SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	**MIRAGE 450 EC**
Chemical Name of Active Ing:	C15H16C13N302
Product Use:	Fungicide
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)**
Date of SDS Preparation:	08 August 2019

Section 2. Hazards Identification

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

EPA Approval No: HSR000599

Pictograms

Flammable Irritant Chronic Corrosive Ecotoxic

Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement	GHS Category
3.1C	H226	Flammable liquid and vapour.	Flam. Liq. 3
6.1D (oral)	H302	Harmful if swallowed.	Acute Tox. 4
6.1D (dermal)	H312	Harmful in contact with skin.	Acute Tox. 4
6.1D (inh)	H332	Harmful if inhaled.	Acute Tox. 4
6.3A	H315	Causes skin irritation.	Skin Irrit. 2
6.8B	H361	Suspected of damaging fertility or the unborn child.	Repr. 2
6.9B	H373	May cause damage to organs through prolonged or repeated exposure.	STOT RE 2
8.3A	H318	Causes serious eye damage.	Eye Corr. 1
9.1A	H410	Very toxic to aquatic life with long lasting effects.	Aquatic Chronic 1
9.3C	H433	Harmful 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.
P210	Keep away from heat, sparks, open flames or hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
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.
P271	Use only outdoors or in a well-ventilated area.
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.
P310	Immediately call a POISON CENTER or doctor/physician.
P321	Use a specific cleansing agent if appropriate
P330	Rinse mouth.
P362	Take off contaminated clothing and wash before re-use.
P391	Collect spillage.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P352	IF ON SKIN: wash with plenty of soap and water
P303 + P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
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.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P370 + P378	In case of fire: Use water spray, foam, water fog for extinction.

Storage Code	Storage Statement
P405	Store locked up.
P403 + P235	Store in a well-ventilated place. Keep cool.

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.
Prochloraz	450g/l	67747-09-5
Xylene	30-40%	1330-20-7
Benzenesulfonic acid, dodecyl-, calcium salt	<10%	26264-06-2

Diethylene glycol	<10%	111-46-6

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes — Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15 minutes or until the product is removed, while holding the eyelid(s) open. If eye irritation persists: Get medical advice.

If on Skin — Remove contaminated clothing and wash before reuse. Wash away remainder with water and soap followed by a warm water rinse. If skin irritation occurs: Get medical advice/ attention.

If Swallowed — If swallowed, do NOT induce vomiting. Wash out mouth thoroughly with water. Never give anything to the mouth of an unconscious person. If vomiting occurs, place victim face downwards, with the head turned to the side and lower than the hips to prevent vomit entering the lungs. Call a POISON CENTER or doctor/physician if needed.

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: Harmful if swallowed.
Inhalation: Harmful if inhaled.
Skin: Harmful if in contact with skin. Causes skin irritation.
Eye: Causes serious eye damage.
Chronic: Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.

Section 5. Fire Fighting Measures

Hazard Type	Flammable liquid
Hazards from combustion products	carbon dioxide, carbon monoxide, chlorides, nitrogen oxides.
Suitable Extinguishing media	Water spray, foam, water fog.
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 appropriate protective clothing. (see section 8). Evacuate all unnecessary personnel.

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
Collect and contain as much free liquid as possible. Absorb remainder in sand or other inert material. Place into a clean container and cover the container loosely for later disposal.

Dispose as per Section 15.

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.
- Keep away from heat, sparks, open flames or hot surfaces. No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/lighting.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Avoid contact with skin and eyes.
- Do not breathe fumes, vapours or spray.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- 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.
- Store locked up.
- Store in a well-ventilated place. Keep cool.
- Store in the original, unopened container in a cool, dry place, out of direct sunlight and away from stockfeed or foodstuffs. (<50◦C)
- As a Class 9 Substance with Ecotoxicity Classifications storage of Mirage 450 Fungicide 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.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Xylene [1330-20-7]	50	217		
Diethylene glycol [111-46-6]	23	101		

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	Wear chemical resistant gloves, protective clothing and boots.

