

# MATERIAL SAFETY DATA SHEET

Issue Date: 1 August 2011

Issued by: NUFARM MALAYSIA SDN BHD

Product Name:	<b>Mancozeb 80% WP</b>
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## 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND COMPANY:

<b>Product Name</b>	<b>Mancozeb 80% WP</b>
<b>Company Name</b>	NUFARM MALAYSIA SDN BHD (207731-P)
<b>Company Address</b>	L2.03 Wisma BU8, No. 11, Lebuhr Bandar Utama, Bandar Utama, 47800, Petaling Jaya, Selangor D.E., Malaysia.
<b>Tel/Fax Number</b>	Tel: (+60 3) 7629 7233 Fax: (+60 3) 7629 7229
<b>Email</b>	<a href="mailto:sales.my@my.nufarm.com">sales.my@my.nufarm.com</a>
<b>Emergency Contact</b>	National Poison Centre 1800 88 8099 (Normal Hour) (+60 12) 430 9499 (After Hour)
<b>Product Type</b>	Fungicide
<b>Product Use</b>	Broad-spectrum, non-systemic fungicide with protective action. Control of many fungal diseases in a wide range of crops including tomato, chili, cabbage, choy sam, long bean, cucumber, watermelon, spinach, chrysanthemum, rose, mango, tobacco and salad.

## 2. HAZARDS IDENTIFICATION:

### Emergency Overview:

**Appearance and Odour**  
**Warning Statements**

Yellowish green coloured powder.

Keep out of reach of children. CAUTION. May cause eye irritation. May irritate respiratory tract. Avoid breathing dust or spray mist. Avoid contact with eyes, skin and clothing.

### Potential Health Effects:

**Ingestion**

This material may cause vomiting, nausea, diarrhoea and abdominal cramps.

**Eye Contact**

May irritate eyes.

**Skin Contact**

May cause skin sensitization by prolonged skin contact.

**Inhalation**

Mist or dust concentration may be irritating to respiratory tract.

**Potential Environment Effects:**

Material is toxic to aquatic organisms and birds. Avoid contaminating waterways.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS:

<b>Type of Formulation</b>	Wettable Powder, (WP)		
<b>Ingredients</b>	<b>Name</b>	<b>CAS</b>	<b>Proportion</b>
	Mancozeb	8018-01-7	80.0%, w/w
	Inert Ingredients		20.0%, w/w

## 4. FIRST AID MEASURES:

<b>Ingestion</b>	Contact the doctor or National Poison Centre immediately. Have the person sip water if able to swallow. Do NOT induce vomiting unless told to do so by doctor or National Poison Centre. Never give anything by mouth to unconscious person.
<b>Eye</b>	Hold eyelids open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call National Poison Centre or doctor for treatment advice.
<b>Skin</b>	Remove contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Wash affected area with soap and water. Call National Poison Centre or doctor for treatment advice.
<b>Inhalation</b>	Remove affected person to fresh air until recovered. If the person is not breathing, call 999 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call National Poison Centre or doctor for further treatment advice.
<b>Advise to Doctor</b>	Treat symptomatically.

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## 5. FIRE FIGHTING MEASURES:

<b>Extinguishing Media</b>	Water spray, foam, sand, carbon dioxide or dry chemical. Use water spray to cool container exposed to fire.
<b>Special Fire Fighting Procedures</b>	Fire-fighters should wear NIOSH/MHSA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.
<b>Unusual Fire and Explosion Hazards</b>	On burning, may emit toxic fumes such as hydrogen sulfide, sulfur oxides and carbon oxides.
<b>Other Information</b>	STOP FIRE WATER FROM ENTERING DRAINS OR WATER BODIES.

## 6. ACCIDENTAL RELEASE MEASURES:

<b>Spills and Disposal</b>	Large spills may be neutralized with dilute solutions of soda ash or lime. After removal, flush contaminated area thoroughly with water. Do not allow any material to run off in soil, drainage systems or bodies of water. If spill does enter waterways, notify the local authorities. Collect in an appropriate sealable container for disposal in an approved landfill.
<b>Environmental Precaution</b>	Prevent material from entering public sewer systems or any waterways. Do not flush to drains.

## 7. HANDLING AND STORAGE:

<b>Handling</b>	Keep out of reach of children. Avoid contact with eyes, skin and clothing. Users should wash hands before eating, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
<b>Storage</b>	Store in the closed, original container in a cool, well ventilated area out of direct sunlight. Store in a safe place away from foodstuffs, seeds or fertilizers. Store out of the reach of children. Do not contaminate water, food, or feed by storage or disposal.
<b>Other Information</b>	Always read the label and any attached leaflet before use.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION:

