SAFETY DATA SHEET

Date of Issue: June 2014
MSDS No. FMC/CHL720/1

SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: FMC CHLOROTHALONIL 720 FUNGICIDE

Other Names: Chlorothalonil. Chloronitrile chemical family.
Use: Fungicide for protection of various vegetables and tree crops.
Company: FMC Australasia Pty Ltd.
Address: 5 Palmer Place, Murarrie, Qld 4172
Telephone Number: 07 3908 9208 **Fax Number:** 07 3908 9221
Emergency Telephone Number: 1800 033 111 (All hours - Australia wide).

SECTION 2 HAZARDS IDENTIFICATION

Classified as hazardous according to criteria of Safe Work Australia.
Not classified as a Dangerous Good according to the ADG Code.

GHS Classification:
Acute Toxicity – Inhalation: Category 2.
Eye Damage/Irritation: Category 1.
Specific Target Organ Toxicity (Single Exposure): Category 3.
Carcinogenicity: Category 2.
Sensitization – Skin: Category 1, 1A, 1B.
Hazardous to the Aquatic Environment – Acute hazard: Category 1.

Signal Word: DANGER.

Hazard Statements:
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H330 Fatal if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H400 Very Toxic to aquatic life.

Precautionary statements:
Prevention
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P281 Use personal protective equipment as required.
P260 Do not breathe dust, vapours or spray.
P261 Avoid breathing mist, vapours or spray.
P271 Use only outdoors or in a well-ventilated area.
P284 Wear respiratory protection.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response
P308 + P313 IF exposed or concerned: Get medical advice/ attention:
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 Immediately call a POISON CENTER or doctor/physician.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P320 Specific treatment is urgent - see Safety Directions on the label.

SECTION 2 HAZARDS IDENTIFICATION (Continued)

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.

Storage and Disposal

P405	Store locked up.
P403 + P233	Store in a well-ventilated place. keep container tightly closed.
P501	Dispose of contents/container in accordance with national regulations.

Pictograms:

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

CHEMICAL	*CAS NUMBER*	*PROPORTION*
Chlorothalonil	1897-45-6	720 g/L
Other ingredients (including water) determined not to be hazardous		Balance

SECTION 4 FIRST AID MEASURES

FIRST AID

Swallowed: If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26. If swallowed, do not induce vomiting. Rinse mouth with water, and give water to drink. Do not give anything by mouth to a semi-conscious or unconscious person. If vomiting occurs, give more water to drink to assist dilution.

Eye: If in eyes, immediately hold eyes open and flush with copious amounts of water until chemical is removed. If irritation occurs and persists, obtain medical attention.

Skin: If on skin wash with soap and water. Remove contaminated clothing. If irritation occurs and persists see a doctor. Launder contaminated clothing before re-use.

Inhaled: Remove patient to fresh air. If breathing discomfort occurs, obtain medical attention.

Advice to Doctors: Treat symptomatically. No specific antidote is known.

SECTION 5 FIRE FIGHTING MEASURES

Specific Hazard: Considered low risk due to water content, however upon evaporation of water the product is combustible. Low risk of explosion if involved in a fire.

Extinguishing media: Extinguish fire using media suited to burning material. If containers are ruptured contain all runoff. Preferred extinguishing media: alcohol resistant foam, CO_2 or dry chemical. Soft stream water fog if no alternatives. DO NOT use water jet. Contain all runoff.

Hazards from combustion products: This product contains combustible organic components that may burn and decompose during a fire producing dense black smoke containing hazardous products of combustion that can be both toxic and irritating.

Precautions for fire-fighters and special protective equipment: Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe or contact smoke, gases or vapours generated.

SECTION 6 ACCIDENTIAL RELEASE MEASURES

Emergency procedures: Isolate and post spill area. Keep out unprotected persons and animals. Wear cotton overalls buttoned to the neck and wrist, a washable hat, elbow-length PVC gloves and goggles and disposable face mask. Large spills should be dyked or covered to prevent dispersal. Vacuum shovel or pump spilled material into an approved container and dispose of as listed in section 13 or in accordance with the requirements of Local or State Waste Management Authorities.

Material and methods for containment and cleanup procedures: To clean spill area, tools and equipment, wash with a solution of soap, water and acetic acid/vinegar. Follow this with a neutralisation step of washing the area with a bleach or caustic soda ash solution. Finally, wash with a strong soap and water solution. Absorb, as above, any excess liquid and add both solutions to the drums of waste already collected.

Dangerous to fish. Do NOT allow spilled product or wash solution to enter sewers, drains, dams, creeks or any other waterways.

