

New Zealand Regulatory Information:

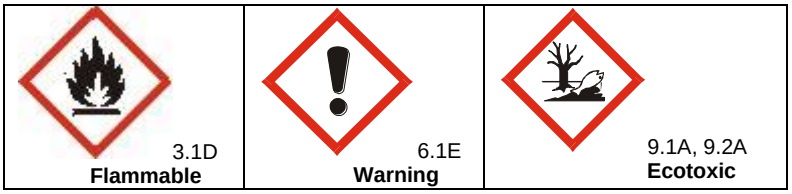
NZFSA Approval: Registered pursuant to the ACVM Act 1997, No. P7242
See www.nzfsa.govt.nz/acvm/ for registration conditions

Approved pursuant to the HSNO Act 1996, Approval No. HSR000545
See www.ermanz.govt.nz for approval controls

HSNO Classifications: 3.1D, 6.1E, 6.3A, 6.4A, 6.8A, 6.9B, 9.1A, 9.2A
HSNO Class 6.1E requires a priority identifier of **"WARNING".**

APPROVED HANDLER - This product must be under the care of an approved handler when it is used in a wide dispersive manner or used by a commercial contractor.

RECORD KEEPING - Records of use must be kept under certain circumstances
See The New Zealand Standards for Management of Agrichemicals (NZS8409) for details.



Section 16: Other Information

Note: This product is a registered agricultural chemical and must be therefore be used in accordance with the container label directions. A comprehensive package of toxicological and environmental data for the active ingredients of this product has been submitted to the Government health and environment authorities and has been evaluated by expert toxicologists and environmental scientists.

The information contained in the Safety Data sheet is correct to the best of our knowledge at the date of issue. It is intended as a guide for the safe use, handling, disposal, storage and transportation and is not intended as a warranty or as a specification. The information relates only to the product specified and may not be suitable for combinations with other materials or in processes other than those specifically described herein.

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HISTORY

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