



## 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 1/19 Elms Street  
Wakatu Estate, Nelson  
Telephone: +64 3 543 8275  
Fax Number: +64 3 543 8274

**Emergency Telephone: 0800 764 766 (National Poison Centre)**

Date of SDS Preparation: 27 August 2015

### Section 2. Hazards Identification

**This substance is hazardous according to the *HSNO (Minimum Degrees of Hazard) Regulations 2001***

**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.	-

\*

<b>Prevention Code</b>	<b>Prevention Statement</b>
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.

<b>Response Code</b>	<b>Response Statement</b>
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.

<b>Storage Code</b>	<b>Storage Statement</b>
P403 + P235	Store in a well-ventilated place. Keep cool.

<b>Disposal Code</b>	<b>Disposal Statement</b>
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**

<b>Ingredients</b>	<b>Wt%</b>	<b>CAS NUMBER.</b>
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.

## Section 5. Fire Fighting Measures

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

## Section 8 Exposure Controls / Personal Protection

### WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA		STEL	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>

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

<b>Eyes</b>	When opening the container, preparing spray and using the prepared spray wear protective glasses or goggles with shield shields must be worn.
<b>Hands and Skin</b>	When opening the container, preparing spray and using the prepared spray wear waterproof gloves, cotton overalls buttoned to the neck and wrist, and boots.
<b>Respiratory</b>	Respiratory protection is not normally required if good ventilation is maintained.
<b>General</b>	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

<b>Appearance</b>	Amber liquid
<b>Odour</b>	Aromatic
<b>Odour Threshold</b>	Not applicable
<b>pH</b>	5.0 – 7.0
<b>Boiling Point</b>	Not applicable
<b>Melting Point</b>	Not applicable
<b>Flash Point</b>	63 <sup>0</sup> C
<b>Flammability</b>	Not applicable
<b>Upper and Lower Exposure Limits</b>	Not applicable
<b>Vapour Pressure</b>	Not applicable
<b>Density</b>	1,035 g/ml
<b>Relative Density</b>	Not applicable
<b>Solubilities</b>	Not known
<b>Partition Coefficient:</b>	Not applicable
<b>Auto-ignition Temperature</b>	Not applicable
<b>Viscosity, dynamic</b>	Not applicable
<b>Particle Characteristics</b>	Not applicable

## Section 10. Stability and Reactivity

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

## Section 11 Toxicological Information

### Acute Effects:

<b>Swallowed</b>	May be harmful if swallowed. 1630mg/kg and 1360 mg/kg in male and female rats for clethodim
<b>Dermal</b>	Not applicable
<b>Inhalation</b>	Not applicable

<b>Eye</b>	Causes serious eye irritation.
<b>Skin</b>	Causes skin irritation.

**Chronic Effects:**

<b>Carcinogenicity</b>	Not applicable.
<b>Reproductive Toxicity</b>	Not applicable.
<b>Germ Cell Mutagenicity</b>	Not applicable.
<b>Aspiration</b>	Not applicable.
<b>STOT/SE</b>	Not applicable.
<b>STOT/RE</b>	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.

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:

<b>HSNO Controls</b>	<b>Trigger Quantity</b>
Approved Handler	Yes if: a) Applied in a widely dispersive manner or b) Used by a commercial contractor.
Location Certificate	Not required
Tracking Trigger Quantities	Not required
Signage Trigger Quantities	1000L(9.1C)
Emergency Response Plan	1000L(9.1C)
Secondary Containment	1000L

Restrictions of Use	<p>a). The substance must not be applied onto or into water.</p> <p>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.</p>
---------------------	--

## 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

This document has been issued by TCC (NZ) Ltd and serves as their 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

The information herein is given in good faith, but no warranty, express or implied is made.

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

Issue Date: 27 August 2015      Review Date: 27 August 2020