

Safety Data Sheet (SDS) MAN700WP/01

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According to UN GHS 9th Ed
Revision Date: 2022/01/25

First print date: 2015/03/09

Version: 2.4

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

Product identifier:

Identification as on the label/Trade name: **MANCOLAX 700WP**

Additional information: Product code MAN 700WP/01

Relevant identification uses of the substance and uses advised against:

Identified uses: Fungicide.

Uses advised against: Use only as directed.

Details of the supplier of the Safety Data Sheet:

NULANDIS, A Division of AECI Limited
14 Field Road, LILANTON

Emergency telephone numbers:

Griffon Poison information centre: 082 446 8946
Poisons Information Helpline: 0861 555 777
Nulandis: (011) 823 8000 (o/h) Spill Tech: 086 100 0366 (a/h)

SECTION 2. HAZARD IDENTIFICATION

Classification of the substances or mixture

The mixture is classified according to

SANS 10234:2019, Regulation EC 1272/2008 [EU-GHS/CLP]	
Hazard classes/Hazard categories	Hazard statement
Skin sensitisation (Category 1)	H317
Carcinogenicity (Category 2)	H351
Reproductive toxicity (Category 1B)	H360D
Specific Target Organ Toxicity repeated exposure (Category 2)	H373
Hazardous to the aquatic environment (Acute 1)	H400
Hazardous to the aquatic environment (Chronic 1)	H410

For full text of H statements see section 16

The most important adverse effects

The most important adverse physiochemical effects: None.

The most important adverse human health effects: May cause skin allergies.

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Label elements

Hazard pictograms:



Signal Word: Danger

Hazard Statements: H317 May cause an allergic skin reaction. H351 Suspected of causing cancer. H360D May damaging the unborn child. H373 May cause damage to thyroid and nervous system. H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements: P201 Obtain special instruction before use. P261 Avoid breathing dust. P264 Wash thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P304+ P311 If inhaled call a poison centre.

Special labelling of certain mixtures: None

Other hazards: None

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture

Ingredients: Classification is based on the following ingredients which may be present.

Substance name (IUPAC/EC)	CAS –No.	Concentration % By weight	Classification
	EC-No.		EC1272/2008
Mancozeb	8018-01-7	60-70%	Skin sensitisation (Category 1) H317. Carcinogenicity (Category 2) H351. Reproductive toxicity (Category 1B) H360. STOT RE 2 H373. Aquatic acute 1 H400 M=10. Aquatic chronic 1 H410 M=10
	616-995-5		
Metalaxyl	57837-19-1	1-10%	Acute toxicity oral (Category 4) H302. Skin sensitisation (Category 1) H317. Aquatic chronic 3 H412.
	260-979-7		

For full text of H statements see section 16

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

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SECTION 4. FIRST AID MEASURES

Description of first aid measures:

In case of inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

In case of skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

In case of eye contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

In case of ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention.

Most important symptoms and effects, both acute and delayed:

Inhalation: None known.

Ingestions: May be harmful if swallowed.

Skin contact: May cause skin allergies.

Eye contact: None known.

Indication of any immediate medical attention and special treatment needed:

Treat symptomatically.

SECTION 5. FIRE -FIGHTING MEASURE

Extinguisher media:

Suitable extinguisher media: Use carbon dioxide, dry powder or alcohol- resistant foam to extinguish fire. Water spray can be used for cooling of unaffected stock but avoid water coming in contact with the product. Apply water as fine mist or fog.

Unsuitable extinguishing media: Do not use high volume water jet, due to contamination risk.

Special hazards arising from the mixture:

Spontaneous combustion may occur at high temperatures or when exposed to water. Exposure to excessive heat or ignition sources presents a definite ignition hazard. Keep containers tightly closed when not in use. Fire can occur in closely packed, unventilated piles of bags. Exposure to moisture promotes decomposition which can cause spontaneous combustion. Check containers for warmth and remove warm containers to open areas for disposal. Mancozeb is combustible. Dusts at sufficient concentration can form explosive mixture with air. Mancozeb is liable to spontaneous combustion at high temperatures or when exposed to water. Do not expose this material to flame or sparks. Minimize dusting as Mancozeb dust can form explosive clouds. This product has minimum ignition, hazardous combustion products, sensitivity to explosion by mechanical impact, sensitivity to explosion by static discharge energy between 300 and 1000 millijoules, mechanical sparks and other ignition sources where dust clouds of this material could form. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

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Advice for fire-fighters:

Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Be sure to use an approved/certified respirator or equivalent equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water.

