



Willowood Limited

MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Mancozeb (64 %) + Metalaxyl-M (4%) 68 % WG

Chemical types: - phenylamide Packaging Group: III
Chemical Name : Mancozeb ; manganese ethylenebis(dithiocarbamate) (polymeric) complex with zinc salt
Metalaxyl : methyl *N*-(methoxyacetyl)-*N*-(2,6-xylyl)-DL-alaninate

Use : Fungicide for the control of certain foliar diseases of Cucurbits, Lettuce, Onions, Ornamentals, Potatoes, Rhubarb, Strawberries (non-fruited) and Tobacco.

Company Identification

Willowood Limited

Unit 1903-04, North Point Asia Pac-Center, 10 North Point Road, North Point
Hong Kong. Phone: 2571-3011 Fax: 2571-3410 Email: sales@willowoodhk.com

2 COMPOSITION / ACTIVE INGREDIENT INFORMATION

Ingredient Name	CAS #	Concentration
Mancozeb ; manganese ethylenebis(dithiocarbamate) (polymeric) complex with zinc salt	8018-01-7	64 %
Metalaxyl-M : methyl <i>N</i> -(methoxyacetyl)- <i>N</i> -(2,6-xylyl)-DL-alaninate	57837-19-1	4 %

Ingredients not precisely identified are proprietary or non-hazardous.

3 HAZARDS IDENTIFICATION

HEALTH EFFECTS

ACUTE Toxicity - This product is unlikely to present a toxicity hazard during normal use (WHO Hazard Class 111)

Swallowed: **LOW TOXICITY**

Tests on rats indicate a low toxicity following single doses of undiluted product.

Tests on rats indicate a low toxicity due to dermal contact with undiluted product.

LOW TOXICITY

The risk of inhaling this product is low as it is a water dispersible granule. Tests on rats using a similar product (wettable powder containing same concentrations of metalaxyl-M and mancozeb) indicate a low toxicity due to inhalation of undiluted product (LC50(4h) >5.16mg/L)

Irritation (based on studies with rabbits using undiluted product)-

Eye: **NON-IRRITANT**

Skin: **NON-IRRITANT**





Sensitisation (based on studies with Guinea pigs)

Skin: SENSITISER - May cause skin sensitisation by skin contact

Poisoning symptoms:

No case of human poisoning due to this product is on record. The poisoning symptoms observed for laboratory mammals were non-specific.

CHRONIC (Active Ingredients)

Mancozeb has been extensively tested on laboratory mammals and in test-tube systems. At high levels mancozeb affects the thyroid, liver, and nervous system in laboratory animals. The thyroid and liver effects are due to its metabolism in small amounts to ethylenethiourea (ETU), which interferes with thyroid hormonesynthesis and induces stress-related liver growth. No evidence of mutagenic effects was obtained. Ethylenethiourea, a trace contaminant and breakdown product of mancozeb, has caused thyroid and pituitary tumours, which occurred at dose levels higher than likely human expose levels for the use of this product. ETU has caused birth defects in laboratory mammals at high dose levels that interfered with normal thyroid function.

Metalaxyl-M, either as technical grade Metalaxyl-M or as a 50% component of technical grade metalaxyl, has been extensively tested on laboratory mammals and in test-tube systems. No evidence of mutagenic, teratogenic or reproductive effects was obtained

4 FIRST AID MEASURES

In case of poisoning by any exposure route contact a doctor or Poisons Information Centre. Phone 131126.

Swallowed: If poisoning occurs contact a doctor or Poisons Information Centre.

Eye: Flush with large quantities of clean tap water for at least 15 minutes.

Skin: Remove contaminated clothing and wash affected areas thoroughly with soap and water.

Inhaled: Move affected person to fresh air and keep at rest until recovered.

ADVICE TO DOCTOR

No specific antidote exists. Treat symptomatically.

5 FIRE FIGHTING MEASURES

This product is non-flammable and non-explosive. Product is combustible. Thermal decomposition may yield carbon disulfide and hydrogen sulfide. Extinguish warehouse and factory fires using fine-water spray or foam. Do not allow fire-water to enter drains

6 ACCIDENTAL RELEASE MEASURES

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) Reposition any leaking containers so as to minimise leakage.





Willowood Limited

- (4) For a product spill: Sweep granule concentrate into a pile.
For a prepared spray spill: Dam and absorb spill with an absorbent material (eg. sand or soil).
- (5) Shovel the absorbed material or granule concentrate into drums.
- (6) Disposal of the absorbed material will depend upon the extent of the spill.
- For quantities up to 50 kg of product bury in a secure landfill site.
 - For quantities greater than 50 kg 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 water.
- Dispose of empty, used containers by:
- (a) Single rinsing liner with water. Add the rinsings to the tank mix or dispose of rinsate in a disposal pit away from desirable plants and their roots, and watercourses. On-site disposal of undiluted product is unacceptable.
- (b) Crushing or puncturing the container to prevent reuse.
- (c) Disposing of in a local authority landfill site that does not burn its refuse. If there is no local authority landfill readily available in your area, bury the containers under at least 50 cm of soil at a licensed/approved disposal site. DO NOT burn empty containers or product.

