

# BENOMYL 500 WP

# SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** BENOMYL 500 WP  
**Other identifier:** Benomyl 500 WP  
**Recommended use:** Fungicide  
**Restrictions on use:** Agriculture

**Supplier:** Villa Crop Protection (Pty) Ltd.  
**Co. Reg. No.:** 1992/002474/07  
PO Box 10413  
Aston Manor, 1630, South Africa  
**Telephone:** (011) 396 2233  
**Fax:** (011) 396 4666  
**Website:** [www.villacrop.co.za](http://www.villacrop.co.za)

**Emergency telephone numbers:**  
**24 Hr Transport / Spill emergency no:**  
(Hazcall24) +27 86 044 4411  
(Client: Villa Crop Protection)  
Griffon Poison Information Centre +27 82 446 8946  
(Client: Villa Crop Protection)  
**Poisoning Emergency telephone numbers:**  
Griffon Poison Information Centre +27 82 446 8946  
Poisons Information Centre +27 861 555 777

## 2. HAZARDS IDENTIFICATION

| UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP] EU & SANS 10234:2008 |                   |              |
|---|-------------------|--------------|
| Hazard classes  | Hazard categories | H-statements |
| <b>Health</b>   |                   |              |
| Skin irritation   | Skin irrit. 2     | H315         |
| Skin Sensitization  | Skin Sens. 1      | H317         |
| Eye irritation  | Eye irrit 2/2A    | H319         |
| Inhalation  | Acute Tox. 4      | H332         |
| Specific Target Organ Toxicity Single Exposure                    | STOT SE 3         | H335         |
| Germ cell mutagenicity  | Muta. 1B          | H340         |
| Reproductive Toxicity   | Repr. 1B          | H360         |
| <b>Environment</b>  |                   |              |
| Aquatic acute   | Aquatic acute 1   | H400         |
| Aquatic chronic   | Aquatic chronic 1 | H410         |

**The most important adverse effects:**  
**Physiochemical effects:**  
None known.  
**Human health effects:**  
Causes skin irritation (Skin Irrit.2).

Causes serious eye irritation (Eye irrit. 2/2A).  
Harmful if inhaled (Acute Tox. 4).  
May cause genetic defects (Muta.1B).  
May damage fertility or the unborn child (Repr.1B).  
**Label elements:**



**Signal word:** Danger.  
**Hazard statements:**  
H315: Causes skin irritation.  
H317: May cause an allergic skin reaction.  
H319: Causes serious eye irritation.  
H332: Harmful if inhaled.  
H335: May cause respiratory irritation.  
H340: May cause genetic defects.  
H360: May damage fertility or the unborn child.  
H400: Very toxic to aquatic life.  
H410: Very toxic to aquatic life with long lasting effects.  
**Precautionary statements:**  
P203: Obtain, read, and follow all safety instructions before use.  
P261: Avoid breathing dust, fumes, mists, gas, vapours, or spray. (respiratory sensitization).  
P264: Wash hands and face thoroughly after handling.  
P264+P265: Wash hands thoroughly after handling. Do not touch eyes.  
P271: Use only outdoors or in a well-ventilated area.  
P272: Contaminated work clothing should not be allowed out of the workplace.  
P273: Avoid release into the environment.  
P280: Wear impervious rubber gloves and boots, protective clothing, and chemical safety goggles.  
P302+P352: IF ON SKIN: Wash with plenty of water and non-abrasive soap.  
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P317: Get medical help.  
P318: IF exposed or concerned, get medical advice.  
P319: Get medical help if you feel unwell.  
P332+P317: If skin irritation occurs: get medical help.  
P333+P317: If skin irritation or rash occurs: Get medical help.  
P337+P317: If eye irritation persists: Get medical help.  
P362+P364: Take off contaminated clothing and wash it before reuse.  
P391: Collect spillage.  
P403+P233: Store in a well-ventilated place. Keep

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container tightly closed.  
P405: Store locked up.  
P501: Dispose of contents/container in accordance with local regulations.

### Special labelling of certain mixtures:

None known.

### Other hazards:

None known.

### Toxicity:

Classification according to GHS: Category 4.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Substance/Mixture:** Mixture.

