

# UNIVERSAL THIABENDAZOLE 500SC

# MATERIAL SAFETY DATA SHEET

## 1. PRODUCT & COMPANY IDENTIFICATION

**Product Name:** THIABENDAZOLE 500SC  
 Fungicide  
**UN No.:** 3082  
**Company:** Universal Crop Protection (Pty) Ltd.  
**Co. Reg. No.:** 1983/008184/07  
 PO Box 801,  
 Kempton Park, 1620, 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:

Envirosure. +27 31 205 4918  
 (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

#### Villa Crop Protection Emergency number:

**National Safety, Health and Environmental Manager:**  
 +27 63 698 0668

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Common name:** Thiabendazole  
**Chemical Name:** 2-(thiazol-4-yl)benzimidazole; 2-(1,3-thiazol-4-yl)benzimidazole (IUPAC)  
**CAS No.:** 148-79-8  
**Chemical Family:** benzimidazole  
**Chemical Formula:** C<sub>10</sub>H<sub>7</sub>N<sub>3</sub>S  
**Molecular weight:** 201.3  
**Use:** Systemic fungicide with protective and curative action. Inhibits mitosis by binding to tubuline and thus severely impairs fungal growth and development.  
**Formulation:** Thiabendazole 500 g/l Soluble Concentrate

### Hazardous ingredients of toxicological concern:

| Inert:           | concern:       | % present: |
|------------------|----------------|------------|
| Thiabendazole    | slightly toxic | 50 %       |
| propylene glycol | mild irritant  | ± 5 %      |
| water            | non            | ± 35 %     |
| other inerts     | non            | ± 10 %     |

**Symbol:** Xi, N  
**Indication of danger:** Irritant, Environmentally Hazardous Substance.

**Risk-Phrases:** R36/37/38, R51

## 3. HAZARD IDENTIFICATION

### Likely routes of exposure:

**Skin:** Not harmful. Product may be mildly irritating, but is unlikely to cause anything more than mild discomfort.

**Eye:** Not harmful. Product may be mildly irritating to eyes, but is unlikely to cause anything more than mild discomfort.

**Inhalation:** Not harmful. No hazard in normal use. Product is considered to be low. May cause irritation to nose and throat.

**Swallowed:** Not harmful. Product is unlikely to cause any effects. When large amounts are swallowed, may cause gastrointestinal disorders, dizziness, headache, blurring of vision, change in urine appearance and odour and hypersensitivity reactions.

**Other Health Hazard Information:** No evidence of mutagenic, carcinogenic or reproductive effects was obtained. Extremely high doses given to pregnant rats and mice resulted in some foetal abnormalities.

## 4. FIRST AID MEASURES AND PRECAUTIONS

### Inhalation:

If vapours or mists have been inhaled, remove the source of contamination or move victim to fresh air. The patient should be kept under observation and obtain medical attention if irritation persists.

### Skin contact:

Remove contaminated clothing, shoes and leather goods. Wash skin gently and thoroughly with cold water and non-abrasive soap. Obtain medical attention if irritation persists.

### Eye contact:

Immediately flush eyes with a stream of clean water for at least 20 minutes, holding the eyelid(s) open. Obtain medical attention if irritation persists.

### Ingestion:

**Do not induce vomiting.** Do not give anything by mouth. Obtain medical attention immediately. If the person is alert, rinse mouth thoroughly with water.

### Advice on treatment:

There is no specific antidote available. Treat symptomatically and supportively.

## 5. FIRE FIGHTING MEASURES

**Flash point:** None – water based.

**This material is not flammable.**

### Extinguishing agents:

Extinguish fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for

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cooling of unaffected stock, but avoid water coming in contact with the product. Use as little water as possible. Use spray or fog. Solid stream may cause spreading. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

### Fire fighting:

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 and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. 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.

Dyke fire control water for later disposal. Do not scatter the material. Avoid pollution of waterways.

Do not use high volume water jet, due to contamination risk. Contain water used for fire fighting for later disposal.

Avoid the accumulation of polluted run-off from the site.

