



SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product: **AFALON 450 SC**
Chemical name of active: 3-(3,4-Dichlorophenyl)-1-methoxy-1-methylurea
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: 10 July 2018

Section 2. Hazards Identification

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

EPA Approval No: HSR000230

Pictograms



Irritant Chronic Ecotoxic

Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement	GHS Category
6.1E (oral)	H303	May be harmful if swallowed.	Acute Tox. 5
6.3B	H316	Causes mild skin irritation.	Skin Irrit. 3
6.4A	H319	Causes serious eye irritation.	Eye Irrit. 2A
6.5B	H317	May cause an allergic skin reaction.	Skin Sens. 1
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
9.1A	H400	Very toxic to aquatic life.	Aquatic Acute 1
9.2A	H421	Very toxic to the soil environment.	
9.3B	H432	Toxic 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.
P272	Contaminated work clothing should not be allowed out of the workplace.
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.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P363	Wash contaminated clothing before reuse.
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.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.

Storage Code	Storage Statement
P405	Store locked up 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 Afalon 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. See Safety Data Sheet for further information.

Disposal Code	Disposal Statement
P501	Refer to Section 13

Section 3. Composition / Information on Ingredients

Ingredients	Wt %	CAS NUMBER.
Linuron (ISO)	36-40	330-55-2
Other ingredients not contributing to the overall classification of the substance or non hazardous	To balance	NA

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/attention.

If on Skin Wash off immediately with soap and plenty of water. Wash contaminated clothing before reuse. If skin irritation or rash 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: May be harmful if swallowed.

Skin: Causes mild skin irritation. May cause an allergic skin reaction

Inhalation: Not applicable.

Eyes: Causes serious eye irritation.

Chronic: Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.

Notes to physician: There is no specific antidote. If poisoning is suspected apply symptomatic therapy.

Section 5. Fire Fighting Measures

Hazard Type	Not Flammable.
Hazardous thermal (de)composition products	Chloride 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 full protective clothing as detailed in Section 8. Evacuate area from unnecessary personnel.

Environmental precautions

Do not allow into any sewer, on the ground or into any body of water. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up

Absorb liquid spills with an inert (such as vermiculite, earth, sand or synthetic absorbent substance) material and place in waste containers. Dispose of container in a suitable landfill or take to an Agrecovery collection site.

Section 7. Handling and Storage

Precautions for Handling:

- 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.
- Wash hands thoroughly after handling.
- Ventilation required.

- Do not eat, drink or smoke when using this product.
- Contaminated work clothing should not be allowed out of the workplace.
- 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.
- Keep away from children.
- Store in the original, unopened container in a cool, dry place, well ventilated place away from direct sunlight and under lock and key.
- Plastic containers is the suitable packaging material.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA		STEL	
	ppm	mg/m3	ppm	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

Ensure adequate ventilation.

Personal Protection Equipment



Eyes	Safety goggles or face shield. Avoid wearing contact lenses.
Hands and Skin	Wear chemical resistant gloves, wear suitable protective clothing and chemical resistant boots.
Respiratory	Respiratory protection is not required if good ventilation is maintained.

Section 9 Physical and Chemical Properties

Appearance	Tan liquid
Odour	Aromatic
Odour Threshold	Not applicable
pH	7 – 8.5 CIPAC, MT 75
Boiling Point	100°C
Melting Point	Not applicable
Flash Point	Not applicable
Flammability	Not flammable
Upper and Lower Exposure Limits	Not applicable
Vapour Pressure	0.05 mPa @ 20oC (Linuron) (ISO)
Density	1.19 +/- 0.02 g/mL @ 20oC
Bulk Density	Not applicable
Relative Density	Not applicable
Solubilities in water	Dispersible
Auto-ignition Temperature	Not applicable

Octanol/water partition coefficient	log P = 3.0 (Linuron) (ISO)
Volatiles	Not applicable

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions. Thermal decomposition from 210°C
Conditions to Avoid	None known.
Incompatible Materials	Oxidizing agents, acids and alkali.
Hazardous Decomposition Products	Chloride compounds and nitrogen oxides.