#### Composition:

| Chemical Name           | CAS        | Conc. (m/m%) | Classification EC 1272/2008   |
|-------------------------|------------|--------------|---|
| Benomyl Technical (98%) | 17804-35-2 | 50 %         | Skin irrit. 2 (H315)<br>Skin Sens. 1 (H317)<br>STOT SE 3 (H335)<br>Muta. 1B (H340)<br>Repr. 1B (H360)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410) |
| Aerosol OT-B            | 577-11-7   | <5 %         | Skin Irrit. 2 (H315)<br>Eye Dam. 1 (H318)   |

### 4. FIRST AID MEASURES

Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure and consult a doctor.

**Inhalation:** If dust has been inhaled and person feels unwell, move to fresh air and remove source of contamination if safe to do so. The patient should be kept under observation. Obtain medical attention if irritation persists.

**Skin:** Remove contaminated clothing. Wash skin gently and thoroughly with cold water and non-abrasive soap. Obtain medical attention if irritation persists.

**Eyes:** Flush eyes with clean water for at least 15 – 20 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. **Seek medical attention if irritation persists.**

**Ingestion: Do not induce vomiting.** Product is not likely to be hazardous. No specific intervention is indicated. Wash mouth with water and give a glass of water to drink if the patient is conscious. Seek medical attention if patient feels unwell.

**Anticipated acute effects:** Causes skin irritation. Causes serious eye irritation. Harmful if inhaled.

**Anticipated delayed effects:** May cause genetic defects. May damage fertility or the unborn child.

**Most important symptoms/effects:** Symptoms of exposure to the product include itching, scratchy throat, sneezing and coughing. Accidental swallowing has caused nausea, vomiting, diarrhoea, headache, ataxia, confusion, and fatigue in man.

**Advice to physician:** There is no specific antidote available. Treat symptomatically and supportively. If **Benomyl 500 WP** has been ingested, and copious vomiting has not occurred, the stomach must be emptied and steps taken to limit gastrointestinal absorption.

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:** Extinguish small fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock but avoid water coming in contact with the product.

**Unsuitable Extinguishing Media:** Water.

**Specific hazards:** Fire may produce poisonous gases of combustion, namely n-butyl isocyanate.

**Special Fire Fighting Procedures:** Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Keep upwind. Avoid inhaling hazardous vapours and fumes from burning materials. Remove container from fire area if possible and without risk. Do not use high volume water jet, due to contamination risk. Do not scatter the burning material. Water can be used to cool unaffected containers but must be contained for later disposal. Contain fire control agents for later disposal. Avoid pollution of waterways by run-off from the site.

**Personal protective equipment:** Wear NIOSH/MSHA approved self-contained breathing apparatus and full bunker gear.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Avoid contact with eyes and skin. Do not breathe in dust. Ventilate area of spill, especially in contained areas.

**Protective equipment:** Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.

**Emergency procedures:** Alert firefighting personnel, evacuate unprotected personnel and animals.

**Environmental Precautions:** Prevent spilled product from entering sewers, waterways, or ground water. This product is classified to be very toxic to aquatic organisms and causes long-term adverse effects in the aquatic environment. Any spillages or uncontrolled

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discharges into water courses should be reported immediately to the police and the Department of Water/Environmental Affairs.

**Methods and Materials for Containment:** Contain spilled product.

**Methods and Materials for Clean-up:** Contain spilled product by picking up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal. Do not create a powder cloud by using a brush or compressed air.

### 7. HANDLING AND STORAGE

**Handling:**

**Precautions for safe handling:** Avoid contact with eyes and skin. Ensure adequate ventilation during handling and use. Do not handle broken containers without protective equipment. Immediately clean up spills that occur during handling. Keep containers tightly closed when not in use. In the case of contact with the product refer to First Aid Measures – Section 4.

**General occupational hygiene:** Practice good hygiene when using this material. Wash hands before eating, drinking, chewing gum, smoking, using the toilet or applying cosmetics. Worker should shower at the end of each workday. Launder all clothing before it is re-used.

**Storage:**

**Conditions for safe storage:** Keep under lock and key and out of reach of unauthorised persons, children, and animals. Store in its original labelled container tightly closed, in an isolated, dry, cool, and well-ventilated area. Avoid excessive heat. Avoid cross contamination with other pesticides and fertilisers.

