



SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product: **CAVALRY FUNGICIDE**
Chemical name of active: Chlorothalonil (ISO)
Product Use: Fungicide
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
Email: nzorders@adama.com

**Emergency Telephone: 0800 764 766 (National Poison Centre)
0800 734 607 (24hr Emergency Response)**

Date of SDS Preparation: 16 March 2023

Section 2. Hazards Identification

This substance is hazardous according to the Hazardous Substances (Hazard Classification) Notice 2020

HSNO Approval No: HSR000670

Pictograms



Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement
Acute inhalation toxicity Category 2	H330	Fatal if inhaled.
Serious eye damage Category 1	H318	Causes serious eye damage.
Skin sensitisation Category 1	H317	May cause an allergic skin reaction.
Carcinogenicity Category 2	H351	Suspected of causing cancer.
Specific target organ toxicity (repeated exposure) Category 1	H372	Causes damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment acute Category 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment chronic Category 1	H410	Very toxic to aquatic life with long-lasting effects.
Hazardous to soil organisms	H423	Harmful to the soil environment.
Hazardous to terrestrial vertebrates	H432	Toxic to terrestrial vertebrates.

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe fume, mist, 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.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid unintended release into to the environment.
P280	Wear protective clothing as detailed in Section 8.
P284	Wear respiratory protection.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P302 + P313 + P333 + P352	IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.
P304 + P310 + P340	IF INHALED: Immediately call a POISON CENTRE or doctor. Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P310 + P338 + P351	IF IN EYES: Immediately call a POISON CENTRE or doctor. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF otherwise exposed or concerned: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Storage Code	Storage Statement
P405	Store locked up.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

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.
Chlorothalonil (ISO)	72	1897-45-6
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. Immediately call a POISON CENTER or doctor/physician.
If on Skin	Take off contaminated clothing and wash before re-use. Wash off immediately with soap and plenty of water. If skin irritation or rash occurs: Get medical advice/attention.
If Swallowed	DO NOT INDUCE VOMITING. 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	Immediately call a POISON CENTER or doctor/physician. 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.

Most important symptoms and effects, both acute and delayed

Symptoms:

Ingestion: Not applicable.

Skin: May cause an allergic skin reaction.

Inhalation: Fatal if inhaled.

Eyes: Causes serious eye damage.

Chronic: Suspected of causing cancer.

Causes damage to organs through prolonged or repeated exposure.

Section 5. Fire Fighting Measures

Hazard Type	Non Flammable
Hazardous thermal (de)composition products	When heated to decomposition, emits dangerous fumes.
Suitable Extinguishing media	Dry chemical, alcohol resistant foam, water spray, carbon dioxide.
Precautions for firefighters and special protective clothing	Do not enter fire area without proper protective equipment, including respiratory protection.
HAZCHEM CODE	2X

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

Sweep or shovel spills into appropriate container for disposal.

Dispose of according to Local Regulations.

Section 7. Handling and Storage

Precautions for Handling:

- Keep out of reach of children.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe fume, mist, 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.
- Contaminated work clothing should not be allowed out of the workplace.
- Avoid unintended release into the environment.
- Wear protective clothing as detailed in Section 8.
- Wear respiratory protection.

Precautions for Storage:

- Store away from incompatible materials listed in Section 10.
- Store locked up, in a well-ventilated place. Keep container tightly closed.
- Store in the original, unopened container in a cool, dry place, out of direct sunlight and away from stockfeed or foodstuffs, under lock and key.
- As a substance with Aquatic Ecotoxicity Classifications storage of Cavalry 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 (NZS 8409) is followed.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

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

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

Provide local exhaust or general room ventilation.

Personal Protection Equipment



Eyes	Chemical goggles or face shield.
Hands and Skin	Wear suitable gloves resistant to chemical penetration.
Respiratory	Suitable respiratory equipment.
General	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Section 9 Physical and Chemical Properties

Appearance	Slightly yellow Liquid
Odour	Slightly characteristic
Odour Threshold	Not applicable
pH	Not applicable
Boiling Point	Not applicable
Melting Point	Not applicable
Flash Point	Not applicable
Flammability	Non Flammable
Upper and Lower Exposure Limits	Not applicable
Vapour Pressure	Not applicable
Density	1.28-1.32g/cm ³
Bulk Density	Not applicable
Relative Density	Not applicable
Solubilities	Not applicable
Auto-ignition Temperature	Not applicable
Log P octanol:	2.92 (Chlorothalonil)

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Conditions to Avoid	None known.
Incompatible Materials	None known.
Hazardous Decomposition Products	When heated to decomposition, emits dangerous fumes.

