

## FORTRESS ULTRA 325 SC

## SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product name:** FORTRESS ULTRA 325 SC  
**Other identifier:** Azoxystrobin 200 SC+ Difenconazole 125 SC  
**Recommended use:** Fungicide  
**Restrictions on use:** Agriculture

**Registration Holder:** Meridian Agrochemical Company (Pty) Ltd.  
**Co. Reg. No.:** 2000/010819/07  
 65 Botes Road, Glen Marais, Kempton Park, 1619, 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>   |                   |              |
| Inhalation  | Acute Toxicity 4  | H332         |
| Eye   | Eye irritation 2  | H319         |
| Inhalation  |                   |              |
| <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:**  
 Harmful if inhaled.  
 Causes serious eye irritation.  
**Label elements:**



**Signal word:** Warning  
**Hazard statements:**  
 H332: Harmful if inhaled.  
 H319: Causes serious eye irritation.  
 H400: Very toxic to aquatic life.  
 H410: Very toxic to aquatic life with long lasting effects.  
**Precautionary statements:**  
 P261: Avoid breathing dust, mists or spray.  
 P264+P265: Wash hands thoroughly after handling. Do not touch eyes.  
 P271: Use only outdoors or in a well-ventilated area.  
 P273: Avoid release into the environment.  
 P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.  
 P304+P340+P317: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.  
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+P317: If eye irritation persists: Get medical help.  
 P391: Collect spillage.  
 P501: Dispose of contents/container to suitable landfill in accordance with local regulations.  
**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/v %) | Classification EC 1272/2008   |
|---------------|-------------|---------------|---|
| Azoxystrobin  | 131860-33-8 | 18.9 %        | Acute Toxicity 3 (H331)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410) |

## FORTRESS ULTRA 325 SC

## SAFETY DATA SHEET

|                 |             |        |   |
|-----------------|-------------|--------|---|
| Difenoconazole  | 119446-68-3 | 12.3 % | Acute Toxicity 4 (H302)<br>Eye irritation 2 (H319)<br>Aquatic acute 1(H400)<br>Aquatic chronic 1 (H410) |
| Ethylene glycol | 107-21-1    | < 5%   | Acute Toxicity 4 (H302)   |

fire from maximum distance and use unmanned hose holder or monitor nozzles. Remain upwind of fire. 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 protective gear.

### 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.

**Inhalation:** Remove person from contaminated area to fresh air and assist breathing as needed. Keep affected person warm and at rest. Supply oxygen if necessary. Treat symptomatically and supportively.

**Obtain medical attention if irritation occurs.**

**Skin:** Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap.

**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. **Obtain medical attention if irritation persists.**

**Ingestion:** Seek medical attention or call a poison control centre for treatment advice. Do not induce vomiting unless instructed to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person. If the person is alert, rinse mouth thoroughly with water.

**Anticipated acute effects:** Harmful if inhaled and causes serious eye irritation.

**Anticipated delayed effects:** None known.

**Most important symptoms / effects:** None known.

**Advice to physician:** Treat symptomatically and supportively. No specific antidote known.

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:** Use carbon dioxide or dry chemical for small fires and water fog or foam for large fires.

**Unsuitable Extinguishing Media:** High volume water jet. Use a water jet only to cool heated containers.

**Specific hazards:** None known.

**Special fire-fighting procedures:** Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid contact with eyes. Do not breathe in spray, mist or dust. Ventilate area of spill or leak, 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 as very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Any spillages or uncontrolled discharges into watercourses should be reported immediately to the police and the Department of Water / Environmental Affairs.

**Methods and Materials for Containment:** Contain spilt product by diking area with sand or earth.

**Methods and Materials for Clean-up:** Cover contained spill with an inert absorbent material such as sand, vermiculite, earth or other appropriate material. Vacuum, scoop, or sweep up material and place the material into a clean, dry, sealable container. Label containers with the contents and dispose of according to local regulations. Do not place spilt material back in original container. Do not re-use spilt material. Collect washings and add to the drums already collected. Do not flush spilt material or washings into drains or waterways. To decontaminate the spill area, tools and equipment, wash with water and suitable detergent. See section 13 for disposal considerations.