Section 11 Toxicological Information

Acute Effects:

Swallowed	May be harmful if swallowed. LD50 (rat)= 4,480 mg/kg
Dermal	Not applicable. LD50 (rabbit) > 4,000 mg/kg
Inhalation	Not applicable. LC50 (rat) > 1.74 mg/L (maximum attainable concentration) (4 hours)
Eye	Causes severe eye irritation.
Skin	Causes mild skin irritation. May cause an allergic skin reaction.

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.

Linuron (ISO) Information:

Chronic toxicity:	NOAEL (rat): = 25 ppm or 1.3 mg/kg/day (2 years) NOAEL (mouse) = 50 ppm or 6.5 mg/kg/day (2 years)
Carcinogenicity:	EPA : Group C EU : Carc. Category 3 IARC : Not classified
Mutagenicity:	Not mutagenic
Reproduction toxicity:	NOAEL (rat): = 6.83 – 8.3 (100 ppm) mg/kg/day
Other information :	Teratogenicity - NOAEL (rat): 20 mg/kg/day. (Maternal and Fetal) NOAEL (rabbit) = 10 mg/kg/day (Maternal); 25 mg/kg/day (Fetal)

Section 12. Ecotoxicological Information

HSNO Classes: 9.1A =	Very toxic to aquatic life.
9.2A =	Very toxic to the soil environment.
9.3B =	Toxic to terrestrial vertebrates.

Product Ecotoxicity:

Fish:	Rainbow trout (96 hours) 10 mg/L < LC50 ≤ 100 g/L
Daphnia magna:	1 mg/L < EC50 (48 hours) ≤ mg/L
Algae (scenedesmus subspicatus):	EC50 (72 hours) ≤ 1 mg/L

Persistence and degradability	No data available
Bioaccumulation	No data available
Mobility in Soil	No data available
Other adverse effects	No data available

The data below is for Linuron(ISO)

Mobility: Soil – Not mobile
 Adsorbed on organic matter and clay.
 $K_d = 2.2 - 18 \text{ mL/g}$
 $K_{oc} = 362 - 877 \text{ mL/g}$
Water
 Low risk of underground water contamination.

Persistence/degradability: Soil
 Lab. - Half-life time ($t_{1/2}$): 38 -135 days (15-25°)
 Field – DT50: 13-82 days
 Degradation is primarily via: microorganisms.
Water
 DT50:48 days

Bioaccumulative potential: BCF: 38-49

Ecotoxicity: **Fish**
 LC_{50} (96 hours) rainbow trout (oncorhynchus mykiss)= 3.15 mg/L
 $NOEC$ (21 days) rainbow trout (oncorhynchus mykiss) = 0.1 mg/L
Daphnia magna
 EC_{50} (24 hours) = 0.31 mg/L
 $NOEC$ (21 days) = 0.18 mg/L
Algae (scenedesmus subspicatus)
 EC_{50} (72 hours) = 0.016 mg/L
Birds
 Bobwhite quail (colinus virginianus) $LD_{50} = 314 \text{ mg/kg}$
 Bobwhite quail (colinus virginianus) $LC_{50} = 1,250 \text{ ppm}$ (8-day feeding)
Bees
 Oral $LD_{50} > 160 \mu\text{g/bee}$
 Contact $LD_{50} > 1600 \mu\text{g/bee}$

Very toxic to aquatic organisms. Low toxicity: birds, Non toxic: Bees

Section 13. Disposal Considerations

Disposal Method: Dispose of this product only by using according to the label or at an approved landfill. Container Disposal: Triple rinse container and add rinsate to spray tank. Empty containers and product should not be burnt. Dispose of container in a suitable landfill or take to an Agrecovery collection site. Do not use container for any other purpose

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. (Linuron)

National transport regulations: Do not carry this product on a passenger service vehicle.

Air Transport

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

Marine Transport

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

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.

Section 15	Regulatory Information
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EPA Approval Code: HSR000230
 HSNO Classification: 6.1E(oral), 6.3B, 6.4A, 6.5B, 6.8B, 6.9A, 9.1A, 9.2A, 9.3B

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	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 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.nzfsa.govt.nz/acvm for registration conditions	No. P7239

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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