Section 11 Toxicological Information**Acute Effects:**

Swallowed	Not applicable. LD50 = >3000mg/kg (Rat)
Dermal	Not applicable. LD50 = >4000mg/kg (Rabbit)
Inhalation	Fatal if inhaled. LC50 = 0.7mg/l/4h m(Rat)
Eye	Causes serious eye damage.
Skin	May cause an allergic skin reaction.

Chronic Effects:

Carcinogenicity	Suspected of causing cancer.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Causes damage to organs through prolonged or repeated exposure.

Section 12. Ecotoxicological Information

HSNO Classes: Hazardous to the aquatic environment acute Category 1, Hazardous to the aquatic environment chronic Category 1, Hazardous to soil organisms, Hazardous 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

Aquatic Toxicity- Chlorothalonil

96 H-LC50 – Fish [mg/l]:	0.0704 (Poecilia reticulata)
48 H-LC50 – Daphnia magna [mg/l]:	0.07 (100% active ingredient)
120 H – EC50 Algae [mg/l]:	0.21 (100% active ingredient)
LD50 – Japanese quail [mg/l]:	>2000
Bees LD50 [µ/Bee]:	>100

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: Do not allow product to enter waterways.

Disposal methods to avoid: Do not allow product to enter waterways.

Section 14 Transport Information

This product is classified as a Dangerous Good for transport in NZ; NZS 5433



Road and Rail Transport

UN No:	2996
Class-primary	6.1
Packing Group	II
Proper Shipping Name:	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC (72% CHLOROTHALONIL)

Air Transport

UN No:	2996
Class-primary	6.1
Packing Group	II
Proper Shipping Name:	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC (72% CHLOROTHALONIL)

Marine Transport

UN No:	2996
Class-primary	6.1
Packing Group	II
Proper Shipping Name:	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC (72% CHLOROTHALONIL)
Marine Pollutant:	No

Special Provisions:

If the product's individual container is below 100ml, 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 (Hazard Classification) Notice 2020

HSNO Approval Code: HSR000670

HSNO Classification: Acute inhalation toxicity Category 2, Serious eye damage Category 1, Skin sensitisation Category 1, Carcinogenicity Category 2, Specific target organ toxicity (repeated exposure) Category 1, Hazardous to the aquatic environment acute Category 1, Hazardous to the aquatic environment chronic Category 1, Hazardous to soil organisms, Hazardous to terrestrial vertebrates.

HSW (HS) Regulations 2017 and EPA Notices	Trigger Quantity
Certified Handlers	Yes - Any quantity
Location Certificate	250L
Tracking Trigger Quantities	Yes - Any quantity
Signage Trigger Quantities	100L
Emergency Response Plan	100L
Secondary Containment	100L
Hazardous Property Controls Notice 2017	
HPC Notice Part 1	Hazardous Property Controls preliminary provisions
HPC Notice Part 2	Certain substances restricted to workplaces only.
HPC Notice Part 3	Hazardous substances in a place other than a workplace
HPC Notice Part 4 Subpart A	Substances that are hazardous to the environment: Site and storage controls
HPC Notice Part 4 Subpart B	Use of substances that are hazardous to the environment
HPC Notice Part 4 Clause 47	Equipment for environmentally hazardous substances must be appropriate
HPC Notice Part 4 Clause 48	Record of application of agrichemicals
HPC Notice Part 4 Clause 52	Agrichemicals that are hazardous to the aquatic environment must not be applied to water
HPC Notice Part 4 Subpart C	Qualifications required for the application of substances that are hazardous to the environment
ACVM Act and Regulations	
Registered pursuant to the ACVM Act 1997, See www.foodsafety.govt.nz for registration conditions	No. P7346
For all further controls	Refer to EPA website (www.epa.govt.nz) for controls document - HSR000670

Glossary

ACVM	Agricultural Compounds and Veterinary Medicines Act 1997.
EC50	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority.
HSNO	Hazardous Substances and New Organisms Act 1996.
HSW	Health and Safety at Work Act 2015.
HSW (HS) Regulations	Health and Safety at Work (Hazardous Substances) Regulations 2017.
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.
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 Adama New Zealand Ltd and serves as their Safety Data Sheet ('SDS'). It is based on information concerning the product which is held by Adama New Zealand Ltd or has been 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. While Adama New Zealand Ltd 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, Adama New Zealand 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.

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