### Personal protective equipment:

Fire may produce irritating or poisonous vapours, mists or other products of combustion. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

## 6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

### Personal precautions:

Avoid contact with skin and eyes. Do not breathe in spray or fumes. For personal protection see Section 8.

### Environmental precautions:

Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs. Considered as Marine Pollutant.

### Occupational spill:

Do not touch-spilled material; stop leak if you can do it without risk. Keep out unprotected persons and animals.

**For spills:** Soak up with absorptive material such as damp earth or sand or other suitable non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Keep spectators away and upwind.

To decontaminate spill area, tools and equipment, wash with a suitable solution (i.e. organic solvent, detergent bleach or caustic). Add the solution to the drums already

collected. Label drums with its content and dispose it in accordance with local regulations.

Open burning or dumping of this material is prohibited.

Do not get water inside containers.

## 7. HANDLING AND STORAGE REQUIREMENTS

### Handling:

Product may be mildly irritating to eyes and skin. Avoid contact with eyes and skin, and inhalation of spray and vapour. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the pesticide 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.

### Storage:

Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

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.

### PERSONAL PROTECTIVE EQUIPMENT:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

### Respirator:

An approved respirator suitable for protection from mists of pesticides is adequate. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

### Clothing:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

### Gloves:

Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

### Eye protection:

The use of safety goggles is recommended.

**Emergency eye wash:** Where there is any possibility that an employee's eyes may be exposed to this substance,

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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:**

White homogeneous viscous liquid suspension with mild odour.

**Flammability:**

Not Flammable.

**Flash point:**

Not determined – water based product.

**Explosion properties:**

Not explosive.

**Solubility:**

Completely soluble in water.

**Density:**

1,04 to 1,14 g/ml

### 10. STABILITY AND REACTIVITY

**Stability:**

Chemically and thermally stable.

**Storage stability:**

Stable for a period of 2 years under normal warehouse conditions.

**Conditions and Materials to Avoid:**

Keep the product in a cool, dry place, at below 30 °C. Protect from sunlight, open flame and sources of heat. Avoid contact with strong bases and strong oxidising agents. Incompatible with strong alkalis.

### 11. TOXICOLOGICAL INFORMATION

**Acute oral LD<sub>50</sub> rats:**

*Thiabendazole* Technical: 3100 - 3600 mg/kg  
 Formulation calculated: > 3000 mg/kg

**Acute dermal LD<sub>50</sub> rats:**

*Thiabendazole* Technical: > 2000 mg/kg  
 Formulation calculated: > 2000 mg/kg

**Acute skin irritation:**

*Thiabendazole* Technical: non-irritant  
 Formulation: mild irritant

**Acute eye irritation:**

*Thiabendazole* Technical: non-irritant  
 Formulation: mild irritant

**Dermal sensitisation:**

Not expected to be a skin sensitizer. Individuals may develop an allergic response.

**Inhalation:**

Not harmful. Inhalation of excessive amounts may cause respiratory irritation.

Technical: LC<sub>50</sub> (4hours) for rat: > 0,5 mg/ℓ air

**Mutagenicity:**

Several studies with bacteria have failed to produce any chromosome changes or mutations due to **Thiabendazole**. It appears that the compound is not mutagenic.

**Reproductivity:**

Reproductive effects in humans are not likely at anticipated levels of exposure.

**Teratogenicity:**

Teratogenic effects are not likely from **Thiabendazole** exposure.

**Carcinogenicity:**

It does not appear that **Thiabendazole** is carcinogenic.

### 12. ECOLOGICAL INFORMATION

**Mobility, Degradability & Accumulation:**

**Thiabendazole's** affinity for binding to soil particles increases with increasing soil acidity. It is highly persistent. The field half-life has been reported as 403 days. Due to its binding and slight solubility in water, it is not expected to leach readily from the soil.

**Thiabendazole** is stable in aqueous suspension and acidic media. Its low water solubility will make it unlikely to be in solution, and it will most likely be bound to sediment.