SECTION 6. ACCIDENTAL RELEASE

Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel: Eliminate any possible source of exposure. Avoid contact and inhalation of product. Use adequate protective clothes, gloves and use an approved/certified respirator or equivalent.

For emergency responders: Isolate the spill area and limit the access to essential personnel, eliminate any possible source of ignition. Ventilate the confined space before entry. Avoid eye and skin contact. Use adequate protective clothes, gloves and use an approved/certified respirator or equivalent.

Environmental precautions:

Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapours, if any. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

Methods for containment and cleaning up:

For small spills Contain spilled material if possible. Collect in suitable and properly labelled containers.

For large spills Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g., sand, earth, vermiculite or diatomaceous earth and place in well labelled container for disposal according to local regulations.

Reference to other sections:

See section 7 for information on safe handling.

See section 8 for information on personal protection equipment.

See section 13 for information on disposal.

Additional information:

None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:

Store the material in a well-ventilated, secure area out of the reach of children and domestic animals. Ideally store the product below 30°C, never expose the product to temperature excess of 50°C. Do not allow the product become wet overheated as decomposition may result.

Decomposition produces a foul odour due to formation of toxic, flammable gases. Remove wet/damp or hot containers immediately to an open area for disposal. This product is combustible, do not allow it to ignite. Do not store food, beverages, or tobacco products in the storage area. Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

Protective measures: Observe directions on label and instructions for use.

Advice on general occupational hygiene: Do not eat drink or smoke when handling this product.

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Conditions for safe storage, including incompatibilities:

Store product in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use.

Specific end uses:

Use as directed. Use original container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Occupational exposure limits (OEL): No information available.

Biological exposure indices (BEI): No information available.

Additional exposure limits under the conditions of use No information available.

Exposure control: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. A Risk Assessment should be conducted before handling is to commence to determine specific exposure control.

Appropriate engineering controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective OEL's. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Use safety glasses. If there is a potential for exposure to particles/mist which could cause eye discomfort, wear chemical goggles.

Hand protection: Use chemical resistant gloves. Examples of preferred glove barrier materials include Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, Polyvinyl alcohol, Polyvinyl chloride.

Body protection: Wear appropriate clothing for task or operation. Keep working clothes separately.

Respiratory protection: Respiratory protection is required use an approved air-purifying respirator.

Environmental exposure controls: Prevent product from entry into sewers and water courses.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (form): Powder.

Colour: Yellow to green.

Odour: No information available.

Odour threshold: No information available.

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pH (at concentration): 6.02 (concentration unknown).

Melting point/range (°C): No information available.

Boiling point/range (°C): No information available.

Flash point (°C): Not applicable.

Evaporation rate: No information available.

Flammability (solid, gas): Non-flammable.

Ignition temperature (°C): No information available.

Upper/lower flammability/explosive limits: No information available.

Vapour pressure (20°C): No information available.

Vapour density: No information available.

Relative density (25°C): No information available.

Water solubility: Disperses in water.

n-Octanol/Water partition coefficient: No information available.

Auto-ignition temperature: 190°C.

Decomposition temperature: No information available.

Viscosity, dynamic (mPa s): No information available.

Physical hazards:

Explosive properties: Spontaneous combustion may occur at high temperatures or when exposed to water.

Other information:

Fat solubility (solvent-oil to be specified): No information available.

Bulk density: 0.461 g/cm³.

Dissociation constant in water (p Ka): No information available.

Oxidation-reduction potential: No information available.

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SECTION 10. STABILITY AND REACTIVITY

Reactivity:

Stable under normal conditions, but spontaneous combustion at high temperatures or when exposed to water.

Chemical stability:

Stable under normal storage conditions for 2 years.

Possibility of hazardous reactions:

Hazardous polymerization will not occur.

Conditions to avoid:

Protect from moisture, heat, open flames or other sources of ignition, storage conditions without ventilation or at temperature above 48°C. Fire can occur in closely packed, non-ventilated piles of bags, exposure to moisture promotes decomposition which can cause spontaneous combustion.

Incompatible materials:

Oxidizing agents, acids, polar solvents such as water.

Hazardous decomposition products:

Carbon disulphide, hydrogen sulphide.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicokinetics, metabolism and distribution:

Non-human toxicological data: No Information available.

Metabolism: Metalaxyl metabolism proceeds via hydrolysis of the ester bond, oxidation of the 2-(6)-methyl group and of the phenyl ring and N-dealkylation. There was no evidence for accumulation or retention of metalaxyl or its metabolites.

Excretion: In mammals, following oral administration, metalaxyl is rapidly absorbed and also rapidly and almost completely eliminated with urine and faeces.

