



SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product: **Tomahawk Herbicide**
Chemical Name of Active Ing: Fluroxypyr as the methylheptyl ester
Product Use: Herbicide
Restriction of Use: Refer to Section 15

New Zealand Supplier: ADAMA New Zealand Ltd
Address: Level 1/93 Bolt Road
Tahunanui, Nelson
Telephone: +64 3 543 8275
Email: nzorders@adama.com

**Emergency Telephone: 0800 764 766 (National Poison Centre)
0800 734 607 (24hr Emergency Response)**

Date of SDS Preparation: 30 September 2022

Section 2. Hazards Identification

This substance is hazardous according to the Hazardous Substances (Hazard Classification) Notice 2020

HSNO Approval No: HSR101520

Pictograms



Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement
Flammable Liquid Category 4	H227	Combustible liquid.
Specific target organ toxicity – (single exposure) Category 3 (Narcotic effects)	H336	May cause drowsiness or dizziness
Aspiration hazard Category 1	H304	May be fatal if swallowed and enters airways.
Hazardous to the aquatic environment acute Category 1	H400	Very toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment chronic Category 1		
Hazardous to soil organisms	H421	Hazardous to soil organisms.

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.

P210	Keep away from heat, sparks, open flames, hot surfaces or other ignition sources. No smoking.
P261	Avoid breathing spray/mist/vapours.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid unintended release into 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.
P301 + P310 + P331	IF SWALLOWED: Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.
P304 + P312 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
P370 + P378	In case of fire: Use carbon dioxide, water spray, foam and dry chemical for extinction.
P391	Collect spillage.

Storage Code	Storage Statement
P403 + P333	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

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.
Fluroxypyr-meptyl	28 - 30	81406-37-3
Solvent naphta (petroleum), heavy arom.	64 - 69	64742-94-5

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	Remove contaminated clothing. Gently wash skin with water and soap for 15 minutes or until chemical is removed. If skin irritation occurs: Get medical advice/ attention.
If Swallowed	Do NOT induce vomiting. Rinse mouth with water. Give plenty of water to drink. If vomiting occurs give further water. Immediately call a POISON CENTER or doctor/physician.
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:	Not applicable
Inhalation:	May cause drowsiness or dizziness.
Skin:	Not applicable.
Eye:	Not applicable.
Chronic:	May be fatal if swallowed and enters airways (aspiration).

Notes to Doctor: There is no specific antidote. Treat symptomatically and give supportive therapy.

Section 5. Fire Fighting Measures

Hazard Type	Combustible Liquid
Hazards from products	Chloride compounds, Fluoride compounds and nitrogen oxides.
Suitable Extinguishing media	Dry chemical, water spray, foam, carbon dioxide.
Precautions for firefighters and special protective clothing	Self-contained breathing apparatus and total protection required in enclosed areas.
HAZCHEM CODE	3Z

Section 6. Accidental Release Measures

Wear suitable protective clothing, gloves and eye/face protection. Evacuate all unnecessary personnel. Shut off ignition sources. Keep away from: open flame, sparks and heat

Environmental precautions

In the event of a major spill, prevent spillage from entering into drains and water courses.

Methods and material for containment and cleaning up

Absorb remainder in sand or other inert material. Dispose of in an authorised waste collecting point.

Section 7. Handling and Storage

Precautions for Handling:

- Read label before use.
- Keep away from heat, sparks, open flames, hot surfaces or other ignition sources. No smoking.
- Ventilation required.
- Wash hands thoroughly after handling.
- Avoid unintended release into 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.
- Store locked up.
- Store in original, unopened container in cool, dry place, well ventilated place, out of direct sunlight and away from stockfeed or foodstuffs.
- As a Substance with Aquatic Ecotoxicity Classifications storage of Tomahawk 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 (NZS 8409:2004) is followed.

Section 8 Exposure Controls / Personal Protection**WORKPLACE EXPOSURE STANDARDS (provided for guidance only)**

Substance	TWA		STEL	
	ppm	mg/m ³	ppm	mg/m ³

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

Ventilation required.