### 7. HANDLING AND STORAGE

**Handling:**

**Precautions for safe handling:** Harmful if inhaled. Avoid contact with eyes (causes serious eye irritation).

## FORTRESS ULTRA 325 SC

## SAFETY DATA SHEET

Ensure adequate ventilation during handling and use. Do not handle broken packages without protective equipment. Immediately clean up spills that occur during handling. Keep containers 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 product. 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 excess heat. Not to be stored next to foodstuffs, feed and water supplies. Avoid cross contamination with other pesticides and fertilisers.

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

**Packaging material:** Plastic containers.

### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Permissible concentration:**

No occupational exposure limits have been determined for the significant ingredients in this product.

**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 OELs 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:** For most well-ventilated conditions, no respiratory protection should be needed. If used in a poorly ventilated area (airborne concentrations exceed exposure limits), use a NIOSH approved, air-purifying respirator with cartridges / canisters approved for organic vapours.

**Hand Protection:** The use of chemically protective impervious gloves is recommended to prevent against skin contact.

**Eye Protection:** The use of chemical safety goggles is recommended to prevent against eye contact. Contact lenses are not protective eye devices.

**Skin and Body Protection:** Employees must wear appropriate protective impervious clothing, rubber boots, hat and equipment to prevent repeated or prolonged skin contact with this substance.

**Emergency eyewash:** 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.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Cream white liquid.

**Odour:** Characteristic odour.

**Odour threshold:** Not available.

**pH (1% aqueous dilution):** 8.0

**Melting point:** Not available.

**Freezing Point:** Not available.

**Boiling Point:** Not available.

**Flash Point:** Not flammable.

**Flammability:** Not flammable.

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

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

**Relative Vapour Density:** Not available.

**Density / Relative density:** 1.07 g/ml.

**Solubility:** Emulsifies in water.

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

**Auto-ignition temperature:** 505 °C

**Decomposition temperature:** Not available.

**Viscosity:** 169-646 mPa.s at 20 °C

98.0-472 mPa.s at 40 °C

### 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.

**Possibility of hazardous reactions:** None known.

**Conditions to avoid:** Extreme heat or exposure to flames.

**Incompatible materials:** None known.

**Hazardous decomposition products:** When heated to decomposition, irritant or dangerous fumes may be emitted.

# FORTRESS ULTRA 325 SC

# SAFETY DATA SHEET

## 11. TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY: Calculated**  
**Oral LD<sub>50</sub>** >7500 mg/kg Unclassified.  
**Dermal LD<sub>50</sub>** >6400 mg/kg Unclassified.  
**Inhalation LC<sub>50</sub>** (4h) >3.2 mg/l. (rats).  
**Skin Irritation / Corrosion:** Not available.  
**Eye Damage / Irritation** Causes serious eye irritation.  
**Skin Sensitization:** Not available.  
**Respiratory Sensitization:** Not available.  
**Reproductive cell mutagenicity:** Not available.  
**Carcinogenicity:** Not available.  
**Reproductive toxicity:** Not available.  
**Specific target organ toxicity – single exposure:** Not available.  
**Specific target organ toxicity – repeated exposure:** Not available.  
**Aspiration hazard:** Not available.  
**Chronic Effects:** Not available.  
**POTENTIAL ADVERSE EFFECTS:**  
**Inhalation:** Harmful if inhaled.  
**Skin contact:** None known.  
**Ingestion:** None known.  
**Eye contact:** Causes serious eye irritation.

## 12. ECOLOGICAL INFORMATION

This product is very toxic to aquatic life with long lasting effects.  
**ECOTOXICITY DATA:** Based on azoxystrobin and difenoconazole.

### Fish:

|                            |                  |           |
|----------------------------|------------------|-----------|
| <b><u>Azoxystrobin</u></b> |                  |           |
| LC <sub>50</sub> (96 h)    | Rainbow trout    | 0.47 mg/ℓ |
|                            | Bluegill sunfish | 1.1 mg/ℓ  |
|                            | Carp             | 1.6 mg/ℓ  |
|                            | Sheepshead       | 0.66 mg/ℓ |
|                            | Minnows          |           |

