

# FARM AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000 Co Reg. No. 2005/011761/07

Head Office: 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe South Africa

Tel + 27 31 003 3486 • Fax + 27 31 502 5825

## SECTION 1 - PRODUCT & COMPANY IDENTIFICATION

**Substance:** propiconazole  
**Product Name:** ADMIRAL 250 EC  
**Product Use:** Fungicide  
**Creation Date:** December 2012  
**Revision Date:** August 2017

**24 Hr Emergency Number:** 082 903 5685  
**In case of Poisoning:**  
Poison Information Centre 082 446 8946  
Tygerberg Hospital: (021) 931 6129  
Poison Emergency Enquiries (021) 689 5227  
**In case of Spillage:**  
HAZMAT: 0800 147 112

## SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

**Common Name:** Propiconazole  
**Chemical Name:** (±)-1-[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-ylmethyl]-1*H*-1,2,4-triazole (IUPAC)  
**CAS No.:** 60207-90-1  
**Chemical family:** azole  
**Chemical formula:** C<sub>15</sub>H<sub>17</sub>Cl<sub>2</sub>N<sub>3</sub>O<sub>2</sub>  
**Molecular weight:** 342.2  
**Use:** Systemic foliar fungicide with protective and curative action, with translocation acropetally in the xylem.  
Steroid demethylation (ergosterol biosynthesis) inhibitor.  
**Formulation:** Propiconazole 250 g/l  
Emulsifiable Concentrate  
**Hazardous ingredients:** Propiconazole & xylene  
**Symbol:** F, Xn  
**Indication of danger:** Flammable, Harmful if swallowed

## SECTION 3 - HAZARD IDENTIFICATION

**Toxicity class:** WHO III (a.i.). Slightly hazardous/Caution.  
**Skin contact:** May cause moderate irritation to the skin.  
**Eye contact:** May cause moderate irritation to the eyes.  
**Inhalation:** May cause mucous membrane irritation, however, unlikely.  
**Ingestion:** Low toxicity. No case of human poisoning due to this product is on record. The poisoning symptoms observed for laboratory mammals were non-specific.  
**Environmental hazard:** Very toxic to fish.

## SECTION 4 - FIRST AID MEASURES AND PRECAUTIONS

**Inhalation:**  
Remove source of contamination or move victim to fresh air. Keep patient under observation and obtain medical attention if irritation persists.

**Skin contact:**  
Immediately remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Gently wipe off excess chemical. Wash skin gently and thoroughly with large amount of water and non-abrasive soap. If irritation persists, obtain medical attention.

**Eye contact:**  
Immediately flush the contaminated eyes with gently flowing water for 20 minutes, holding the eyelid(s) open until no evidence of chemical remains. If irritation persists, obtain medical attention.

**Ingestion:**

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**Do not induce vomiting.** Get medical attention immediately. Have victim rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen. Administration of gastric lavage or oxygen should be performed by qualified medical personnel.

**Advice to physician:**

This product contains an aromatic solvent. If product is aspirated into the lungs during ingestion or vomiting, mild to severe pulmonary injury may be caused.

No signs and symptoms of poisoning are known or expected in humans. No specific antidote is available. Treat symptomatically and supportively when required. When large amounts have been ingested, consider gastric lavage or administer activated charcoal.

## SECTION 5 - FIRE-FIGHTING MEASURES

**Fire/Explosion hazard:**

**Product is slightly flammable. Combustible.**

**Flash point: 57°C**

**Extinguishing agents:**

Extinguish 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. 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 or gases or other products of combustion. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES (SPILLAGE)

**Personal precautions:**

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

**Environmental precautions:**

Difenoconazole is very toxic to fish and is regarded as an environmentally hazardous substance.

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.

**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.

## SECTION 7 - HANDLING AND STORAGE REQUIREMENTS

**Handling:**

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Harmful if swallowed. Avoid inhalation and contact with eyes and skin. Use with adequate ventilation. Do not handle broken packages without protective equipment. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Remove clothing immediately if the product gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Seek medical advice.

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.

Worker should shower at the end of each work day. Launder all clothing before it is re-used again.

## **Storage:**

Store in its original container in dry, cool, well-ventilated area. Avoid excess heat. Not to be stored next to foodstuffs and water supplies.

Keep out of reach of children, uninformed persons and animals. Do not contaminate other pesticides and fertilizers.

## **Storage stability:**

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

## **SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION**

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. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

### **PERSONAL PROTECTIVE EQUIPMENT:**

#### **Respirator:**

An approved full-face respirator suitable for protection from spray or mists of pesticides is required. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

#### **Clothing:**

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.

#### **Gloves:**

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

#### **Eye protection:**

The use of chemical resistant goggles or face shield.

**Emergency eye wash:** 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.

Comply with occupational safety, environmental, fire, and other applicable regulations.

## **SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance:** Clear, non-viscous brownish liquid, with characteristic aromatic odour.