Respiratory	During spraying wear suitable respiratory equipment
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	Clear amber liquid
Odour	Characteristic
Odour Threshold	Not applicable
pH	Not applicable
Boiling Point	Not applicable
Melting Point	No specific data.
Flash Point	<60ºC (closed cup)
Flammability	Flammable
Upper and Lower Exposure Limits	Not applicable
Vapour Pressure	4.5X (10)-5 Pa at a temperature at 25ºC (pure)
Specific Gravity	($H^2$0 = 1) 1.13 – 1.14
Solubilities	Emulsifiable – Prochloraz 25 ppm at a temperature of 20 ºC (pure)
Log P octanol	log Pow = 4.06
Auto-ignition Temperature	Not applicable
Kinematic viscosity mm2/s 40 °C	Not applicable
Particle Characteristics	Not applicable
Volatiles	No specific data.
Molecular weight	376.7

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Reactivity	None known.
Conditions to Avoid	(sun) light, open place, sources of heat. Decomposes upon heating.
Incompatible Materials	Avoid contact with: strong bases and strong acids.
Hazardous Decomposition Products	Carbon dioxide, carbon monoxide, nitrogen oxides, chlorides.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Harmful if swallowed.
Dermal	Harmful if in contact with skin.
Inhalation	Harmful if inhaled.
Skin	Causes skin irritation.
Eye	Causes serious eye damage.

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	May cause damage to organs through prolonged or repeated

	exposure.

Preparation

Acute toxicity - Oral:	LD50 (rat)= > 2,000 mg/kg
Acute toxicity - Dermal:	LD50 (rabbit) > 2,000 mg/kg
Acute toxicity – Inhalation:	LC50 (rat) > 4.99 mg/L (4 hours)
Skin irritation:	Mildly irritating (rabbit).
Eye irritation:	Mildly irritating (rabbit).
Sensitization :	Non sensitizer (guinea-pig) Maximum test
Carcinogenicity:	Prochloraz: Not carcinogenic (rat)
Mutagenicity:	Prochloraz: Not mutagenic
Reproduction toxicity:	Prochloraz: Not teratogenic in animal experiments

Section 12. Ecotoxicological Information

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

Ecological effects information:

96 H-LC50 –	Rainbow trout 3.05 mg/l
48 H-EC50 –	Daphnia magna 4.00 mg/l
72 H-EbC50 –	Algae 1.42 mg/l
72 h-Erc50 –	Algae 4.34 mg/l
LD50 Birds [mg/l]	Prochloraz Technical: >2000
Bees LD50 {µ/Bee]	Prochloraz Technical: Not toxic to bees

Persistence and degradability	Rapidly degrades when exposed to sunlight and UV light
Bioaccumulation	No data available
Mobility in Soil	Product does not leach to ground water
Other adverse effects	No data available
Precautions	Do not allow to enter waterways.

Section 13. Disposal Considerations

Disposal Method: Triple rinse empty container and add rinsate to spray tank. Burn in an appropriate incinerator, if circumstances such as wind direction permit. Otherwise crush or puncture and bury in a suitable landfill, or if appropriate, recycle. Avoid contamination of any water supply with product or empty container.

Precautions and methods to avoid:
Avoid contamination of any water supply with product or empty 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:	1993
Class-primary	3
Packing Group	III
Proper Shipping Name:	FLAMMABLE LIQUID, N.O.S

Air Transport

UN No:	1993

Class-primary	3
Packing Group	III
Proper Shipping Name:	FLAMMABLE LIQUID, N.O.S

Marine Transport

UN No:	1993
Class-primary	3
Packing Group	III
Proper Shipping Name:	FLAMMABLE LIQUID, N.O.S

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 (Classification) Notice 2017

EPA Approval Code: HSR000599
HSNO Classification: 3.1C, 6.1D(oral, inh, dermal), 6.3A, 6.8B, 6.9B, 8.3A, 9.1A, 9.3C

Refer to EPA website www.epa.govt.nz for controls document - HSR000599

HSW (HS) Regulations 2017	**Trigger Quantity / Regulation**
HSW(Hazardous substance) Regulations Part 4 Certified Handlers and supervision and training of workers	HSW Reg 4.5 – 4.6 Information, instruction, training and supervision.
Location Certificate	500 L if >5 L (open) 1500 L if ≤ 5 L (open) >250 L (open)
Signage Trigger Quantities (Schedule 3)	100L (9.1A)
Fire Extinguishers (Schedule 4)	500L – 2x required
Emergency Response Plan (Schedule 5)	100L (9.1A)
Secondary Containment (Schedule 5)	100L (9.1A)
Tracking (Schedule 26)	Not required
HSNO Additional Controls (Restrictions of use)	
77A	The 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	
ACVM Approval No See www.foodsafety.govt.nz for registration controls	P7240

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 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

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Please contact the ADAMA, if further information is required.

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