<b><u>Exposure Limit</u></b>	An exposure standard has been set for mancozeb at 1 mg/m <sup>3</sup> ( TWA - NIOSH)
<b><u>Engineering Controls</u></b>	Local exhaust ventilation may be necessary to control any air contaminants to within their TLV's during the use of this product.
<b><u>Personal Protective Equipment</u></b>	
<b>Eye/ Face Protection</b>	To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.
<b>Skin Protection</b>	To avoid contact with skin, wear long pants, long-sleeved shirt, socks, shoes and chemical-resistant gloves made of any waterproof material. An emergency shower or water supply should be readily accessible to the work area.
<b>Respiratory Protection</b>	Not normally required. If vapours or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.
<b>General Hygiene Considerations</b>	Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES:

Physical State	Solid
Appearance	Yellowish green colour powder
Tap Density	0.49 g/ml
Melting Point/Range	Not applicable (decomposes)
Solubility in Water	0.00631 ± 0.0008 g/L (20°C)
Solubility in Solvent	Insoluble in acetone, methanol ethyl acetate, 1,2-dichloroethane, n-heptane and p-xylene.
Vapour Pressure	Negligible
Flammability	Not flammable

## 10. STABILITY AND REACTIVITY:

Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Oxidizing agents and acids.
Incompatible Materials	Finally divide metals, alkaline metals and mineral acids.
Hazardous	Not available
Decomposition Products	
Hazardous	Hazardous polymerization will not occur.
Polymerization	

## 11. TOXICOLOGICAL INFORMATION:

Toxicology Information	No harmful effects are expected if the precautions on the label and this MSDS are followed.	
Acute Toxicity - Oral	LD <sub>50</sub> (rat)	: > 5000 mg/kg
Acute Toxicity - Dermal	LD <sub>50</sub> (rat)	: > 2000 mg/kg
Acute Toxicity - Inhalation	LC <sub>50</sub> (rat)	: > 2.843 mg/L of air
Eye Irritation	Non-irritant (rabbit)	
Skin Irritation	Non-irritant (rabbit)	
Sensitization	Non-sensitizer(guinea-pig)	

## 12. ECOLOGICAL INFORMATION:

Acute Toxicity - Fish	Data on Mancozeb:	
	LC <sub>50</sub> (96h, flow-through) Bluegill Sunfish	> 3.6 mg/l
	LC <sub>50</sub> (96h, flow-through) Rainbow Trout	1.0 mg/l
Acute Toxicity - Daphnia	EC <sub>50</sub> (96h, flow-through) Daphnia	3.8 mg/l
Acute Toxicity - Algae	EC <sub>50</sub> (120h, cell density) ( <i>Selenastrum capricornutum</i> )	0.044 mg/L
Acute Toxicity - Other Organisms	LD <sub>50</sub> (10 d) Mallard Ducks	> 5500 mg/kg
	LD <sub>50</sub> (10 d) Japanese quail	5500 mg/kg
	LD <sub>50</sub> Bee	> 400 µg/bee (contact)
		> 209 µg/bee (oral)
	LC <sub>50</sub> (14 d) Worms ( <i>Eisenia foetida</i> )	> 1000 mg/kg soil
Environmental Fate	Mancozeb breaks down rapidly in soil, sediment and water; terminal metabolites are natural products and with mineralisation to carbon dioxide. It does not bioaccumulate.	
Other Precautions	DO NOT contaminate dams, rivers or streams with pesticide or used containers.	

## 13. DISPOSAL CONSIDERATIONS:

Product Disposal	Ideally the product should be used for its intended purpose. If there's a need to dispose of the product, approach local authorities who hold periodic collection of unwanted chemical. On site disposal of the product is not acceptable.
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## Container Disposal

Shake the last amount of product from the bag into application equipment. Dispose of in accordance with local regulations. If no landfill is available, bury the container 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:

Transport Information	It is a good practice to separate this product from food, food related materials, animal feedstuffs, seed or fertilizers during transport.
Storage and Transport UN Number (Sea Transport)	Follow the precautions indicated in this MSDS, Section 7: HANDLING AND STORAGE. UN 3077
IMO Class/Packing Group	Class 9; Packing Group III
IMO Marine Pollutant	Marine Pollutant
IMO Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contain mancozeb)

## 15. REGULATORY INFORMATION:

Risk Phrase:	N/A
Safety Phrase:	N/A
Poisons Schedule	No data
Hazard Category	Class IV (Malaysia Regulation)
Packaging and Labeling	KEEP AWAY FROM FOODSTUFF AND CHILDREN READ THE LABEL BEFORE USE.

## 16. OTHER INFORMATION:

Contact Person / Point	Nufarm Malaysia Sdn Bhd Mr. PMG Pitchai Phone: (+60 3) 31761888 Ext 217 Position: Safety & Health Officer DOSH Reg No: JKKP IS 127/438/2/2294 Email: <a href="mailto:pmg.pitchai@my.nufarm.com">pmg.pitchai@my.nufarm.com</a>
Date of preparation or last version of MSDS	Revised: 1 August 2011 Supersedes: December 2010

## END OF MSDS ...

**Note:** While the information given herein is, to the best of our knowledge, correct and is given in good faith, we make no warranty, with respect hereto and disclaim all liability from reliance thereon. It is expected that individuals receiving the information will exercise their independent judgment in determining its appropriateness for a particular purpose.