**Flammability:** Flammable

**Flash point:** 62 °C.

**Explosion properties:** Not explosive.

**Corrosiveness:** Non-corrosive.

**Solubility:** Forms an emulsion in water.

**pH:** 5.4 of a 5% aqueous emulsion.

**Density:** 0.971 g/ml

## **SECTION 10 - STABILITY AND REACTIVITY**

### **Stability:**

Chemically and thermally stable. Decomposition at temperatures above 300 °C.

### **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 acids, strong bases and strong oxidising agents.

### **Hazardous decomposition products:**

Fire may produce harmful combustion products (traces of hydrogen cyanide and oxides of nitrogen and carbon)

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## SECTION 11 - TOXICOLOGICAL INFORMATION

*Technical* in rats: 1355 g/kg

*Formulation* in rats: For product of similar composition oral

LD50 is >2000 mg/kg in rats.

**Acute dermal LD50:** *Technical* in rats: > 2 000 mg/kg in rats

**Acute skin irritation:** Slight irritant.

**Acute eye irritation:** Slight irritant.

**Dermal sensitisation:** Not expected to be a skin sensitizer. Individuals may develop an allergic response.

Prolonged or repeated skin

contact will defat the skin and may cause dermatitis.

**Inhalation:** Slight toxicity. Inhalation of excessive amounts may cause respiratory irritation.

**Chronic Effects:**

Extensive tests on laboratory mammals at high doses, an increased liver tumour incidence in mice was observed.

However, this effect was considered specific to the species studied and not relevant to humans.

**Mutagenicity:**

Considered as non-mutagenic as per various tests.

**Reproductivity:**

Various studies including two-year and two-generation rat studies concluded that no reproductive, foetal or embryonic parameters were affected.

**Teratogenicity:**

No teratogenic or foetotoxic effects were observed at any doses administered orally to rats.

**Carcinogenicity:**

In two-year feeding studies, the NOEL was established at 100 ppm. No tumours were observed in rats at any feeding level. EPA has classified **Propiconazole** as Group "C" for carcinogenicity – possible human carcinogen.

## SECTION 12 - ECOLOGICAL INFORMATION

**Mobility, Degradability & Accumulation:**

The soil movement and leaching potential of **Propiconazole** is limited. The half-life under field conditions ranged from 96 days in sandy loam to 575 days in silt loam. In water, hydrolysis is not significant. **Propiconazole** is subjected to photolysis. Animals rapidly metabolize to a wide variety of compounds, which are almost completely eliminated. No evidence for accumulation or retention of **Propiconazole** and its metabolites.

**ECOTOXICOLOGY:**

Non-toxic to birds. Toxic to fish. Not toxic to bees.

**Birds:**

Oral LD50: Japanese quail: 2223 mg/kg

Bobwhite quail: 2825 mg/kg

Mallard ducks: > 2510 mg/kg

**Fish:**

LC50 (96 hours): carp: 6,8 mg/l

Rainbow trout: 5,3 mg/l

*Poecilia reticulata*: 4,68 mg/l

**Daphnia:**

EC50 (48 hours): *Daphnia magna*: 2,89 mg/l

**Bees:** LD50 (contact and oral): > 100 µg/bee

**Earthworm:**

Not toxic to *Lumbricus rebellus*.

LD50: *Lampito mauritii*: 285,07 mg/kg dry wt of soil

**Algae:**

EC50 (72 hours): *Chlorella vulgaris*: 8,87 µg/ml Under field conditions, not expected to have any significant impact.

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## SECTION 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 to drain 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 10 % of that of the container. Add the rinsings 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 dump site. Prevent contamination of food, feedstuffs, drinking water and eating utensils.

Comply with local legislation applying to waste disposal.

## SECTION 14 - TRANSPORT INFORMATION

**UN NUMBER:** 3082

**Road Transport ADR/RID:** Class: 9

**Packaging group:** III

**Shipping name:** Flammable liquid, N.O.S.(Propiconazole 250 g/l)

**Maritime Transport IMDG/IMO:**

**Class:** 3

**Packing group:** III

**Shipping name:** Flammable liquid, N.O.S.(Propiconazole 250 g/l)

**Considered a marine pollutant.**

## SECTION 15 - REGULATORY INFORMATION

**Symbol:** F, Xn

**Indication of danger:** Flammable; Harmful

**Risk phrase(s):**

**R 10** Flammable

**R 20/22** Harmful by inhalation and if swallowed.

**R 36/37/38** Irritating to eyes, respiratory system and skin.

**R 51** Toxic to aquatic organisms.

**Safety phrases:**

**S 1/2** Keep locked up and out of reach children.

**S 13** Keep away from food, drink and animal feeding stuffs.

**S 16** Keep away from sources of ignition – No smoking.

**S 23** Do not breathe vapour/spray.

**S 24/25** Avoid contact with skin and eyes.

**S 36/37/39** Wear suitable protective clothing, gloves and eye/face protection.

## SECTION 16 - OTHER INFORMATION

### Packing and Labelling:

Packed in 1, 5, 10, 20, and 25 litre fluorinated plastic containers and labelled according to the 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

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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.