Information on toxicological effects:

Acute toxicity:

MANCOLAX 700WP

Acute toxicity oral LD₅₀ for rat >5000 mg/kg (calculated).

Mancozeb

Acute toxicity oral LD₅₀ for rat >5000 mg/kg.

Dermal LD₅₀ for rat > 10 000 mg/kg for rabbits >5000 mg/kg.

Inhalation LC₅₀ (4 h) for rat >5.14 mg/ℓ.

Metalaxyl

Acute toxicity oral LD₅₀ for rat > 633 mg/kg for mice 788 mg/kg and for rabbits 697 mg/kg.

Dermal LD₅₀ for rat >3100 mg/kg.

Inhalation LC₅₀ (4 h) for rat > 3600 mg/m³

Chronic toxicity: No information available.

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Skin corrosion/irritation:

Mancozeb

Rabbit- Not irritant to skin.

Metalaxyl

Rabbit- Not irritant to skin.

Serious eye damage/irritation:

Mancozeb

Rabbit- Moderate eye irritating.

Metalaxyl

Rabbit-Slight irritant.

Respiratory or skin sensitization:

Mancozeb

No dermal sensitisation in Buehler test; may cause dermal sensitisation in guinea pig maximisation test.

Germ cell mutagenicity:

Metalaxyl

Not mutagenic.

Carcinogenicity:

Metalaxyl

Not carcinogenic.

Reproductive toxicity:

Mancozeb

Below parentally toxic levels, mancozeb was observed to have no effect on reproduction, on neonatal survival, or on growth or development.

At very high, maternally toxic levels, mancozeb has caused birth defects in test animals; ethylenethiourea, a trace contaminant and breakdown product of mancozeb, has caused thyroid effects, tumours and birth defects in laboratory animals.

Metalaxyl

Not teratogenic.

STOT-single exposure: No information available.

STOT-repeated exposure: No information available.

Aspiration hazard: No information available.

SECTION 12. ECOLOGICAL INFORMATION

Mancozeb

Toxicity:

Birds: Acute oral LD₅₀ (10 d) for Mallard ducks >5500 mg/kg, for Japanese quail 5500 mg/kg, for English sparrow (*Passer domesticus*) >1290 mg/kg, European starlings (*Sturnus vulgaris*) >2400 mg/kg.

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Acute dietary LC₅₀ (8 d) for Bobwhite quail and Mallard ducks >5200 mg/kg diet.

Chronic reproduction NOEL for mallard ducks 125 and Bobwhite quail 300 mg/kg diet.

Fish: LC₅₀ (96 h, flow-through) for Rainbow trout 1.0 mg/ℓ and Bluegill sunfish >3.6 mg/ℓ.

NOEC (34 d, early life-stage) for Fathead minnows 0.022 mg/ℓ; extended growth NOEC (14 d) for Rainbow trout 0.66 mg/ℓ.

Daphnia: EC₅₀ (48 h, flow-through) 3.8 mg/ℓ.

Other aquatic spp. EC₅₀ (24 h) for rotifers (*Brachionus calyciflorus*) 0.11 mg/ℓ.

LC₅₀ (48 h) for snails (*Lymnaea stagnalis*) >113 mg/ℓ, amphipods (*Gammarus* sp.) 3.0 mg/ℓ, Isopods (*Asellus* sp.) 4.4 mg/ℓ.

Outdoor mesocosm (11 w, macroinvertebrates and phytoplankton communities), after 8 applications, EAC 0.032 mg/ℓ.

Bees: LD₅₀ oral >209 µg/bee.

LD₅₀ contact >400 µg/bee.

Worms: LC₅₀ (14 d) for *Eisenia foetida* >1000 mg/kg soil; (56 d) reproduction NOEC for *Eisenia foetida* 20 mg/kg soil.

Other beneficial spp. Mancozeb is of low toxicity to the majority of non-target and beneficial arthropods; LR₅₀ (lab.) for *Aphidius rhopalosiphii*, *Chrysoperla carnea* and *Poecilus cupreus* >2400 g/ha, for *Typhlodromus pyri* 26.67 g/ha.

In extended lab. tests, LR₅₀ for *Aphidius rhopalosiphii* and *Chrysoperla carnea* >7690 g/ha, for *Typhlodromus pyri* 104.4 g/ha, for *Orius laevigatus* >3200 g/ha, for *Pardosa* sp. >3200 g/ha and LC₅₀ for *Hypoaspis aculeifer* >4.3 mg/kg soil.

Toxicity to certain predatory Phytoseiidae (mites) observed in laboratory tests has not been observed in the field to the same level or extent. Field studies in vines have shown acceptable levels of effect compatible with IPM on a range of predatory phytoseiid species when used according to good agricultural practice. Where effects are noted, mite populations have been shown to recover rapidly.

