


## Safety Data Sheet

### MANCOZEB 800 WP - Reg. No: L 9169 (Act No 36 of 1947)

<b>1) PRODUCT AND COMPANY IDENTIFICATION</b>	
<b>Product name:</b>	MANCOZEB 800 WP
<b>Other means of identification:</b>	Not applicable
<b>Chemical Name:</b>	manganese ethylenebis(dithiocarbamate) (polymeric) complex with zinc salt
<b>Recommended use:</b>	Fungicide
<b>Restrictions on use:</b>	Agriculture
<b>UN No:</b>	3077
<b>Distributed by:</b>	MERIDIAN AGRITECH P O BOX 436 MODDERFONTEIN TEL 011 8228509 FAX 0866901386 MOBILE: 0834006056 www.agritech.co.za
<b>Emergency Number:</b>	POISON CENTRE (UNITAS HOSPITAL) 012 664 1100 TYGERBERG:021 931 6129 RED CROSS: 021 689 5227 RAPID SPILL RESPONSE 0800 775 3305 GRIFFON POISON CENTRE: 082 446 8946
<b>2) HAZARDS IDENTIFICATION:</b>	
<b>Classification of the substance/mixture:</b>	GHS Category (Oral & Dermal): 5 Skin Sensitization Category 1 (H317) Aquatic Acute Category 1 (H400) Reproductive Toxicity Category 2 (H361d)
<b>Label Elements: Globally Harmonized System, EU (GHS):</b>	<p>Pictogram:</p>  <p>Signal Word: Warning</p> <p><b>Hazard Statements:</b>  <b>H317:</b> May cause an allergic skin reaction.  <b>H361d:</b> Suspected of damaging the unborn child.  <b>H400:</b> Very toxic to aquatic life.</p> <p><b>Precautionary Statements:</b>  <b>P201:</b> Obtain special instructions before use.  <b>P202:</b> Do not handle until all safety precautions have been read and understood.  <b>P280:</b> Wear protective gloves, protective clothing, eye protection.  <b>P302+P352:</b> If on skin: Wash with plenty of water.  <b>P333+P313:</b> If skin irritation or a rash occurs: Get medical advice/attention.  <b>P362+P364:</b> Take off contaminated clothing and wash it before reuse.  <b>P405:</b> Store locked up.  <b>P501:</b> Dispose of contents/container to an authorised waste collection point.</p> <p>Hazard Symbols:  N: Dangerous for the environment.  Xn: Harmful</p>