**Thiabendazole** is readily absorbed by roots and translocated to all parts of a plant, predominantly to the leaf margins. The residue on crops treated pre- or post-harvest is parent **Thiabendazole**.

When administered orally to animals, **Thiabendazole** is rapidly absorbed; up to 90% of the total dose is eliminated within 24 hours. The compound is essentially completely cleared from the body within 7 days. It undergoes hydroxylation at the 5-position.

**ECOTOXICOLOGY:**

**Birds:** Slightly toxic to birds.

|                                |                 |              |
|--------------------------------|-----------------|--------------|
| Oral LD <sub>50</sub> :        | Bobwhite quail: | > 2250 mg/kg |
| LC <sub>50</sub> diet (5days): | Bobwhite quail  | > 5620 mg/kg |
|                                | Mallard ducks:  | > 5620 mg/kg |

**Fish:** Moderately toxic to fish.

|                              |                   |           |
|------------------------------|-------------------|-----------|
| LC <sub>50</sub> (96 hours): | Bluegill sunfish: | 19 mg/ℓ   |
|                              | Rainbow trout:    | 0,55 mg/ℓ |

**Thiabendazole** is not expected to appreciably accumulate in aquatic organisms. BCF is 87 times the ambient water concentrations. Fish eliminate the compound within 3 days after being placed in **Thiabendazole**-free water.

**Daphnia:**

|                              |                        |           |
|------------------------------|------------------------|-----------|
| EC <sub>50</sub> (48 hours): | <i>Daphnia magna</i> : | 0,81 mg/ℓ |
|------------------------------|------------------------|-----------|

**Bees:**

Not toxic to bees.

**Earthworm:**

|                    |                  |
|--------------------|------------------|
| LC <sub>50</sub> : | > 500 mg/kg soil |
|--------------------|------------------|

**Algae:**

|                            |                      |        |
|----------------------------|----------------------|--------|
| EC <sub>50</sub> (96 hrs): | <i>Selenastrum</i> : | 9 mg/ℓ |
|----------------------------|----------------------|--------|

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Considered a Marine Pollutant.

## 13. DISPOSAL CONSIDERATION

### Pesticide disposal:

Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or reprocessed. Never pour untreated waste or surplus products 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.

Comply with local legislation applying to waste disposal.

### Container disposal:

Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed.

**TRIPLE RINSE** empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow draining for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of one third of that of the container. Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner.

Do not re-use the empty container for any other purpose but destroy it by perforation and flattening and bury in an approved dumpsite. Prevent contamination of food, feedstuffs, drinking water and eating utensils.

Comply with local legislation applying to waste disposal.

## 14. TRANSPORT INFORMATION

**UN NUMBER:** 3082  
**Road Transport ADR/RID:**  
 Class: 9  
 Packaging group: III  
 Shipping name: Environmentally Hazardous Substance, N.O.S.  
 (Thiabendazole 500 g/l)

**Maritime Transport IMDG/IMO:**  
 Class: 9  
 Packaging group: III  
 Shipping name: Environmentally Hazardous Substance, N.O.S.  
 (Thiabendazole 500 g/l)

Considered a marine pollutant.

## 15. REGULATORY INFORMATION

**Symbol:** Xi, N  
**Indication of danger:** Irritant, Environmentally Hazardous substance.  
**Risk phrase(s):**

**R 36/37/38** Irritating to eyes, respiratory system and skin.  
**R 51** Toxic to aquatic organisms.  
**Safety phrases:**  
**S 2** Keep out of reach children.  
**S 13** Keep away from food, drink and animal feeding stuffs.  
**S 23** Do not breathe vapour/spray.  
**S 24/25** Avoid contact with skin and eyes.  
**S 60** This material and its container must be disposed of as hazardous waste.  
**S 61** Avoid release to the environment. Refer to special instructions/safety data sheets.

## 16. OTHER INFORMATION

### Packaging:

Packed in 1, 5, 10, 20 and 25 litres fluorinated plastic containers and labelled according to South African regulations and guidelines.

### 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 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.