Metalaxyl

Birds: Acute oral LD₅₀ (7 d) for Japanese quail 923mg/kg Mallard ducks (8 d) 1466 mg/kg, for Japanese quail, Bobwhite quail and Mallard ducks >10 000 mg/kg.

Fish: LC₅₀ (96 h) for Rainbow trout, Carp and Bluegill sunfish >100 mg/ℓ.

Daphnia: LC₅₀ (48 h) >28 mg/ℓ.

Algae: IC₅₀ (5 d) for *Scenedesmus subspicatus* 33 mg/ℓ.

Other aquatic spp. EC₅₀ (96 h) for Mysid shrimp (*Mysidopsis bahia*) 25 mg/ℓ, Eastern oysters (*Crassostrea virginica*) 4.6 mg/ℓ.

Bees: Not toxic to bees. LD₅₀ oral 269.3 µg/bee.

LD₅₀ contact >200 µg/bee.

Worms: LC₅₀ (14 d) for *Eisenia foetida* >1000 mg/kg soil.

Other beneficial spp. Harmless to *Poecilus cupreus* and *Coccinella septempunctata* (IOBC).

Persistence and degradability:

Mancozeb is rapidly degraded in the environment by hydrolysis, oxidation, photolysis and metabolism.

Bioaccumulative potential:

Mancozeb does not bioaccumulate.

Mobility in soil:

Mancozeb breaks down rapidly in soil, sediment and water; terminal metabolites are natural products and with mineralisation to carbon dioxide. Soil DT₅₀ <1 d (ave., 20 °C). K_{oc} 998 ml/g (ave., 4 soils).

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Metalaxyl in soil, DT50 29 d (realistic range 10–40 d), Koc 70 ml/g (realistic range 30–300 ml/g). DT50 in water 22–48 d. Photolytically stable in water and on soil surfaces.

Results of PBT& vPvB assessment:

No information available.

Other adverse effects:

Very toxic to aquatic life.

Avoid release to environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

Consider suitable waste recycling, re-use or recovery options. Dispose of in accordance with municipal, provincial and national regulations. Waste Classification and Management Regulations (GN 634 of 2013). Dispose and or manage in accordance with the requirements contained in R634 Waste Classification & Management Regulations, R635 National Norms & Standards for the Assessment of Waste for Landfill Disposal and R636 National Norms & Standards for Disposal of Waste to Landfill.

Product/ packaging disposal:

Treat as hazardous waste and dispose of in accordance with municipal, provincial and national regulations.

SECTION 14. TRANSPORT INFORMATION

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number	3077	3077	3077
UN Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mancozeb)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mancozeb)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mancozeb)
Transport hazard class:	9	9	9
Packaging group:	III	III	III
Marine pollutant:	Yes	Yes	Yes
Special precautions for user:	No information	No information	No information
Transport in bulk according to MARPOL 73/78 Annex II and the IBC code	No information	No information	No information

Inland waterways: No information.

Emergency response information: No information.

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation for the mixture:

Relevant information regarding authorization: Occupational Health and Safety Act 1993. Regulation for Hazardous Chemical Agents, 2021. UN Recommendations on the Transport of Dangerous Goods Model Regulations Rev. 21 (2019), Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Rev 8, 2019.

ACGIH: American Conference of Governmental Industrial Hygienists (ACGIH).

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Relevant information regarding restrictions: None.

EU regulations: Regulation EC 1272/2008 [EU-GHS/CLP]

Other National regulations: National Road Traffic Act, 1996 (ACT NO. 93 of 1996).

SANS 10228:2012- The identification and classification of dangerous goods for transport by road and rail modes.

National Environmental Management: Waste Act 59 of 2008.

Chemical Safety Assessment carried out? No.

SECTION 16. OTHER INFORMATION

Indication of changes:

All sections.

Relevant classification and H statements (number and full text):

Aquatic acute 1- Hazardous to the aquatic environment (Acute 1).

Aquatic chronic 1- Hazardous to the aquatic environment (Chronic 1)

Aquatic chronic 3- Hazardous to the aquatic environment (Chronic 3)

STOT RE 2- Specific Target Organ Toxicity repeated exposure (Category 2)

H302 Harmful if swallowed. H317 May cause an allergic skin reaction. H351 Suspected of causing cancer. H360D May damaging the unborn child. H373 May cause damage to thyroid and nervous system. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.

Training instructions:

Use as indicated on the label, special training may be required for application.

Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Notice to readers:

Employers should use this information only as a supplement to other information gathered by them and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees.

This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.