<p>According to Directive 67/548/EEC No. 1272/2008 [CLP]</p>	<p>Xi: Irritant</p> <p><b>R-phrases(s):</b>  <b>R22:</b> Harmful if swallowed.  <b>R36:</b> Irritating to eyes.  <b>R37:</b> Irritating to respiratory system.  <b>R42/43:</b> May cause sensitization by skin contact.  <b>R53:</b> May cause long term adverse effects in the aquatic environment.  <b>R63:</b> Possible risk of harm to the unborn child.</p> <p><b>S-phrases(s):</b>  <b>S1/2:</b> Keep locked up and out of reach of children.  <b>S8:</b> Keep container dry.  <b>S13:</b> Keep away from food, drink and animal feeding stuffs.  <b>S20/21:</b> When using, do not eat, drink or smoke.  <b>S24/25:</b> Avoid contact with the skin and eyes.  <b>S28:</b> After contact with skin, wash immediately with plenty of water.  <b>S35:</b> This material and its container must be disposed of in a safe way.  <b>S36/37/39:</b> Wear suitable protective clothing, gloves and eye/face protection.  <b>S56:</b> Dispose of this material and its container to hazardous or special waste collection point.  <b>S61:</b> Avoid release to the environment. Refer to special instructions/Safety data sheets.  <b>S62:</b> If swallowed, induce vomiting and seek medical advice immediately and show this container label.</p>			
<p><b>3) COMPOSITION / INFORMATION ON INGREDIENTS:</b></p>				
<p><b>3.1 Substances:</b> Not applicable</p>				
<p><b>3.2 Mixtures:</b></p>				
<p><b>Chemical name</b></p>	<p><b>Concentration</b></p>	<p><b>CAS No.</b></p>	<p><b>EC No.</b></p>	<p><b>Classification according to Regulation EC 1272/2008 (CLP)</b></p>
<p>Mancozeb</p>	<p>800 g/kg</p>	<p>8018-01-7</p>	<p>616-995-5</p>	<p>Skin Sens Cat 1 (H317)  Aquatic Acute Cat 1 (H400)  Repr. Cat 2 (H361d)</p>
<p><b>4) FIRST AID MEASURES:</b></p>				
<p><b>Description of First-Aid Measures:</b></p> <p><b>Inhalation:</b></p> <p><b>Skin contact:</b></p> <p><b>Eye contact:</b></p> <p><b>Ingestion:</b></p> <p><b>Most important symptoms and effects, both acute and delayed:</b></p> <p><b>Indication of any immediate medical attention and special treatment needed:</b></p>	<p>Remove patient to fresh air. Loosen clothing around neck. Lie down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Monitor patient for respiratory distress. Seek medical assistance if necessary.</p> <p>Immediately remove contaminated clothing and gently wipe off excess chemical. Wash thoroughly and gently with plenty of water and a non-abrasive soap. Wash contaminated clothing before re-use. Seek medical assistance if irritation persists.</p> <p>Flush eyes with plenty of gently flowing luke warm water or saline solution for at least 20 minutes holding eyelids open. Remove contact lenses. Seek medical assistance if necessary.</p> <p>Never give anything by mouth to an unconscious person. For advice, contact the National Poisons Centre. <b>Seek medical assistance immediately.</b></p> <p>In cases where extremely high doses have been absorbed, reactions occurred. Otherwise reactions are not likely to occur. Symptoms of exposure to the product include: itching, scratchy throat, sneezing and coughing. Nausea, vomiting, diarrhoea, headache, ataxia, confusion and fatigue in man, have occurred in cases of accidental swallowing.</p> <p>A person who becomes sensitised following skin contact may require specialised medical management with anti-inflammatory agents or cortisone-containing emulsions.</p> <p>No specific antidotes are available against dithiocarbamate poisoning. If a large amount of mancozeb has been ingested in the last few hours, and if copious vomiting has not already occurred, the</p>			