**Incompatible substances and mixtures:** Refer to product label.

**Packaging material:** Plastic containers, sealed foil bags and woven bags or 3 ply paper bags.

### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Permissible concentration**

| Components                  | Exposure limits  | Type of exposure limit | Source   |
|-----------------------------|--|------------------------|----------|
| Benomyl TC                  | Total dust:<br>10 mg/m <sup>3</sup><br>Respirable fraction:<br>5 mg/m <sup>3</sup> | 8-hour TWA             | OSHA PEL |
| Filler<br>CAS: 57-50-1      | Total dust:<br>10 mg/m <sup>3</sup><br>Respirable fraction:<br>5 mg/m <sup>3</sup> | 8-hour TWA             | OSHA PEL |
| Filler<br>CAS:<br>1332-58-7 | 2 mg/m <sup>3</sup> (no asbestos, < 1% crystalline silica)                         |                        |          |

**Engineering Controls:**

It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Local Exhaust: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs or other specified exposure limits. Local exhaust ventilation is preferred. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

**Personal Protective Equipment:**

**Respiratory Protection:** Wear an organic cartridge respirator suitable for protection from mists/ vapours of pesticides if inhalation is likely to occur.

**Hand Protection:** Employee must wear appropriate gloves to prevent contact with this mixture.

**Eye Protection:** The use of safety goggles or a face shield is recommended.

**Skin and Body Protection:** The use of protective (impervious) clothing e.g. coveralls is recommended to prevent skin contact with this mixture.

**Emergency eyewash:** Where there is any possibility that an employee's eyes may be exposed to this mixture; the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Solid off-white fine powder.

**Odour:** Weak chemical odour.

**pH (1% aqueous dilution):** Not available.

**Melting point:** Not available.

**Freezing Point:** Not available.

**Boiling Point:** Not available.

**Flash Point:** Not applicable.

**Flammability:** Not available.

**Upper/lower explosion limits:** Not available.

**Vapour Pressure (mm Hg):** Not available.

**Relative Vapour Density:** Not available.

**Density/Relative density:** Not available.

**Solubility:** Wetable powder formulation-dispersible.

**n-octanol/water partition coefficient:** Not available.

**Auto-ignition temperature:** 220°C.

**Decomposition temperature:** Not available.

**Viscosity:** Not available.

### 10. STABILITY AND REACTIVITY

**Chemical Stability:** The product is stable for two years at ambient temperature and pressure, under normal storage and handling conditions. Avoid storage under extreme temperatures and conditions. Store below 50°C, preferably below 30°C, and not for prolonged periods in direct sunlight.

**Reactivity:** None known.

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**Possibility of Hazardous Reactions:** None known.

**Conditions to Avoid:** None known.

**Incompatible Materials:** Compatible with most other pesticides, except strong alkaline materials, when used at normal rates. However, a compatibility test is required before using with other products. Do not physically mix concentrate directly with other herbicides or pesticide concentrates; always dilute first.

**Hazardous Decomposition Products:** None known.

## 11. TOXICOLOGICAL INFORMATION

### ACUTE TOXICITY:

**Calculated according to GHS.**

**Oral LD<sub>50</sub>** (24 h) rat >7900 mg/kg.

**Dermal LD<sub>50</sub>** (24 h) rabbit > 8600 mg/kg.

**Inhalation LC<sub>50</sub>** (4 h) rat >3.8 mg/ℓ.

**Skin Irritation/Corrosion:** Causes skin irritation.

**Eye Damage/Irritation:** Causes serious eye irritation.

**Skin Sensitization:** May cause an allergic skin reaction.

**Respiratory Sensitization:** Not classified.

**Reproductive cell mutagenicity:** May cause genetic defects.

**Carcinogenicity:** Not classified.

**Reproductive toxicity:** May damage fertility or the unborn child.

**Specific target organ toxicity – single exposure:** May cause respiratory irritation.

**Specific target organ toxicity – repeated exposure:** Not classified.

**Aspiration hazard:** Not classified.

**Chronic Effects:** Not available.

### POTENTIAL ADVERSE EFFECTS:

**Inhalation:** Mild irritant to the nose, throat, and respiratory system.

**Skin contact:** Causes skin irritation, Moderate sensitizer. Repeated exposure to product may cause temporary allergic skin reaction.

**Eye contact:** Due to the inerts, this product can cause serious eye irritation.

**Ingestion:** Maybe harmful if swallowed.

## 12. ECOLOGICAL INFORMATION

This product is very toxic to aquatic life with long lasting effects.

