

RICHGRO GARDEN PRODUCTS

Material Safety Data Sheet – Mancozeb Plus Sulphur Fungicide

1. SUPPLY COMPANY IDENTIFICATION

Product name: Mancozeb Plus Sulphur Fungicide

Synonyms:

CAS-No:

Molecular Formula:

Supplier: Richgro Garden Products

ABN: 97 008 734 852

Street Address: 203 Acourt Road
Canning Vale WA 6155
Australia

Telephone: + 61 8 9455 1323

Facsimile: + 61 8 9455 1297

Emergency telephone number: 1800 455 132 Monday to Friday 9am to 5pm

2. COMPOSITION INFORMATION

Recommended use: For the control of certain diseases of Apples, Vegetables, Flowers and Turf.

Appearance: Brown-yellow powder.

CHEMICAL	ENTITY CAS NO.	PROPORTION
Mancozeb	8018-01-7	240 g/kg
Sulphur	7704-34-9	560 g/kg
Other non hazardous materials	-	200 g/kg
		100%

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

3. HAZARDS IDENTIFICATION

Hazardous according to criteria of Worksafe Australia.

Hazard Category

Xi Irritant

R-phrases(s)

R36/38 Irritating to eyes and skin.

R43 May cause sensitization by skin contact.

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail.

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Poisons Schedule (Aust)/Toxic Substance (NZ): S5

This material is a Scheduled Poison S5 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 13 11 26).

Ingestion: Rinse mouth with water. Give plenty of water to drink. Avoid giving alcohol. If vomiting occurs give further water. Seek medical advice.

Eye contact: Immediately irrigate with copious quantities of water for at least 15 minutes. Eyelids to be held open. Remove clothing if contaminated and wash skin. Seek immediate medical assistance.

Skin contact: Wash contaminated skin with plenty of soap and water. Remove contaminated clothing and wash before re-use. If swelling, redness, blistering, or 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.

Notes to physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Specific hazards: Non-combustible solid.

Fire fighting further advice: Non-combustible solid. On burning may emit toxic fumes. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of combustion.

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

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILLS: Wear protective equipment to prevent skin and eye contamination and the inhalation of dust. Cover with damp absorbent (inert material, sand or soil). Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers for disposal. Wash area down with detergent and excess water.

LARGE SPILLS: Wear protective equipment to prevent skin and eye contamination and the inhalation of dust. Cover with damp absorbent (inert material, sand or soil). Sweep or vacuum up, but avoid generating dust. 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

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Storage: Store in the closed, original container in a dry, well-ventilated area, as cool as possible out of direct sunlight. Do not allow product to become wet or over-heated in storage.

This material is a Scheduled Poison S5 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).

Engineering measures: Avoid generating and inhaling dusts. Use with local exhaust ventilation or while wearing dust mask. Keep containers closed when not in use.

Personal protection equipment: OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES (S), DUST MASK.

Avoid skin and eye contact and inhalation of dust. Wear overalls, safety glasses and impervious gloves. Avoid generating and inhaling dusts. Avoid generating and inhaling dusts. If dust exists, wear a dust respirator/mask meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form / Colour / Odour: Brown-yellow powder.

Solubility: Disperable in water.

Specific Gravity (20 C)	: 2.1#	Melting Point (C)	: 113#
Rel Vapour Density (air=1)	: N Av	Boiling Point (C)	: 445#
Vapour Pressure (20 C)	: 0.13 kpa#	Decomp. Point (C)	: N Av
Flash Point (C)	: 207 (CC)#	Sublimation Point	: N App
Flammability Limits (%)	: N App	pH	: N App
Autoignition Temp (C)	: 232#	Viscosity	: N App
% Volatile by volume	: Nil	Evaporation Rate	: N App
Solubility in water(17 C)	: Soluble	(n-Butyl acetate=1)	

- values for Sulphur component

(Typical values only - consult specification sheet)

N Av = Not available

N App = Not applicable

10. STABILITY AND REACTIVITY

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Stability: May cause explosive reactions on contact with oxidising agents. Will corrode damp steel. Reacts violently with finely divided metals, alkali metals and mineral acids.