	<p>stomach must be emptied and steps must be taken to limit gastrointestinal absorption. If the patient is fully alert and nervous system depression is not anticipated, then oral administration of Syrup of Ipecac is probably the best option to empty the stomach.</p> <p><b>Dosage of Syrup of Ipecac:</b>  <b>Adults and children over 12 years:</b> 30 ml followed by 2-3 glasses of water.  <b>Children under 12 years:</b> 15 ml followed by 1-2 glasses of water. Children less than one year should receive only 10-10 ml and should be under direct medical supervision if at all possible. When vomiting stops after induced emesis, give the patient activated charcoal and cathartic orally by adding sorbitol to the charcoal slurry.</p> <p><b>Dosage of Activated Charcoal:</b>  <b>Adults and children over 12 years:</b> 50-100 mg in 300-800 ml water.  <b>Children under 12 years:</b> 15-30 mg in 100-300 ml water.</p> <p><b>Dosage of Sorbitol:</b>  <b>Adults given separately, it should be diluted. Children over 12 years:</b> 1-2 mg/kg body weight to a maximum of 150 mg per dose.  <b>Children under 12 years:</b> 1.0-1.5 mg/kg body weight to a maximum of 50 mg per dose.</p> <p>If sorbitol is given separately, it should be diluted with an equal volume of water prior to administration. If there are any indications of central nervous system depression, or if the patient fails to vomit within 30 minutes of Syrup of Ipecac administration, measures should be taken to protect the respiratory tract from aspiration of gastric contents, then the stomach should be emptied by gastric intubations, aspiration and lavage with a slurry of activated charcoal. Unless diarrhoea has already commenced, include a cathartic in order to hasten elimination.  <b>CAUTION:</b> Do not instil fluid so quickly that overloading of the stomach leads to vomiting or regurgitation, followed by aspiration. Serious electrolyte disturbances may follow catharsis, especially in young children.  If contact with the toxicant has been minimal, administration of charcoal without the cathartic, followed by careful observation of the patient, probably represent optimal management.</p>
<b>5) FIRE-FIGHTING MEASURES:</b>	
<p><b>Extinguishing Media:</b></p> <p><b>Unsuitable Extinguishing Media:</b></p> <p><b>Specific Hazards arising from the substance/mixture:</b></p> <p><b>Fire Fighting:</b></p> <p><b>Protective clothing:</b></p>	<p>Small fires: Carbon dioxide, dry powder or alcohol-resistant foam</p> <p>Large fires: Carbon dioxide, dry powder, Alcohol-resistant foam or water spray.</p> <p>Water can be used to cool unaffected stock. DO NOT allow water to come into contact with the product.</p> <p>High volume water jet due to contamination risk.</p> <p>This product poses a slight fire hazard when exposed to heat or flame. Dust-air mixtures may ignite or explode. A fire may produce irritating or poisoning vapours (toxic oxides of carbon, nitrogen and sulphur) of combustion.</p> <p>Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire. Fight fire from maximum distance. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind. Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal.</p> <p>Full chemical protective clothing and self-contained breathing apparatus</p>
<b>6) ACCIDENTAL RELEASE MEASURES:</b>	
<b>Personal precautions, protective equipment and emergency procedures:</b>	Avoid contact with skin and eyes. Do not breathe in fumes. For personal protection see Section 8.
<b>Environmental precautions:</b>	Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. Do not allow to enter drains

	or watercourses. If contamination of water courses is unavoidable, report to the Police and the Department of Water/Environmental Affairs immediately.
<b>Methods and material for containment and cleaning up:</b>	<b>Occupational spill:</b> For small dry spills, sweep up with damp earth or sand or another suitable absorbent, such as saw dust. Take care not to raise a dust cloud. Put the material into a clean, dry container and cover for subsequent disposal. All contaminated cleaning materials must be placed in closable receptacles. In situations where the product comes into contact with water, contain contaminated water for disposal. Do not flush spilled material into drains. Keep spectators away and upwind. <b>Large spills:</b> Do NOT wash away into the sewer. Sweep the spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect the remainder and remove it to safe place (extra personal protection: P2 filter respirator for harmful particles). Avoid skin contamination or inhalation of vapor.
<b>7) HANDLING &amp; STORAGE:</b>	
<b>Precautions for Safe Handling:</b>	Avoid contact with eyes, skin, mouth and inhalation of dust and vapour. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Remove clothing immediately if the products gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high-water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.
<b>Conditions for Safe Storage, including any incompatibilities:</b>	Keep out of reach of children, unauthorized persons, and animals. Store in its original labelled container in a shaded, well ventilated area. Keep away from heat, sparks and other sources of ignition – NO SMOKING. Store in dry area and protect from temperatures below 0 °C and above 50 °C. avoid breaking the containers, spillages or leaks. Do not allow the product to become wet or overheated in storage, decomposition, impaired activity or fire may result. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with. Store away from incompatible substances and sources of ignition/fire.
<b>8) EXPOSURE CONTROL / PERSONAL PROTECTION:</b>	
<b>Appropriate Engineering Controls:</b>	It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.
<b>Control Parameters: Occupational exposure limits:</b>	
<b>PERSONAL PROTECTIVE EQUIPMENT:</b>	
<b>Clothing:</b>	
<b>Respiratory protection:</b>	Consult supplier to confirm that the equipment is suitable.
<b>Gloves:</b>	The employee must wear appropriate protective (impervious) clothing boots, hat and equipment to prevent repeated or prolonged skin contact with this substance. DO NOT wear leather clothing.
<b>Eye protection:</b>	Wear an approved full-face respirator for protection against dusts and mists of the pesticide. Consult supplier to confirm that the equipment is suitable.
<b>Emergency eye wash:</b>	Employee must wear appropriate chemical-resistant gloves to prevent contact with this substance.  Use of safety goggles is recommended.  Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

