SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	**AFALON 450 SC**
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:	28 September 2020

Section 2. Hazards Identification

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

EPA Approval No: HSR100376

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
6.4A	H319	Causes serious eye irritation.	Eye Irrit. 2A
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.
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.
P308 + P313	IF exposed or concerned: 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)	35-40	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: Not applicable.
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	No specific hazard known.
Suitable Extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Precautions for firefighters and special protective clothing	In the event of fire, wear self-contained breathing apparatus In the event of fire and/or explosion do not breathe fumes.
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.
- 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)

	TWA		STEL	
Substance	**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 2019 11TH EDITION.

Engineering Controls

Ensure adequate ventilation, especially in confined areas.

Personal Protection Equipment

Eyes	Safety goggles or face shield. Avoid wearing contact lenses.
Hands and Skin	Wear plastic or rubber gloves and protective clothing.
Respiratory	Respiratory protection is not required if good ventilation is maintained.
General Hygiene	When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Wash hands thoroughly after handling. Keep away from food, drink and animal feeding stuffs.

Section 9 Physical and Chemical Properties

Appearance	Clear Brown
Odour	Urea

Odour Threshold	Not applicable
pH	8-9
Boiling Point	No Data
Melting Point	Not applicable
Flash Point	>79°C
Flammability	Not flammable
Upper and Lower Exposure Limits	Not applicable
Vapour Pressure	No data
Density	1.14 -1.24 g/mL @ 20°C
Bulk Density	Not applicable
Relative Density	Not applicable
Solubilities in water	Dispersible
Auto-ignition Temperature	566
Octanol/water partition coefficient	log P = 3.0 (Linuron) (ISO)
Volatiles	Not applicable
Oxidising Properties	Not oxidising
Kinematic viscosity mm^2/s 40°C	487.4

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Conditions to Avoid	Heat, Flames Sparks
Incompatible Materials	No information available
Hazardous Decomposition Products	Non under normal use conditions.

Section 11 Toxicological Information

Acute Effects:

Swallowed	May be harmful if swallowed.
Dermal	Not applicable.
Inhalation	Not applicable.
Eye	Causes severe eye irritation.
Skin	Not applicable.

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.

Information on toxicological effects

Acute toxicity

	Values	Species	Method	Remarks
Oral LD50 mg/kg	: 4480	Rat	OECD 401	male
Dermal LD50 mg/kg	: > 4000	Rat	OECD 402	
Inhalation LC50 mg/I/4h	> 1.74	Rat	OECD 403	Maximum attainable concentration
Skin corrosion/irritation	: Non-irritating to the skin	Rabbit	OECD 404	
Serious eye damage/eye irritation	: Not irritating to eyes	Rabbit	OECD 405	
Respiratory/skin sensitization	: Not a skin sensitizer	Guinea pig	OECD 406	

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.

Toxicity

Aquatic toxicity

Acute toxicity	**Values**	**Species**	**Method**	**Remarks**
Fish 96-hour LC50 mg/I	15.4	Rainbow trout	OECD 203	
Crustacea 48-hour EC50 mg/I	15	Daphnia magna	OECD 202	
Algae 72-hour EC50 mg/I	:	D. Subspicatus	OECD 201	
Other plants EC50 mg/I	0.1	Lemna minor	OECD 221	
	99			
Chronic aquatic toxicity	:	**Species**	**Method**	**Remarks**
Fish NOEC mg/I	0.			
Crustacea NOEC mg/I	16			
Algae NOEC mg/1				
Other plants NOEC mg/I	**Values**			
	No data available			

Terrestrial Toxicity

Birds Oral LD50 mg/kg

Chemical Name		
Linuron	: 314	**Bobwhite quail**

Bees Oral LD50 pg/bee

Chemical Name	
Linuron	: > 112

Persistence and degradability

Abiotic Degradation	**Values**	**Method**	**Remarks**
Water DT50 days			
Chemical Name			
Linuron	**: 9.9**	**EPA-FIFRA 162-4**	
Soil DT50 days			
Chemical Name			
Linuron	**: 38 - 135**		**15-25 °C**

Bioaccumulative potential

Partition Coefficient (n-octanol/water) Partition Coefficient (n-octanol/water) Log Pow	Values	Method	Remarks
Chemical Name			
Linuron	: 3.0	EPA-FIFRA 63-11	23 °C

Bioconcentration factor (BCF)

Chemical Name			
Linuron	: 38		0.95 mg/l

Mobility in soil

Adsorption/Desorption	Values	Method	Remarks
Chemical Name			
Linuron	: 743	OECD 106	Koc

Do not allow to enter waterways.

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

EPA Approval Code: HSR100376
HSNO Classification: 6.1E(oral), 6.4A, 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 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. P7239
For all further controls	Refer to EPA website (www.epa.govt.nz) for controls document - HSR100376

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

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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