SECTION 7 HANDLING AND STORAGE

Precautions for Safe Handling: Ensure containers are kept closed until using product. Attacks eyes and skin. Avoid contact with eyes and skin. DO NOT inhale spray mist. Repeated exposure may cause allergic disorders. Sensitive workers should use protective clothing. When preparing spray and using prepared spray wear cotton overalls buttoned to the neck and wrist, a washable hat, elbow-length PVC gloves and goggles and disposable face mask. If clothing becomes contaminated with product or wet with spray, remove clothing immediately. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, goggles and contaminated clothing.

Conditions for Safe Storage: DO NOT store near (or allow to contact) fertilizers, fungicides or pesticides. Store in closed original containers, in a cool, well ventilated area away from children, animals, food and feedstuffs. Do not store for prolonged periods in direct sunlight.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure Standards:
Exposure guidelines have not been established for this product by Safe Work Australia, however the manufacturer recommends the following guideline for chlorothalonil.

Atmospheric Contaminant	Exposure Standard (TWA)	STEL (mg/m³)
chlorothalonil	0.1 mg/m³	-

TWA = Time-weight Average STEL = Short term Exposure Limit

Biological Limit Values:
No biological limit allocated.

Engineering controls:
Use in well ventilated area only. Keep containers closed when not in use.

Personal Protective equipment (PPE):
General: When preparing spray and using prepared spray wear cotton overalls buttoned to the neck and wrist, a washable hat, elbow-length PVC gloves and goggles and disposable face mask. If clothing becomes contaminated with product or wet with spray, remove clothing immediately. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, goggles and contaminated clothing

Personal Hygiene: Clean water should be available for washing in case of eye or skin contamination. Wash skin before eating, drinking or smoking. Shower at the end of the workday.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Smooth creamy light grey liquid suspension.
Odour: Slightly pungent.
Boiling point: Not available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES (Continued)

Freezing point:	Not available.
Specific Gravity:	Approximately 1.3 g/mL.
pH:	Not available.
Solubility in Water:	Product suspends in water.
Flammability:	Not flammable.
Flashpoint (°C):	Not applicable.
Flammability Limits (%):	Not established.
Poisons Schedule:	Product is a schedule 6 (S6) poison.
Formulation type:	Suspension Concentrate (SC).

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: Product is considered stable in ambient conditions for a period of at least 2 years after manufacture.

Conditions to avoid: Do not store for prolonged periods in direct sunlight. Avoid oxidizing materials.

Incompatible materials: No particular materials to avoid.

Hazardous decomposition products: This product contains combustible organic components that may burn and decompose during a fire producing dense black smoke containing hazardous products of combustion that can be both toxic and irritating.

Hazardous reactions: Does not polymerise.

SECTION 11 TOXICOLOGICAL INFORMATION

Potential Health Effects:
No specific data is available for this product as no toxicity tests have been conducted on this product. Information presented is our best judgement based on similar products and/or individual components. As with all products for which limited data is available, caution must be exercised through the use of protective equipment and handling procedures to minimise exposure.

Acute

Swallowed: Acute oral toxicity LD_{50} (rat) > 5000 mg/kg. Ingestion may cause irritation to the mouth, throat and stomach. Possible symptoms include nausea, vomiting and central nervous system depression.

Eye: Can be severely irritating to the eyes. Can cause eye damage unless immediately washed out of the eyes.

Skin: Avoid skin contact. May irritate the skin. The dermal LD_{50} (rabbit) > 5000 mg/kg. Chlorothalonil is a skin sensitiser.

Inhaled: This product is Toxic if inhaled. Acute inhalation LC_{50} = 0.1 mg/L/4 hour.

Chronic: Extensive testing of chlorothalonil has found no evidence of mutagenic, neurotoxic, teratogenic or reproductive effects. Subchronic toxicity studies in dogs have shown kidney toxicity, and chronic toxicity studies in rats and mice have shown kidney and forestomach tumours at high doses. This is not considered to be a risk to humans when handled and used as directed on the label.

Chlorothalonil is rapidly excreted, primarily unchanged, from the body. It is not stored in animal tissues.

SECTION 12 ECOLOGICAL INFORMATION

Environmental Toxicology: Chlorothalonil is highly toxic to fish and aquatic organisms. Toxicity to fish: Rainbow trout LC_{50} (96 hr) 0.043 mg/L; Bluegill sunfish LC_{50} (96 hr) 0.059 mg/L. Toxic to Algae: *Selanastrum capricornutum* EC_{50} (120 hr) 210 µg/L. Toxic to aquatic invertebrates: *Daphnia magna* EC_{50} (48 hr) 0.07 mg/L. Low toxicity to bees. Low toxicity to birds Mallard duck LD_{50} > 4640 mg/kg.