Ingredient	CAS#	Limit	Basis
Mancozeb	8018-01-7	2 mg/m <sup>3</sup>	AEL (8-hour TWA, total dust)
Mancozeb	8018-01-7	1.5 mg/m <sup>3</sup>	AEL (12-hour TWA, total dust)

<b>9) PHYSICAL &amp; CHEMICAL PROPERTIES:</b>	
<b>Appearance:</b>	Pale yellow powder
<b>Odour:</b>	Musty
<b>Solubility:</b>	Will disperse in water
<b>pH:</b>	6.5
<b>Odour threshold:</b>	Not available
<b>Melting point / Freezing point</b>	Not available
<b>Initial boiling point and boiling range</b>	Not available
<b>Flash point:</b>	Does not flash
<b>Evaporation rate:</b>	Not available
<b>Flammability (solid, gas)</b>	Not available
<b>Upper/ lower flammability or explosive limits:</b>	Not available
<b>Vapour pressure:</b>	Not available
<b>Vapour density:</b>	Not available
<b>Relative density:</b>	Not applicable
<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Auto-ignition temperature:</b>	Not available
<b>Decomposition Temperature:</b>	Not available
<b>Viscosity:</b>	Not applicable
<b>10) STABILITY &amp; REACTIVITY:</b>	
<b>Reactivity:</b>	The formation of toxic oxides of carbon, nitrogen and sulfur may occur upon heating.
<b>Chemical Stability:</b>	Stable for two years under normal, dry storage conditions in the original unopened container. This product is slowly decomposed by heat and moisture.
<b>Possibility of hazardous reactions:</b>	Product will not undergo polymerisation.
<b>Conditions to avoid:</b>	Keep away from moisture, heat or flame. Avoid temperatures above 49°C.
<b>Incompatible materials:</b>	Incompatible with oxidizing materials and acids.
<b>Hazardous decomposition product(s):</b>	Hydrogen sulphide, carbon disulphide, carbon oxides, sulphur oxides and nitrogen oxides form on heating. During processing, dust may form explosive mixture in air. Decomposition by contact with water may generate vapours, which can be ignited by heat or open flame.
<b>11) TOXICOLOGICAL INFORMATION: BASED ON TECHNICAL MATERIAL.</b>	
<b>Acute Toxicity:</b>	
<b>Oral:</b>	LD <sub>50</sub> for rats >2000 mg/kg, rat.
<b>Dermal:</b>	LD <sub>50</sub> for rats >2 000 mg/kg, rabbits >5000 mg/kg.
<b>Inhalation:</b>	LC <sub>50</sub> (4 h) for rats >4.97 mg/L.
<b>Skin Corrosion/Irritation:</b>	Not irritant, rabbit.
<b>Serious Eye Damage/Irritation:</b>	None to slight irritation, effects are reversible
<b>Respiratory or Skin Sensitization:</b>	May cause sensitization on laboratory animals, guinea pig.
<b>Germ Cell Mutagenicity:</b>	No data available
<b>Carcinogenicity:</b>	No data available
<b>Reproductive Toxicity:</b>	Suspected of damaging the unborn child.
<b>STOT-SE:</b>	No data available
<b>STOT-RE:</b>	No data available
<b>Aspiration Hazard:</b>	No data available
<b>12) ECOLOGICAL INFORMATION: BASED ON TECHNICAL MATERIAL.</b>	
<b>Ecotoxicity:</b>	
<b>Birds:</b>	Acute oral LD <sub>50</sub> : Japanese quail > 2000 mg/Kg body weight
<b>Fish:</b>	Common Carp ( <i>Cyprinus carpio</i> ): >3.3 mg/kg
<b>Daphnia:</b>	EC <sub>50</sub> (48 h, flow-through) >3.7 mg/L.
<b>Algae:</b>	No data available.
<b>Worms:</b>	LC <sub>50</sub> (14 d) for <i>Eisenia foetida</i> >243 mg/kg soil
<b>Bees:</b>	LD <sub>50</sub> (oral) >209 µg/bee; (contact) >200 µg/bee.
<b>Persistence and Degradability:</b>	Mancozeb breaks down rapidly in soil, sediment and water; terminal metabolites are natural products and with mineralisation to carbon dioxide. Degradation in soil is mainly by micro-organisms.
<b>Bio-accumulative Potential:</b>	It does not bioaccumulate.
<b>Mobility in Soil:</b>	The product has low mobility and is not likely to leach.
<b>13) DISPOSAL CONSIDERATIONS:</b>	
<b>Waste Disposal:</b>	In accordance with local and national regulations. Any contaminated absorbents, used containers, surplus product, etc., should be burnt at > 1000°C in an incinerator, preferably designed for pesticide disposable, or buried in an approved landfill

