

MATERIAL SAFETY DATA SHEET

STATEMENT OF HAZARDOUS NATURE:

Hazardous according to the criteria of NOHSC Australia

COMPANY DETAILS:

Syngenta Crop Protection Pty Limited
ABN 33 002 933 717
Level 1, 2-4 Lyon Park Road
NORTH RYDE, NSW 2113

Telephone No.: (02) 8876 8444
24 Hours Emergency No.: 1 800 033 111

IDENTIFICATION

PRODUCT NAME: Bravo Fungicide

Formulation type:	Suspension concentrate	UN number:	none allocated
Active ingredient:	Chlorothalonil	Dangerous goods class:	none allocated
Product code:		Subsidiary risk:	none allocated
Chemical type:	chloronitrile	Hazchem code:	none allocated
Poisons schedule:	6	Packing group:	none allocated
		EPG/IERG:	none allocated

USE: Controls fungal diseases on Almonds, Bananas, Cucurbits, Grapes, Ornamentals, Peanuts, Stone Fruit, Tobacco and Vegetables as specified in the Directions for Use table.

PHYSICAL DESCRIPTION/PROPERTIES

Appearance:	light grey viscous liquid	Flash Point:	does not flash
Odour:	slightly pungent	Flammability limits:	not applicable
Boiling point:	> 100°C	Explosive properties:	not applicable
Melting point:	-5°C	Solubility in water:	dispersible
Specific gravity:	1.345 g/cm ³	Vapour pressure:	not available
pH	6.5 – 9.5	Oxidising properties:	not applicable

INGREDIENTS

	CAS No.	Content (%w/v)
Chlorothalonil	1897-45-6	720 g/L
water	7732-18-5	30 - 60
Other ingredients determined not to be hazardous	----	10 - 29

HEALTH HAZARD INFORMATION

HEALTH EFFECTS

ACUTE TOXICITY

This product is harmful according to NOHSC Australia.

Swallowed:	NOT HARMFUL Tests on rats indicate this product is NOT HARMFUL following single doses of active ingredient. (LD ₅₀ = 10,000 mg/kg)
Dermal absorption:	NOT HARMFUL Tests on rats indicate this product is NOT HARMFUL following skin contact with active ingredient. (LD ₅₀ = 10,000 mg/kg)
Inhaled:	Unlikely to be harmful when handled and used as directed on the label. Tests on rats indicate this product is VERY TOXIC due to inhalation of the active ingredient. (LD ₅₀ = 0.1 mg/L 4hr)

Irritation

Eye: **SEVERE IRRITANT**
 Skin: **SLIGHT IRRITANT**

Sensitisation

Skin: **SKIN SENSITISER**

Poisoning symptoms:

Ingestion of large amounts of the material may be expected to cause general depression, diarrhoea and irritation of the mouth, oesophagus and stomach. Eye contact may cause irritation, conjunctivitis and corneal opacity. Contact with skin may result in irritation. Inhalation of mists or aerosols may produce respiratory irritation.

CHRONIC TOXICITY (Active Ingredient)

Chlorothalonil technical has been extensively tested in mammals and in test-tube systems. No evidence of mutagenic, neurotoxic, teratogenic or reproductive effects was obtained. 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.

FIRST AID

In case of poisoning by any exposure route contact a doctor or Poisons Information Centre. Phone 13 11 26.

Swallowed: Rinse mouth with water. Do NOT induce vomiting. Give a glass of water. Seek medical assistance.
 Eye: If product gets in eyes wash it out immediately with water for at least 15 minutes. Hold eyelids open. Seek immediate medical attention.
 Skin: If skin contact occurs remove contaminated clothing and wash affected areas thoroughly with soap and water. Wash contaminated clothing before re-use.
 Inhaled: Move person to fresh air and keep at rest until recovered. Remove any contaminated clothing and loosen remaining clothing. If any signs or symptoms occur or persist, seek medical attention.

ADVICE TO DOCTOR

No specific antidote exists. Treat symptomatically. Chlorothalonil may produce temporary allergic reactions (redness of eyes, mild bronchial irritation, redness or rash on exposed skin). Anti-histamine or steroid creams are effective barrier treatments.

PRECAUTIONS FOR USE

ALWAYS READ AND FOLLOW THE LABEL INSTRUCTIONS AND WARNINGS

EXPOSURE STANDARDS

No value assigned for this specific material by NOHSC, however, supplier recommended hygiene standard -

	TWA	
	ppm	mg/m ³
Clorothalonil		0.1

TWA = The time weighted average airborne concentrations over an eight-hour working day, for a five-day working week over an entire working life.

Exposure Potential - Swallowing is unlikely under normal conditions of usage. Significant skin uptake does not occur. Inhalation is a possible route of exposure. This product is diluted with water prior to use as a spray. This diluted form is less toxic by all routes of exposure.

Re-entry Period - Do not enter treated areas without protective clothing until spray has dried.

