

FARM AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000 Co Reg. No. Reg.No. 2007/033120/07

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

Tel + 27 31 003 3486 • Fax + 27 31 502 5852

1. PRODUCT & COMPANY IDENTIFICATION

Trade name: FarmAg Difenconazole 250 EC
 Molecular formula: $C_{19}H_{17}C_{12}N_3O_3$
 Molecular Weight: 406.3
 Chemical Name: 1H-1, 2, 4-triazole, 1-[[2-[2-chloro-4-(chlorophenoxy) phenyl]-4-methyl-1, 2-dioxolan-2-yl] metyl]
 CAS No: 119446-68-3
 UN NO: 3082
 Supplier: Castle Ag-Chem (Pty) Ltd
 P.O.Box 1523
 Durban
 4000
 Telephone: 031 003 3486
 Fax: 031 502 4196

National Poison Centre: 0800 333 444
 Red Cross Poison Information Centre: (021) 689 5227
 Tygerberg Poison Information Centre: (021) 931 6127

Emergency telephone: (011) 312 1214

2. COMPOSITION / INFORMATION ON INGREDIENTS

Composition	CAS No.	Content %
Difenconazole	119446-68-3	92.0
Other ingredients	-----	8.0

3. HAZARD IDENTIFICATION

Toxicity class: WHO III (a.i.) Slightly hazardous/Caution

Eye contact: May cause moderate eye irritation.

Skin contact: May cause moderate irritation to the skin

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.

Environment hazard: Very toxic to fish.

4. FIRST AID MEASURES AND PRECAUTIONS

General: Remove the affected person from the danger zone to a well-ventilated room or to fresh air, and protect from under cooling. In case of suspected poisoning: Immediately call a physician.

Eye contact: Rinse eyes with clean water for several minutes and immediately call a physician.

Ingestion: Repeatedly administer medicinal charcoal in a large quantity of water. Note: Never give anything by mouth to an unconscious person. Do not induce vomiting.

Skin contact: Remove contaminated clothing and thoroughly wash the affected parts of the body with soap and water, including hair and under fingernails.

Medicinal instructions:

Antidote: No specific antidote is known! Apply symptomatic therapy.

Experiences Specific to Man: No case of human poisoning is on record.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing Media: Dry chemical extinguisher, foam, carbon dioxide or water spray (do not use direct jet of water)

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Measures have to be taken to prevent the contaminated extinguishing agent from seeping into the ground or from spreading uncontrollably.

Unusual fire, Explosion and Reactivity Hazards: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.**Protective Equipment for Fire Fighting:** Use self contained breathing apparatus. Wear protective equipment.**6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)**

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewerage and drainage systems or any body of water. Clean up spill immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE REQUIREMENTS

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverage or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROL/PERSONAL PROTECTION**Ingestion:** Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is potential for exposure to the material. Wash thoroughly with soap and water after handling.**Eye contact :** Where eye contact is likely, use chemical splash goggles.**Skin contact:** Where contact is likely, wear chemical-resistant (such as nitril or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.**Inhalation:** A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Liquid
Colour:	Light brown
Flash Point:	64°C
Melting Point:	78.6°C
Density:	1,40g/cm ³ @ 20°C
Vapour pressure:	3.3 x 10 ⁻⁵ mPa @ 25°C
pH Value:	5-8 (1%, in deionised water) CIPAC MT 75
Solubility:	15mg/l @ 25°C
Partition coefficient:	KowlogP = 4.20 @ 25°C.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal use and storage conditions.
Hazardous polymerization:	Will not occur
Conditions to avoid:	None known
Hazardous decomposition products:	Can decompose at high temperatures forming toxic gases.
Materials to avoid:	Strong oxidizers.

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀:	3500 mg/kg (rats)
Acute dermal LD₅₀:	> 2000 mg/kg in rats
Acute inhalation LC₅₀:	>4.56 mg/l of air in rats.
Acute skin irritation:	This product is classified as non-irritating to the skin.
Acute eye irritation:	This product is classified as non irritating to the eyes

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Dermal sensitization: Non sensitizer

12. ECOLOGICAL INFORMATION**Degradation:**

Difenoconazole is practically immobile in soil and is strongly adsorbed to soil particles (mean adsorption coefficient normalised to organic carbon, $K_{oc,ads}$ 3759 ml/g). It has a low potential to leach below top soil layer. Soil dissipation rate is slow and dependent on application rate.

DT_{50} is 50 to 150 days. DT_{50} from water is 2 days.

In plants two routes of metabolism are applicable. One is by a triazole route to triazolylalanine and triazolylacetic acid; the other is by hydroxylation of the phenyl ring, followed by conjugation.

ECOTOXICOLOGY:

Birds: Slightly to practically non-toxic to birds.

LD ₅₀ (9 to 11 days):	Bobwhite quail:	> 2150 mg/kg
	Japanese quail:	> 2000 mg/kg
LC ₅₀ :	Bobwhite quail:	4760 ppm
	Mallard ducks:	> 5000 ppm

Fish: Very toxic to fish.

LC ₅₀ (96 hours):	Bluegill sunfish:	1.2 mg/l
	Rainbow trout:	0.81 mg/l
	Sheepshead minnows:	0.82 mg/l

Daphnia: Very toxic to Daphnia.

48-hour LC ₅₀ :	<i>Daphnia magna</i> :	0.77 mg/l
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Algae: Very toxic to algae.

EC ₅₀ :	<i>Scenedesmus subspicatus</i> :	0.032 – 1.2 mg/l
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Other aquatic species: Very toxic.

LC ₅₀ (96 hours):	Mysid shrimps:	0.15 mg/l
EC ₅₀ (96 hours):	Eastern oysters:	0.45 mg/l
EC ₅₀ (14 days):	Duckweed (<i>Lemna gibba</i>):	18.5 mg/l

Bees: Not toxic to bees.	LD ₅₀ (oral):	> 187 µg/bee
	LD ₅₀ (contact):	> 100 µg/bee

Earthworms: LC₅₀: > 610 mg/kg

Use under field conditions is not expected to result in adverse effects on soil micro-organisms or on soil- and foliar-dwelling non-target arthropods.

Product is 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 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.

14. TRANSPORT INFORMATION

UN No.: 3082

Road Transport ADR/IRD:

Class: 9

Packing group: III

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Shipping name: Environmentally hazardous substance, liquid, N.O.S. (difenoconazole 250 g/l)

Maritime Transport IMDG/IMO:

Class: 9

Packing group: III

Shipping name: Environmentally hazardous substance, liquid, N.O.S. (difenoconazole 250 g/l)

15. REGULATORY INFORMATION**Symbol:** Xn, N**Indication of danger:** Harmful, Environmentally Hazardous Substance**Risk phrases:****R 7** May cause fire.**R 22** Harmful if swallowed.**R 36/37/38** Irritation to eyes, respiratory system and skin.**R 40** Limited evidence of a carcinogenic effect.**R 50** Very toxic to aquatic organisms.**Safety phrases:****S 1/2** Keep locked up and out of the reach of children.**S 15** Keep away from heat.**S 24/25** Avoid contact with skin and eyes.**S 36/37/39** Wear suitable protective clothing, gloves and eye/face protection.**S 60** This material and its container must be disposed of as hazardous waste.**16. OTHER INFORMATION**

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the products as such. In case of new formulation or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS 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 the product. If the recipients subsequently produce formulations containing this product, it is the recipients' sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.