

Material Safety Data Sheet



1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product name: BRAVO 720

Synonyms: Crop Care MSDS No. 42456, Tetrachloroisophthalonitrile, Chlorothalonil, Agchem Bravo 720 Fungicide

CAS-No.:

Molecular Formula:

Supplier: Crop Care Australasia Pty Ltd
ACN: 061 362 347
Street Address: 77 Tingira Street
Pinkenba 4008
Australia
Telephone: + 61 7 3867 9100
Facsimile: + 61 7 3867 9110

Emergency telephone number: 1 800 033 111 (ALL HOURS)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Recommended use: Broad spectrum fungicide.

Appearance: Liquid (Suspension concentrate).

CHEMICAL ENTITY	CAS NO.	PROPORTION
Chlorothalonil	1897-45-6	720 g/L
Water	7732-18-5	HIGH
Other ingredients determined not to be hazardous	-	MED
	-	
	-	100%

PROPORTION (% weight per weight):

VHIGH >60, HIGH 30-60, MED 10-29, LOW 1-9, VLOW <1

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS) or are National Registration Authority (NRA) approved active constituents.

3. HAZARDS IDENTIFICATION

Hazardous according to criteria of Worksafe Australia.

Hazard Category

Xn Harmful

Product name: BRAVO 720

Substance Key: 000504245601

Issued : 02.02.2000

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R-phrases

R40(3) Possible risks of irreversible effects.

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Poisons Schedule (Aust)/Toxic Substance (NZ): S6

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

4. FIRST AID MEASURES

Poison Information Centres in each State capital city can provide additional assistance for scheduled poisons (Phone Australia; 131 126).

Ingestion: Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek medical advice.

Eye contact: Irrigate with copious quantities of water for at least 15 minutes. In all cases of eye contamination it is a sensible precaution to seek medical advice.

Skin contact: Wash contaminated skin with plenty of soap and water. Remove contaminated clothing and wash before re-use. If irritation occurs seek medical advice.

Inhalation: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

Notes to physician: Treat symptomatically. Chlorothalonil may produce temporary allergic reactions (redness of eyes, mild bronchial irritation, redness or rash on exposed skin). Antihistamine or steroid creams are effective barrier treatments. (1)

5. FIRE-FIGHTING MEASURES

Specific hazards: Non combustible liquid.

Fire fighting further advice: Not combustible. Decomposes on heating emitting toxic fumes including hydrogen chloride (HCl). Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of decomposition.

Suitable extinguishing media: Water fog (or if unavailable fine water spray), foam, dry agent (carbon dioxide, dry chemical powder).

6. ACCIDENTAL RELEASE MEASURES

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SMALL SPILLS: Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers for disposal. Wash area down with detergent and excess water.

LARGE SPILLS: Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled drums for disposal. Wash area down with detergent and excess water. If contamination of crops or waterways has occurred advise emergency services or State Department of Agriculture.

7. HANDLING AND STORAGE

Storage: Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers.

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National occupational exposure limits

No value assigned for this specific material by the National Occupational Health and Safety Commission (Worksafe Australia).

However, supplier recommended hygiene standard for constituent,

	TWA	
	ppm	mg/m ³
Chlorothalonil *	-	0.1

* Supplier recommended. (1)

The recommended hygiene standard (TWA) is the time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers. These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is practicable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals.

They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

Engineering measures: Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Hygiene Standard. Keep containers closed when not in use.

Personal protection equipment: Orica Personal Protection Guide No.1, 1998: C - OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES (S).

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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 and a washable hat and elbow-length PVC gloves and 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form / Colour / Odour: Liquid (Suspension concentrate).

Solubility: Dispersible in water.

Specific Gravity (20 C)	: 1.34	Melting Point (C)	: N App
Rel Vapour Density (air=1)	: N Av	Boiling Point (C)	: N Av
Vapour Pressure (20 C)	: N Av	Decomp. Point (C)	: N Av
Flash Point (C)	: N App	Sublimation Point	: N App
Flammability Limits (%)	: N App	pH	: N Av
Autoignition Temp (C)	: N App	Viscosity	: N Av
% Volatile by volume	: N Av	Evaporation Rate	: N Av
Solubility in water (g/L)	: N Av	(n-Butyl acetate=1)	
LogPow (Chlorthalonil)	: 2.89		

(Typical values only - consult specification sheet)
N Av = Not available N App = Not applicable

10. STABILITY AND REACTIVITY

Stability: No information available.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms that may arise if the product is mishandled are:

Acute Effects

Ingestion: No adverse effects expected, however large amounts may cause general depression, diarrhoea and irritation of the mouth, oesophagus and stomach. (1)

Eye contact: May be an eye irritant. May cause conjunctivitis and corneal opacity. (1)

Skin contact: Contact with skin may result in irritation. May cause skin sensitisation in sensitive individuals.

