



SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product: **Arrow 360**
Item Code:
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: HSR100921

Pictograms



Irritant



Chronic



Ecotoxic

Signal Word: **Warning**

HSNO Classification	Hazard Code	Hazard Statement	GHS Category
3.1D	H227	Combustible liquid.	Category 4
6.1E (oral)	H303	May be harmful if swallowed.	Category 5
6.3A	H315	Causes skin irritation.	Category 2
6.4A	H319	Causes serious eye irritation.	Category 2A
6.9B	H373	May cause damage to organs through prolonged or repeated exposure.	Category 2
9.1C	H412	Harmful to aquatic life with long lasting effects.	Category 3
9.2A	H421	Very toxic to the soil environment.	-
9.3C	H433	Harmful to terrestrial vertebrates.	-

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Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.
P260	Do not breathe dust, fumes, mist or vapours.
P264	Wash hands thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective clothing.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P312	Call the POISON CENTER or doctor/physician if you feel unwell.
P362	Take off contaminated clothing and wash 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.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P370 + P378	In case of fire: Use carbon dioxide, dry chemical, foam or water spray (fog)for extinction.

Storage Code	Storage Statement
P403 + P235	Store in a well-ventilated place. Keep cool.
	Keep out of reach of children. Do not store near heat or flame. Store in original container tightly closed and in a locked, dry, well-ventilated, cool area away from sources of ignition and foodstuffs. Store in accordance with NZS 8409 Management of Agrichemicals. Stores containing 100 L are subject to signage, 1000 L of ARROW 360 require secondary containment and more than 1000 L require emergency response plans. Stores containing 500 L of ARROW 360 must have at least 2 fire extinguishers.

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.
Clethodim	30-40	99129-21-2
Other ingredients	To 100	Proprietary

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. Take off contaminated clothing and wash before reuse. If skin irritation: get medical advice/attention.

If Swallowed Never give anything by mouth to an unconscious person. If swallowed do NOT induce vomiting. For advice, contact the National Poisons Centre (0800 764 766). Seek medical assistance immediately.

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 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	Combustible Liquid
Hazards from combustion products	Oxides of sulphur, nitrogen and carbon.
Suitable Extinguishing media	Carbon dioxide, Dry chemical, Foam, or Water spray (fog).
Precautions for firefighters and special protective clothing	Vapours may be toxic. Self-contained breathing apparatus required. Do not allow contaminated run-off to enter drains.
HAZCHEM CODE	2X

Section 6. Accidental Release Measures

Wear full protective clothing including eye/face protection as detailed in Section 8. Evacuate area from unnecessary personnel.

Contain and absorb liquid spills with inert material and place in waste containers. If spill does enter waterways contact the local authority. Collect in an appropriate sealable container for disposal in an approved landfill. This product is a herbicide and spills can damage crops, pastures and desirable vegetation. Prevent contamination of soil and water.

Dispose of according to Local Regulations.

Section 7. Handling and Storage

Precautions for Handling:

- Read label before use.
- Do not breathe dust, fumes, mist or vapours.
- Wash hands thoroughly after handling.
- Avoid release to the environment.
- Wear protective clothing.

Precautions for Storage:

- Store away from incompatible materials listed in Section 10.
- Keep away from children.
- Store in a cool, dry, well-ventilated place in the original container.
- Protect from excessive heat and cold.
- Do not store near food, drink, animal feeding stuffs, pharmaceuticals, cosmetics or fertilisers.
- Storage duration: 24 Months

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

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

No ingredients has 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.

Engineering Controls

Handle in well ventilated areas, generally natural ventilation is adequate.

Personal Protection Equipment

Eyes	When opening the container, preparing spray and using the prepared spray wear protective glasses or goggles with shield shields must be worn.
Hands and Skin	When opening the container, preparing spray and using the prepared spray wear waterproof gloves, cotton overalls buttoned to the neck and wrist, and boots.
Respiratory	Respiratory protection is not normally required if good ventilation is maintained.
General	Do not eat, drink or smoke while using. Remove protective clothing and wash hands and face thoroughly before meals and after work. Wash protective clothing daily after work. Wash splashes of concentrate from skin immediately.

Section 9**Physical and Chemical Properties**

Appearance	Amber liquid
Odour	Aromatic
Odour Threshold	Not applicable
pH	5.0 – 7.0
Boiling Point	Not applicable
Melting Point	Not applicable
Flash Point	63 ^o C
Flammability	Not applicable
Upper and Lower Exposure Limits	Not applicable
Vapour Pressure	Not applicable
Density	1,035 g/ml
Relative Density	Not applicable
Solubilities	Not known
Partition Coefficient:	Not applicable
Auto-ignition Temperature	Not applicable
Viscosity, dynamic	Not applicable
Particle Characteristics	Not applicable

Section 10. Stability and Reactivity

Product Name: Arrow 360
Date of SDS: 10 July 2018

Issued by: Technical Compliance Consultants (NZ) Ltd
Tel: 64 9 475 5240 www.techcomp.co.nz

Stability of Substance	Stable under normal storage conditions in original container for at least two years.
Conditions to Avoid	Protect from excessive heat and cold.
Incompatible Materials	Compatible with most herbicides except very strong acid/alkaline formulations.
Hazardous Decomposition Products	Oxides of sulphur, nitrogen and carbon.

Section 11 Toxicological Information

Acute Effects:

Swallowed	May be harmful if swallowed. 1630mg/kg and 1360 mg/kg in male and female rats for clethodim
Dermal	Not applicable
Inhalation	Not applicable
Eye	Causes serious eye irritation.
Skin	Causes skin irritation.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	May cause damage to organs through prolonged or repeated exposure.

Section 12. Ecotoxicological Information

HSNO Classes: 9.1C = Harmful to aquatic life with long lasting effects.
9.2A = Very toxic to the soil environment.
9.3C = Harmful to terrestrial vertebrates.

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

Clethodim is of low persistence in most soils with a reported half-life of approximately 3 days. Breakdown is mainly by aerobic processes, although photolysis may make some contribution.

Ecotoxicity:

LC50 for Rainbow trout: 19 mg/L for clethodim (96h)
EC50 for Daphnia: 20.2 mg/L for clethodim (48h)
LD50 for bobwhite quail: oral >2000 mg/kg for clethodim
LD50 (contact) for honeybee: >100 µg/bee for clethodim

Section 13. Disposal Considerations

Disposal Method: Triple rinse empty container and add rinsate to spray tank. Recycle empty container. Otherwise crush and bury in a suitable 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 **NOT** classified as a Dangerous Good for transport in NZ; NZS 5433:2012

Section 15 Regulatory Information**EPA Approval Code: HSR100921**

HSNO Classification: 3.1D, 6.1E(oral), 6.3A, 6.4A, 6.9B, 9.1C, 9.2A, 9.3C

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		1000L(9.1C)
Emergency Response Plan		1000L(9.1C)
Secondary Containment		1000L(9.1C)
HSNO Additional Controls (Restrictions of use)		
77A	a). The substance must not be applied onto or into water. b). The application of the substance must be limited to ground based application methods only. [Where ground based methods applying pesticides include, but are not limited to, application by ground boon, airblast or knapsack, and do not include aerial application methods.	
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. P009274	
For all further controls	Refer to EPA website (www.epa.govt.nz) for controls document - HSR100921	

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

1. HSNO Approved Code of Practice: Preparation of Safety Data Sheets, September 2006.

Disclaimer

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Please contact the New Zealand distributor, if further information is required.

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