### **Difenoconazole**

|                         |                  |          |
|-------------------------|------------------|----------|
| LC <sub>50</sub> (96 h) | Rainbow trout    |          |
|                         | Bluegill sunfish | 1.1 mg/ℓ |
|                         | Sheepshead       | 1.2 mg/ℓ |
|                         | Minnows          |          |

### **Daphnia:**

|                         |  |          |
|-------------------------|--|----------|
| EC <sub>50</sub> (48 h) |  | 1.1 mg/ℓ |
|-------------------------|--|----------|

### **Difenoconazole**

|                         |  |           |
|-------------------------|--|-----------|
| EC <sub>50</sub> (48 h) |  | 0.77 mg/ℓ |
|-------------------------|--|-----------|

### **Algae:**

|                                      |   |                                      |
|--------------------------------------|---|--------------------------------------|
| <b><u>Azoxystrobin</u></b>           |   |                                      |
| EC <sub>50</sub> (72 h)              | <i>Psuedokirchneriel la subcapitata</i> | 0.18 mg/ℓ                            |
|                                      | <i>Navicula pelliculosa</i>             | 0.028 mg/ℓ                           |
| <b><u>Difenoconazole</u></b>         |   |                                      |
| EC <sub>50</sub> (72 h)              | <i>Scenedesmus subspicatus</i>          | 0.03 mg/ℓ                            |
| <b><u>Birds:</u></b>                 |   |                                      |
| <b><u>Azoxystrobin</u></b>           |   |                                      |
| Acute oral LD <sub>50</sub>          | Bobwhite quail and Mallard ducks        | >2000 mg/kg                          |
| Dietary LD <sub>50</sub> (5d)        | Bobwhite quail and mallard ducks        | >5200 mg/kg diet                     |
| <b><u>Difenoconazole</u></b>         |   |                                      |
| Acute oral LD <sub>50</sub> (9-11 d) | Mallard ducks and Japanese quail        | >2150 mg/kg<br>>2000 mg/kg           |
| Dietary LD <sub>50</sub> (5d)        | Mallard ducks and Bobwhite quail        | >5000 mg/kg diet<br>>4760 mg/kg diet |
| <b><u>Bees:</u></b>                  |   |                                      |
| <b><u>Azoxystrobin</u></b>           |   |                                      |
| LD <sub>50</sub> contact             |   | >200 µg/bee                          |
| LD <sub>50</sub> oral                |   | >25µg/bee                            |
| <b><u>Difenoconazole</u></b>         |   |                                      |
| LD <sub>50</sub> contact             |   | >100 µg/bee                          |
| LD <sub>50</sub> oral                |   | >187 µg/bee                          |
| <b><u>Worms:</u></b>                 |   |                                      |
| <b><u>Azoxystrobin</u></b>           |   |                                      |
| LC <sub>50</sub> (14d)               | earthworms                              | >283 mg/kg soil                      |
| <b><u>Difenoconazole</u></b>         |   |                                      |
| LC <sub>50</sub> (14d)               | <i>Eisenia fetida</i>                   | >610 mg/kg soil                      |
| <b><u>Other aquatic spp:</u></b>     |   |                                      |
| <b><u>Azoxystrobin</u></b>           |   |                                      |
| LC <sub>50</sub> (96h)               | Mysid shrimps                           | 0.055 mg/ℓ                           |
| EC <sub>50</sub> (48h)               | Pacific oysters                         | 1.3 mg/ℓ                             |

## FORTRESS ULTRA 325 SC

## SAFETY DATA SHEET

(14d) Lemna gibba 3.2 mg/l

### Difenoconazole

LC<sub>50</sub> (96h) Mysid shrimps 0.15 mg/l

EC<sub>50</sub> (96h) Eastern oysters 0.3 mg/l

EC<sub>50</sub> (7d) Lemna gibba 1.9 mg/l

### Other beneficial spp

### Azoxystrobin

LR<sub>50</sub> *Typhlodromus* >1500 g/ha

*Aphidius* >1000 g/ha

*rhopalosipi*

### Difenoconazole

NOEC (28d) reproduction *Folsomia candida* 500 mg/kg

### Plants:

#### Azoxystrobin

In wheat, grapes and peanuts, metabolism was extensive, but parent azoxystrobin was the only major (>10%) residue.

#### Difenoconazole

Two routes of metabolism: one by a triazole route to triazolylalanine and triazolylacetic acid; the other by hydroxylation of the phenyl ring, followed by conjugation.