<b>Container Disposal:</b>	Refer to the product label for instructions. should be incinerated as a facility that complies with local and national regulations.
<b>14) TRANSPORTATION INFORMATION:</b>	
<b>Road Transport ADR / IRD:</b>	UN NUMBER: 3077 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mancozeb 80%) Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9 Environmental Hazards: Not applicable Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.
<b>Maritime Transport IMDG / IMO:</b>	UN NUMBER: 3077 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mancozeb 80%) Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9 Environmental Hazards: Marine Pollutant Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.  
<b>Air Transport ICAO / IATA:</b>	UN NUMBER: 3077 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mancozeb 80%) Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9 Environmental Hazards: Not applicable Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.  
<b>Transport in Bulk (according to Annex II of MARPOL 73/78 and the IBC Code):</b>	Not applicable
<b>15) REGULATORY INFORMATION:</b>	
<b>Safety, health and environmental regulations/legislation specific for the substance/mixture:</b>	For the user of this plant-protective product applies: 'To avoid risks to man and the environment, comply with the instructions for use.' (Directive 1999/45/EC, Article 10, No. 1.2)
<b>Chemical Safety Assessment:</b>	Advice on product handling can be found in sections 7 and 8 of this safety data sheet.
<b>16) OTHER INFORMATION</b>	
<p>All information and instructions provided in this Safety Data Sheet (SDS) are based on the current state of scientific and technical knowledge at the date indicated on the present SDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear.</p> <p>It is the responsibility of persons in receipt of this SDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with this product. If the recipient subsequently produces formulation(s) containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this SDS to their own SDS.</p> <p>The information contained herein is provided in good faith but makes no representation as to its comprehensiveness or accuracy. A properly trained person using this product intends this document only as a guide to the appropriate handling of the material. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.</p> <p>MERIDIAN AGRITECH MAKES NO REPRESENTATION OR WARRANTIES, EITHER EXPRESSES OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT</p>	

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**Abbreviations and acronyms:**

1. CAS number: Chemical Abstracts Service number.
2. CLP: Classification, Labelling, Packaging.
3. LD<sub>50</sub>: Lethal Dose for 50% of the test population.
4. LC<sub>50</sub>: Lethal Concentration for 50% of the test population.
5. DT<sub>50</sub>: Half-life
6. EC<sub>50</sub>: Half maximal effective concentration.
7. GHS: Globally Harmonised System (of Classification and Labelling of Chemicals).
8. AEL: Acceptable Exposure Limit
9. TWA: Total weighted average
10. STOT: Specific Target Organ Toxicity.
11. RE: Repeated Exposure.
12. SE: Single Exposure.

**Literature References:**

- GHS: [www.ccohs.ca/oshanswers/chemicals/ghs.html](http://www.ccohs.ca/oshanswers/chemicals/ghs.html)
- ECHA: <https://echa.europa.eu/search-chemicals>