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:

Ingestion: Swallowing can result in nausea, vomiting, diarrhoea and abdominal pain. Ingested sulfur is converted to sulfides in the gastrointestinal tract, and ingestion of 10-20 grams has caused irritation of the gastrointestinal tract and renal injury.

Eye contact: An eye irritant.

Skin contact: Contact with skin will result in irritation. A skin sensitiser. Repeated or prolonged skin contact may lead to allergic contact dermatitis. Cross-sensitisation can occur between mancozeb, zineb and maneb. (1)

Inhalation: Inhalation of dust may result in respiratory irritation. Inhalation of high concentrations may result in effects described above for 'SWALLOWED'.

Long Term Effects: Available evidence indicates that repeated or prolonged exposure to Mancozeb may result in adverse effects on the thyroid gland. Repeated or prolonged inhalational exposure to sulfur may cause lung irritation.

Acute toxicity / Chronic toxicity

No LD50 data available for the product. However, for the constituent:

MANCOZEB:

Oral LD50 (rat): 8000 mg/kg.

Dermal LD50 (rat): 10000 mg/kg.

Dermal LD50 (rabbit): >5000 mg/kg.

Inhalation LC50 (rat): >5.14 mg/L/4hr.

Mancozeb has an overall equivocal result for mutagenicity, based on several in vitro and in vivo assays.

No observable adverse effects were observed in rats fed 250 mg/kg of Mancozeb in their diet for 2 years.

Teratogenicity studies in animals reveal malformations in foetuses only at maternally toxic doses.

Reduced fertility (in the first and second generation) was observed in a three year reproductive study in rats fed 1000 mg/kg. No effect was observed on gestation, lactation, viability of offspring nor weaning weight.

In a 2 year carcinogenicity study, Mancozeb caused thyroid hyperplasia in rats fed 500 mg/kg in their diet.

ADI (Acceptable daily intake) for humans is 0.006 mg/kg/day.

SULPHUR:

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Oral LD50 (rat): >8437 mg/kg. (3)
Oral Lowest Lethal Dose (rabbit): 175 mg/kg. (3)

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.

No environmental impact data found for this product. However, for the constituent:

MANCOZEB:

AQUATIC TOXICITY

Toxic to aquatic organisms.
96hr LC50 (Poecilia reticulata): 2.6 mg/L.
48hr LC50 (Daphnia Magna): 1.3 mg/L.
48hr LC50 (rainbow trout): 2.2 mg/L.
48hr LC50 (gold fish): 9.0 mg/L.
48hr LC50 (catfish): 5.2 mg/L.
48hr LC50 (carp): 4.0 mg/L.

TERRESTRIAL TOXICITY

Harmless to terrestrial species.
LD0 (No deaths) (mallard duck, 10d): 6400 mg/kg.
LD0 (No deaths) (Japanese quail, 10d): 3200 mg/kg.
Oral LD50 (bee): 0.193 mg/bee.

ENVIRONMENTAL FATE AND DISTRIBUTION

Decomposes on prolonged exposure to air or moisture. Rapidly degraded in the environment by hydrolysis, oxidation, photolysis and metabolism. The half life in soil is up to 15 days.

13. DISPOSAL CONSIDERATIONS

Refer to State Land Waste Management Authority. Normally suitable for disposal at approved land waste site.

14. TRANSPORT INFORMATION

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail.

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15. REGULATORY INFORMATION

Hazardous according to criteria of Worksafe Australia.

Hazard Category

Xi Irritant

R-phrases(s)

R36/38 Irritating to eyes and skin.
R43 May cause sensitization by skin contact.

S-phrases(s)

S24/25 Avoid contact with skin and eyes.
S27 Take off immediately all contaminated clothing.
S36 Wear suitable protective clothing.

Poisons Schedule (Aust)/Toxic Substance (NZ): S5

16. OTHER INFORMATION

REFERENCES:

1. Material Safety Data Sheet – Mancozeb Tech. Supplier. 02/98
2. Material Safety Data Sheet – Sulphur Tech. Supplier.

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 Richgro Garden Products 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.