### **ENVIRONMENTAL EFFECTS:**

#### Azoxystrobin

In soil, DT<sub>50</sub> (lab.) 70 d (geometric mean; normalised to 20 °C, pF2; SFO kinetics). In soil, in the dark, up to six identified metabolites were formed; over 120 d, up to 27% of applied radiolabel is evolved as CO<sub>2</sub>. Dissipation in the field is faster; DT<sub>50</sub> (geometric mean; SFO) 28 d, DT<sub>90</sub> 94 d (best fit, HS kinetics: DT<sub>50</sub> 13 d, DT<sub>90</sub> 236 d). On soil, photolysis DT<sub>50</sub> 11 d.

#### Difenoconazole

Soil dissipation rate is slow and dependent on application rate; DT<sub>50</sub> 3 mo–1 y. Hydrolytically stable at pH 5–9 (25 °C). Undergoes indirect photolysis in (sterile) natural water; DT<sub>50</sub> 4.6 d. In standard lab. water-sediment systems (n=2) in the dark, rapid dissipation from the water, DT<sub>50</sub> 1–3 d, but slow degradation in whole system, DT<sub>50</sub> c. 8 mo

### **Persistence and degradability:**

#### Azoxystrobin

Field dissipation studies showed that neither azoxystrobin nor its major degradates were typically found in soil below the top 15 cm. In water-sediment systems (lab., 20 °C, dark), water phase mean DT<sub>50</sub> 6.1 d (SFO), total system mean DT<sub>50</sub> 214 d (SFO). Degradation in atmosphere occurs by

reaction with hydroxyl radicals (AOP model), DT<sub>50</sub> 2.7 h.

### Difenoconazole

Rapid dissipation from the water, DT<sub>50</sub> 1–3 d, but slow degradation in whole system, DT<sub>50</sub> c. 8 mo.

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

### **Mobility in soil:**

#### Azoxystrobin

Azoxystrobin is classified as moderately mobile in soil; average K<sub>foc</sub> for azoxystrobin c. 430.

#### Difenoconazole

Practically immobile in soil, strong adsorption to soil particles (mean adsorption coefficient normalised to organic carbon, K<sub>oc,ads</sub> 4545 ml/g), low potential to leach below top soil layer.

**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. Comply with local legislation applying to waste disposal. The product may be taken to a registered waste disposal site or incineration plant.

**Container:** Emptied containers retain product residues. Do not re-use the empty container for any other purpose. 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. Observe all labelled safeguards until container is destroyed.

## 14. TRANSPORT INFORMATION

**UN Number:** 3082

**Road Transport ADR / ORD:**

Class: 9

Packaging group: III

## FORTRESS ULTRA 325 SC

## SAFETY DATA SHEET

UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Azoxystrobin 200 g/L + Difenoconazole 125 g/L)

**Maritime Transport IMDG / IMO:**

Class: 9

Packaging group: III

UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(Azoxystrobin 200 g/L + Difenoconazole 125 g/L)

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

**Air Transport IATA / ICAO:**

Class: 9

Packaging group: III

UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(Azoxystrobin 200 g/L + Difenoconazole 125 g/L)

**Special / Environmental Precautions:** Wedge drums tightly to avoid movement.

**Transport in bulk:** Refer to MARPOL 73/78, Annex II and the IBC code.

**TWA:** Time-weighted average – The average exposure over a specified period, usually a nominal eight hours.

**ST/STEL:** Short-term exposure limits.

**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

**Compiled:** July 2018  
**Reviewed:** October 2023  
**Revision no.:** (4)  
**Next revision:** October 2028

For detailed information on revisions, contact the Registration holder.

---

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

**Other hazard statements, abbreviations and explanations:**

**H302:** Harmful if swallowed.

**H331:** Toxic if inhaled.

**IATA:** International Air Transport Association.

**IBC:** International Bulk Chemical.

**ICAO:** International Civil Aviation Organization.

**IMDG:** International Maritime Dangerous Goods

**IMO:** International Maritime Organization.

**LD<sub>50</sub> value:** The median lethal dose or the amount of a toxic agent that is sufficient to kill 50 percent of a population within a certain period of time.