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Inhalation: Inhalation of mists or aerosols may produce respiratory irritation.

Long Term Effects

Available evidence indicates that repeated or prolonged exposure to chlorothalonil may cause kidney disorders.
(1)

Acute toxicity / Chronic toxicity

No LD50 data available for the product. However, for the constituent,
CHLOROTHALONIL: (1)

Oral LD50 (rat): >10000 mg/kg.

Oral LD50 (dog): >5000 mg/kg.

Dermal LD50 (rabbit): >10000 mg/kg.

Inhalation LC50 (rats): >4.7 mg/L/1hr.

Inhalation LC50 (rats): 0.1 mg/L/4hr.

Inhalation LC50 (rat): 0.092 mg/L/4hr (hammer milled technical, unground - typical commercial product).

Inhalation LC50 (rat): 0.10 mg/L/4hr (technical finely ground - 1.3-4.5 microns).

SKIN: Mild irritant (rabbit). Evidence in humans of contact dermatitis.

EYES: Severe irritant.

Negative in IN VITRO and IN VIVO mutagenicity assays.

Tests indicated that chlorothalonil technical (dust) settles rapidly over time.

Subchronic studies in dogs have revealed renal toxicity. The NOAEL (no observed adverse effect level) for dogs is 120 mg/kg diet.

Chronic studies with rats have shown kidney tumours at high doses.

These results and other metabolic studies indicate that rats are particularly sensitive to renal tumours and they are not considered relevant to human exposure.

Chronic administration of Chlorothalonil has been associated with tumor formation in the kidney and forestomach of rats and mice.

Acceptable Daily Intake (ADI) for humans is 0.01 mg/kg/day. (2)

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.

For CHLOROTHALONIL: (1)

AQUATIC TOXICITY

Very toxic to aquatic organisms.

96hr LC50 (rainbow trout): 49 ug/L.

96hr LC50 (bluegill sunfish): 62 ug/L.

96hr LC50 (channel catfish): 44 ug/L.

48hr LC50 (Daphnia magna): 70 ug/L.

48hr LC50 (brown shrimp): >1000 ug/L.

48hr LC50 (pink shrimp): 165 ug/L.

LogPow is 2.89

Risk of bioaccumulation in an aquatic species is low.

TERRESTRIAL TOXICITY:

Harmless to terrestrial species.

Oral LD50 (mallard ducks): >4640 mg/kg.

Dietary LC50 (mallard ducks, 8d): >10,000 mg/kg.

Dietary LC50 (bobwhite quail, 8d): >10,000 mg/kg.

Non toxic to bees.

ENVIRONMENTAL FATE AND DISTRIBUTION:

Chlorothalonil is rapidly degraded in soil, with half-lives ranging from a few hours to a few days.

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It is predicted to have low mobility in soil.

13. DISPOSAL CONSIDERATIONS

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 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 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.

14. TRANSPORT INFORMATION

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

This material is classified as a Marine Pollutant according to the International Maritime Dangerous Goods Code.

15. REGULATORY INFORMATION

Hazardous according to criteria of Worksafe Australia.

Hazard Category

Xn Harmful

R-phrases

R40(3) Possible risks of irreversible effects.

S-phrases

S 2 Keep out of reach of children.
S24/25 Avoid contact with skin and eyes.
S44 If you feel unwell, contact a doctor or Poisons Information Centre immediately (show the label where possible).

Poisons Schedule (Aust)/Toxic Substance (NZ): S6

16. OTHER INFORMATION

Literary reference

(1) Material Safety Data Sheet - Chlothalonil technical (CDS 11614)
Orica Australia Pty Ltd. 12/98

(2) ADI List, Commonwealth Department of Health and Family Services. 04/97

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This Material Safety Data Sheet has been prepared by SHE Pacific Pty Ltd on behalf of Orica Ltd and its subsidiary companies.

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Reason(s) For Issue: Change to Dangerous Goods Requirements.

Change to Personal Protection Requirements.

Alignment to Worksafe Requirements.

Safety Data Sheets are updated frequently. Please ensure that you have a current copy.

This MSDS summarises at the date of issue our best knowledge of the health and safety hazard information of the product, and in particular how to safely handle and use the product in the workplace. Since Orica Limited and its subsidiaries cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product in the workplace.

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

Our responsibility for product as sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available upon request.