7 HANDLING AND STORAGE

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 in a well ventilated area. Keep out of reach of children, unauthorised persons and animals. DO NOT allow this product to become wet or overheated in storage - this may hasten the decomposition of mancozeb giving impaired activity of the product, or can result in fire. Product is combustible - DO NOT ignite. Store product on pallets no more than 3 high. Provide access aisles for each 2 rows. Loose containers should not be stacked more than 2x2x2 metres. Dense packing of unvented stacks of product may lead to product decomposition posing a fire hazard. Decomposing product produces a foul odour. Check for hot containers and immediately remove to open areas for disposal.

Avoid contact with oxidising agents and acids

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

No exposure standards have been assigned for metalaxyl-M or any of the non-active ingredients.

The manufacturer of mancozeb recommends an exposure limit of 1 mg/kg (TWA).

The nuisance particulate exposure standard for dusts is 10mg/m³ of inspirable air.

This product is a granule and is unlikely to result in dust exceeding this limit under normal use conditions.

Exposure Potential - Swallowing is unlikely under normal conditions of usage. Significant skin uptake does not occur. Inhalation of the powder 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 exposure routes. Wear a half face-piece respirator with dust cartridge if the level of nuisance particulate dust in the air is likely to exceed the exposure standard. Use only protective equipment bearing the mark of the Standards Association of Australia.





Willowood Limited

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

ENGINEERING CONTROLS

No special requirements. Product is used outdoors.

PERSONAL PROTECTION

Will irritate the eyes, nose, throat and skin. Avoid contact with the eyes and skin. Do not inhale dust or spray mist. When preparing spray and using prepared spray wear:

- cotton overalls buttoned to the neck and wrist,
- a washable hat,
- elbow-length PVC gloves and
- face shield or goggles.

If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

FLAMMABILITY

This product is not highly-FLAMMABLE. Product is combustible.

9 PHYSICAL AND CHEMICAL PROPERTIES

- Physical state / formulation type :Granule
- Colour : White to off-white
- Odour :weak
- Density :0.45-0.65g/cm³
- Bulk density :NA
- Flammability :not highly flammable

10 STABILITY AND REACTIVITY

STABILITY: Stable under standard conditions. Avoid excessive heat and prolonged storage.
HAZARDOUS POLYMERIZATION: Will not occur.

11 TOXICOLOGICAL INFORMATION

ACUTE

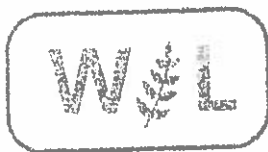
Toxicity - This product is unlikely to present a toxicity hazard during normal use (WHO Hazard Class 111)

Swallowed: LOW TOXICITY

Tests on rats indicate a low toxicity following single doses of undiluted product.
(LD50 >2000mg/kg)

Dermal
absorption:
Inhaled:





Willowood Limited

LOW TOXICITY . Tests on rats indicate a low toxicity due to dermal contact with undiluted product.
(LD50 >2000mg/kg)

LOW TOXICITY

The risk of inhaling this product is low as it is a water dispersible granule.

Tests on rats using a similar product (wetable powder containing same concentrations of metalaxyl-M and mancozeb) indicate a low toxicity due to inhalation of undiluted product.

(LC50(4h) >5.16mg/L

12 ECOLOGICAL INFORMATION

s very toxic to fish and algae [ErC50 (96 h), Salmo trutta (trout) = 0.54 mg/L; LC50 (72h),

Selenastrum capricornutum (green algae) = 0.99 mg/L].

Mancozeb is very toxic to green algae [EC50 (72-120 h), Seienastrum, Scenedesmus, Chlorella = 0.06 to 2.24 mg/L], moderately toxic to Daphnia [EC50 (48 h), Daphnia = 1.0 mg/L] and fish [LC50 (48 h), rainbow trout = 1.9 mg/L] and practically non-toxic to birds, bees and earthworms.

Metalaxyl-M technical is practically non-toxic to fish, birds and bees.

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

13 DISPOSAL

To be disposed of as per local laws.

14 TRANSPORT INFORMATION

Road and Rail (ADG), Sea (IMDG):

UN No: 3077 Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS

Class: 9 SUBSTANCE, SOLID, N.O.S.

Packing Group: III Additional Information: MANCOZEB 64%, MARINE POLLUTANT

15 REGULATORY INFORMATION

SARA TITLE III CLASSIFICATION:

SECTION 311/312: Acute Health Hazard

Chronic Health Hazard

SECTION 313 (chemicals):

Proposition 65: Not applicable

CERCLA Reportable Quantity (RQ):

RCRA CLASSIFICATION: Not applicable. TSCA STATUS: Exempt, subject to FIFRA.





Willowood Limited

16 OTHER INFORMATION

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification, since the conditions of the operations mentioned are beyond our control. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text. Willowood disclaims any liability for loss or damage resulting from the use of these data, information or suggestions.