SECTION 12 ECOLOGICAL INFORMATION (Continued)

Environmental Properties:. Chlorothalonil has low mobility in soil. Chlorothalonil is moderately persistent. In aerobic soils, the half-life is from 1 to 3 months. Increased soil moisture or temperature increases chlorothalonil degradation. It is not degraded by sunlight on the soil surface. In water the half life is 4.5 hours to 9 days. Chlorothalonil does not store in fatty tissues and is rapidly excreted from the body. Its bioaccumulation factor is quite low.

SECTION 13 DISPOSAL CONSIDERATIONS

Spills & Disposal: In the case of spillage, contain and absorb spilled material with absorbent material such as sand, clay or cat litter and dispose of waste as indicated below or according to the Australian Standard 2507 - Storage and Handling of Pesticides. Wear prescribed protective clothing and equipment. Keep out animals and unprotected persons. Keep material out of streams and sewers. Vacuum, shovel or pump waste into an approved drum. Dispose of drummed wastes, including decontamination solution, in accordance with the requirements of Local or State Waste Management Authorities.

Dangerous to Fish: Do NOT allow spilled product or wash solution to enter sewers, drains, dams, creeks or any other waterways.

Disposal of empty, non-returnable containers: Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on-site. If recycling, replace cap and return containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the container below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. Empty containers and product should not be burnt.

SECTION 14 TRANSPORT INFORMATION

Road & Rail Transport: FMC Chlorothalonil 720 Fungicide is not classified as a Dangerous Goods under the Australian Code for the Transport of Dangerous Goods by Road and Rail in containers less than 3000 litres. Bulk shipments should use UN 3082, as per below.

Marine and Air Transport: FMC Chlorothalonil 720 Fungicide is a Marine Pollutant according to International Maritime Dangerous Goods (IMDG) Code and the International Air Transport Association (IATA). If transporting by sea or air the following Dangerous Goods Classification applies:-
UN 3082, Class 9 (Miscellaneous Dangerous Goods), Packing Group III, Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains 72% Chlorothalonil). Hazchem code ●3Z. Hazard Identification Number (HIN) 90.

SECTION 15 REGULATORY INFORMATION

Classified as a hazardous substance according to criteria of Safe Work Australia. (T+).
Under the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP), this product is a schedule 6 poison.
This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 68952.
Product is not classified as a Dangerous Good according to the ADG Code (7th Ed) in containers less than 3000 litres.
Product is classified as a Dangerous Good according to International Maritime Dangerous Goods (IMDG) Code and the International Air Transport Association (IATA).
Requirements concerning special training:
Check State or Territory regulations that require people who use pesticides in their job or business to have training in the application of the materials.

SECTION 16 OTHER INFORMATION

Issue Date: 5 June 2014. Valid for 5 years. (Correcting Typographical error).

Key to abbreviations and acronyms used in this SDS:

ADG Code:	Australian Dangerous Goods Code (for the transport of dangerous goods by Road and Rail).
Ataxia:	Inability to control the coordinate movements of the muscles.
Bradycardia:	Is a resting heart rate of under 60 beats per minute (adults).
Carcinogen:	An agent which is responsible for the formation of a cancer.
Clonic:	An abnormality in neuromuscular activity characterized by rapidly alternating muscular contraction and relaxation.
Genotoxic:	Capable of causing damage to genetic material, such as DNA.
Haematopoietic:	Pertaining to the formation of blood or blood cells.
Lavage:	The irrigation or washing out of an organ, as of the stomach or bowel.
Mutagen:	An agent capable of producing a mutation.
Oedema:	Accumulation of fluid in tissues.
NOHSC:	National Occupational Health and Safety Commission.
Teratogen:	An agent capable of causing abnormalities in a developing foetus.
Safe Work Australia:	Formally known as Australian Safety & Compensation Council (ASCC) which was formally known as the National Occupational Health & Safety Commission (NOHSC).

References

1. “Search Hazardous Substances”. Safe Work Australia website. (2014).
2. “Approved Criteria for Classifying Hazardous Substances” 3rd Ed. NOHSC Australia. [NOHSC:1008 (2004)]. October 2004.
3. Globally Harmonized System of Classification and Labelling of Chemicals (GHS). United Nations, 2009.

This SDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this SDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

End SDS