Personal Protection Equipment

Eyes	Safety goggles or face shield.
Hands and Skin	Chemical resistant gloves. Wear suitable protective clothing.
Respiratory	Respiratory protection is not required if good ventilation is maintained.
General	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	Amber liquid
Odour	Aromatic (solvent)
Odour Threshold	Not applicable
pH	5 - 7 CIPAC, MT 75
Boiling Point	~200°C (Water)
Melting Point	Not applicable
Flash Point	65°C closed cup
Flammability	Combustible
Upper and Lower Exposure Limits	0.6% - 7% Volume
Vapour Pressure	7 x 10 ⁴ mPa @ 20°C (solvent)
Density	0.992 +/-0.015 g/mL @ 20°C (Fluroxyppy-meptyl)
Solubilities in water	0.9 ppm @ 20oC (Fluroxyppy-meptyl) 91 ppm @ 20oC (Fluroxyppy)
Octanol/water partition coefficient	log = 4.5 (Fluroxyppy-meptyl)
Auto-ignition Temperature	> 450 °C (solvent)
Explosive properties	Solvent (vapours) – may form explosive mixture with air.
Viscosity	Not applicable
Molecular weight:	Not applicable
Decomposition point:	Not applicable
Surface tension mN/m:	Not applicable

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Conditions to Avoid	Direct sunlight, sources of heat, open flame.
Incompatible Materials	Oxidizing agents, acids and alkali.
Hazardous Decomposition Products	Chloride compounds, Fluoride compounds and nitrogen oxides.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Not applicable. LD50 (rat)= 2,000 mg/kg
Dermal	Not applicable. LD50 (rat) > 2,000 mg/kg
Inhalation	Not applicable. LC50 (rat) > 5.2 mg/L (4 hours)
Skin	Not applicable.
Eye	Not applicable.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	May be fatal if swallowed and enters airways.
STOT/SE	May cause drowsiness or dizziness.
STOT/RE	Not applicable.

Common name:

Chronic toxicity:

Carcinogenicity:

Mutagenicity:

Other information:

Fluroxypyr-meptyl

NOAEL (rat): = 80 mg/kg/day; mice = 320 mg/kg/day

EPA : Not classified

EU : Not classified

IARC : Not classified

NOEL = 1,000 mg/kg/day (mice)

NOEL = 320 mg/kg/day (rat)

Not mutagenic

Teratogenicity: Not teratogenic in animal experiments

NOAEL = 1,000 mg/kg/day (rat)

Section 12. Ecotoxicological Information

HSNO Classifications: Hazardous to the aquatic environment acute Category 1, Hazardous to the aquatic environment chronic Category 1, Hazardous to soil organisms.

Persistence and degradability	No data available
Bioaccumulation	No data available
Mobility in Soil	No data available
Other adverse effects	No data available
Precautions	Do not allow to enter waterways.

Ecotoxicity:

Fish

LC50 (96 hours)

rainbow trout > 100 mg/L (Fluroxypyr)

golden orfe > 100 mg/L (Fluroxypyr)

rainbow trout > 0.9 mg/L, solubility limit (Fluroxypyr-meptyl)

golden orfe > 0.9 mg/L, solubility limit
(Fluroxypyr-meptyl)

Daphnia magna

EC50 (48 hours) > 100 mg/L (Fluroxypyr)
>0.9 mg/L, solubility limit (Fluroxypyr-meptyl)

Birds

Bobwhite quail LD50 > 2,000 mg/kg (Fluroxypyr-meptyl & Fluroxypyr)

Mallard duck LD50 > 2,000 mg/kg (Fluroxypyr-meptyl & Fluroxypyr)

Bees

Oral LD50 > 100 µg/bee (Fluroxypyr-meptyl)

Contact LD50 > 100 µg/bee (Fluroxypyr-meptyl)

Contact LD50 > 25 µg/bee (Fluroxypyr)

Harmful to aquatic organisms. Not toxic: birds and Bees

Common name:

Fluroxypyr-meptyl

Mobility:

Soil – moderately mobile (Fluroxypyr)

Persistence/degradability:

Soil

The product is not persistent.