### ECOTOXICITY DATA: Active ingredient.

#### Fish:

|                         |               |           |
|-------------------------|---------------|-----------|
| LC <sub>50</sub> (96 h) | Rainbow trout | 0.27 mg/ℓ |
|                         | Goldfish      | 4.2 mg/ℓ  |
| LC <sub>50</sub> (48 h) | Guppies       | 3.4 mg/ℓ  |

#### Daphnia:

|                         |  |           |
|-------------------------|--|-----------|
| LC <sub>50</sub> (48 h) |  | 0.64 mg/ℓ |
|-------------------------|--|-----------|

#### Algae:

|                                       |  |          |
|---------------------------------------|--|----------|
| E <sub>b</sub> C <sub>50</sub> (72 h) |  | 2.0 mg/ℓ |
| (120 h)                               |  | 3.1 mg/ℓ |

#### Birds:

|                                |                |                    |
|--------------------------------|----------------|--------------------|
| Dietary LC <sub>50</sub> (8 d) | Mallard ducks  |                    |
|                                | Bobwhite quail | >10 000 mg/kg diet |

#### Bees:

|                  |           |             |
|------------------|-----------|-------------|
| LD <sub>50</sub> | (contact) | > 50 µg/bee |
|------------------|-----------|-------------|

#### Worms:

|                         |            |                  |
|-------------------------|------------|------------------|
| LC <sub>50</sub> (14 d) | earthworms | 10.5 mg/kg soil. |
|-------------------------|------------|------------------|

**Plants:** In plants, the butylcarbamoyl group is removed to give the relatively stable carbendazim, followed by slow degradation to non-toxic 2-aminobenzimidazole. Further degradation involves cleavage of the benzimidazole nucleus. Benomyl *per se* is stable on the surface of banana skins (J. Cox *et al.*, *Pestic. Sci.*, 1974, **5**, 135; J. Cox & J. A. Pinegar, *ibid.*, 1976, **7**, 193).

### ENVIRONMENTAL EFFECTS:

**Persistence and degradability:** Benomyl is rapidly converted to carbendazim in the environment, DT<sub>50</sub> 2 and 19 h in water and in soil, respectively. Data from studies on both benomyl and carbendazim are therefore relevant for the evaluation of environmental effects. K<sub>oc</sub> 1900.

**Bio-accumulative Potential:** Not determined.

**Mobility in soil:** Not determined.

**Other adverse effects:** Not determined.

## 13. DISPOSAL CONSIDERATIONS

**Waste:** Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or re-processed. Never pour untreated waste or surplus product into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. The product may be taken to a registered waste disposal site or incineration plant. Where possible, recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.

**Container:** TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS: Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler ([www.croplife.co.za](http://www.croplife.co.za)). Do not bury, burn, or donate the container to any other parties that may use it as a container for food or beverages.

## 14. TRANSPORT INFORMATION

**UN Number:** 3077

**Road Transport ADR/IRD:**

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Class: 9  
Packaging group: III  
UN Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S  
(Benomyl 50 g/kg)

**Maritime Transport IMDG/IMO:**

Class: 9  
Packaging group: III  
UN Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S  
(Benomyl 50 g/kg)

**Marine Pollutant (Y/N): Yes**

**Air transport IATA/CAO:**

Class: 9  
Packaging group: III  
UN Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S  
(Benomyl 50 g/kg)

**Special/Environmental Precautions: None known.**

**Transport in bulk** (according to MARPOL 73/78, Annex II and the IBC code): Not available.

## 15. REGULATORY INFORMATION

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

OHSA 1993 Regulations for Hazardous Chemical Substances.

**Relevant information regarding restrictions:** None.

**EU regulation:** Regulation EC1272/2008 (EU-GHS/CLP)

**Other national regulations:** None.

**Chemical Safety Assessment carried out?** No

## 16. OTHER INFORMATION

**Packaging:** Packed in 200 g, 250 g and 500 g, 1, 2, 5, 10, 20 and 25 kg plastic containers; sealed foil bags and woven bags or 3 ply paper bags. labelled according to South African regulations and guidelines.

**Additional H-statement (s) (formulants)**

**H318:** Causes serious eye damage.

**Disclaimer:** The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed. All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

**END OF DOCUMENT**

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For detailed information on revisions, contact the Registration holder.