ENGINEERING CONTROLS

No special requirements. Product is used outdoors. Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards. Keep containers closed when not in use. For space applications, wear cotton overalls buttoned to the neck and wrist, a washable hat, elbow-length butyl rubber gloves, goggles, and half facepiece respirator with dust cartridge or canister.

PERSONAL PROTECTION

MANUFACTURE, PACKAGING AND TRANSPORT: Avoid skin and eye contact and the inhalation of vapour. Wear overalls, chemical goggles and impervious gloves. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using. If inhalation risk exists, wear combined organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

PREPARATION AND USE OF PRODUCT: 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 the prepared spray wear cotton overalls buttoned to the neck and wrist, a washable hat, elbow-length PVC gloves, goggles and disposable mist mask. 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 and goggles and contaminated clothing.

Only use protective equipment bearing the mark of the Standards Association of Australia.

FLAMMABILITY

This product is non combustible.

SAFE HANDLING INFORMATION**STORAGE AND TRANSPORT**

Store in tightly sealed original containers in a dry secure place away from fertilisers, seed, feed and food. Store out of direct sunlight. Keep out of reach of children, unauthorised persons and animals.

Transport Classification – Sea (IMDG):

UN No.:	3082	Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID N.O.S. (CONTAINS CHLOROTHALONIL 72%)
Class:	9	Additional Information:	CHLOROTHALONIL 72%, MARINE POLLUTANT
Packing Group:	III		

SPILLS AND DISPOSAL

In case of spillage it is important to take all steps necessary to:

- Avoid eye and skin contact.
- Avoid contamination of waterways.

Procedure for spill:

- (1) Keep all bystanders away.
- (2) Wear full length clothing and PVC gloves.
- (3) Re-position any leaking containers so as to minimise further leakage.
- (4) Dam and absorb spill with an absorbent material (e.g. sand or soil).
- (5) Shovel the absorbed spill into drums.
- (6) Disposal of the absorbed material will depend upon the extent of the spill.
 - For quantities up to 50L of product bury in a secure landfill site.
 - For quantities greater than 50L seek advice from the manufacturer (use emergency contact number below) before attempting disposal. Contain in a secure location until disposal method is established.
- (7) Decontaminate the spill area with detergent and water and rinse with the smallest volume of water practicable.

Dispose of empty, used containers by:

- (a) Triple rinsing or preferably pressure rinsing containers with water. Add the rinsings to the spray tank. DO NOT dispose of undiluted chemicals on site.
- (b) If recycling, replace cap and return clean containers to recycler or designated collection point.
- (c) If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

Returnable containers:

- (a) Empty contents fully into application equipment.
- (b) Close all valves and return to Syngenta Crop Protection, Pendle Hill, Sydney for re-use.

FIRE/EXPLOSION HAZARD

This product is non-flammable, non-explosive and is non-combustible. Extinguish warehouse and factory fires using fine water-spray or foam. During a fire this product may release smoke and hazardous decomposition products including hydrogen chloride (HCl). When fighting a major fire wear SCBA and structural firefighters uniform. Do not allow fire-water to enter drains.

OTHER INFORMATION

The active ingredient **chlorothalonil** is very toxic to aquatic organisms. Contamination of waterways should be strictly avoided. DO NOT apply under weather conditions or from spraying equipment which could be expected to cause spray to drift onto adjacent areas, particularly streams, rivers or other waterbodies.

Rainbow Trout, *Oncorhynchus mykiss*, LC₅₀ (96 h) = 49 µg/L, Bluegill sunfish, LC₅₀ (96 h) = 62 µg/L

Channel catfish LC₅₀ (96 h) = 44 µg/L, Water Flea, *Daphnia magna*, LC₅₀ (48 h) = 70 µg/L

Brown shrimp LC₅₀ (48 h) = > 1000 µg/L, pink shrimp LC₅₀ (48 h) = 165 µg/L

LogPOW is 2.89. Risk of bioaccumulation in an aquatic species is low.

Chlorothalonil is practically non-toxic to birds, mammals, bees and earthworms.

Oral LD₅₀ (mallard duck) > 4640 mg/kg, 8 day dietary LC₅₀ (mallard duck) > 10,000 mg/kg,

8 day dietary LC₅₀ bobwhite quail > 10,000 mg/kg.

Chlorothalonil is rapidly degraded in soils with a half life ranging from a few hours to a few days.

Note: This product is a registered agricultural chemical and must therefore be used in accordance with the container label directions. A comprehensive package of toxicological and environmental data for the active ingredients of this product has been submitted to the Federal health and environment authorities and has been evaluated by expert toxicologists and environmental scientists.

CONTACT POINT: Regulatory Affairs Manager - Crop Protection - (02) 8876 8444
24 HOURS EMERGENCY CONTACT: 1 800 033 111

This Material Safety Data Sheet 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 MSDS 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.

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