Half-life time (t_{1/2}): 5-9 days (Fluroxypyr)

< 7 days (Fluroxypyr-meptyl)

Degradation is primarily via:

Microorganisms. (Fluroxypyr-meptyl)

Hydrolysis (Fluroxypyr-meptyl)

Water

DT50 = 1-3 days (Fluroxypyr-meptyl)

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 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****Road and Rail Transport**

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

Air Transport

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

Marine Transport

UN No: 3082
 Class-primary 9
 Packing Group III
 Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, (Contains Fluroxypyr)
 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**This substance is hazardous according to the Hazardous Substances (Hazard Classification) Notice 2020****HSNO Approval Code:** HSR101520

HSNO Classification: Flammable Liquid Category 4, Specific target organ toxicity – (single exposure) Category 3 (Narcotic effects), Aspiration hazard Category 1, Hazardous to the aquatic environment acute Category 1, Hazardous to the aquatic environment chronic Category 1, Hazardous to soil organisms.

HSW (HS) Regulations 2017 and EPA Notices	Trigger Quantity
Certified Handlers	Not required
Location Certificate	Not required
Tracking Trigger Quantities	Not required
Fire Extinguishers	500L – 2x required
Signage Trigger Quantities	100 L
Emergency Response Plan	100 L
Secondary Containment	100 L

HSNO additional controls and modifications to controls	
Variation to Hazardous Property Controls Notice Part 4B	<p>When used on cereals and apples, the following is applicable:</p> <ul style="list-style-type: none"> • Maximum number of applications per year is one • Maximum application rate is 400 g fluroxypyr/ha (equivalent to 2 L of formulated substance applied per hectare) <p>When used on onions, the following is applicable:</p> <ul style="list-style-type: none"> • Maximum number of applications per year is four • Minimum interval between applications is seven days • Maximum application rate is 68 g fluroxypyr/ha (equivalent to 340 mL of formulated substance applied per hectare)
Additional control	<p>Application restrictions:</p> <ul style="list-style-type: none"> • This substance must be applied by ground-based methods only. • DO NOT apply when wind speeds are less than 3 km/hr or more than 20 km/hr as measured at the application site.
Hazardous Property Controls Notice 2017	
HPC Notice Part 1	Hazardous Property Controls preliminary provisions
HPC Notice Part 3	Hazardous substances in a place other than a workplace
HPC Notice Part 4 Subpart A	Substances that are hazardous to the environment: Site and storage controls
HPC Notice Part 4 Subpart B	Use of substances that are hazardous to the environment
HPC Notice Part 4 Clause 47	Equipment for environmentally hazardous substances must be appropriate
HPC Notice Part 4 Clause 48	Records of application of ecotoxic pesticides and plant growth regulators
HPC Notice Part 4 Clause 52	Agrichemicals that are hazardous to the aquatic environment must not be applied to water
HPC Notice Part 4 Subpart C	Qualifications required for the application of substances that are hazardous to the environment
ACVM Act and Regulations	
ACVM Approval No See www.foodsafety.govt.nz for registration controls	P7327

Section 16**Other Information****Glossary**

ACVM	Agricultural Compounds and Veterinary Medicines Act 1997.
EC50	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority.
HSNO	Hazardous Substances and New Organisms Act 1996.
HSW	Health and Safety at Work Act 2015.
HSW (HS) Regulations 2017.	Health and Safety at Work (Hazardous Substances) Regulations 2017.
LC50 inhaling or ingesting it.	Lethal concentration that will kill 50% of the test organisms
LD50	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
TEL	Tolerable Exposure Limit.
TLV authority.	Threshold Limit Value-an exposure limit set by responsible
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
5. HSW (Hazardous Substances) Regulations 2017

Disclaimer:

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