

Material Safety Data Sheet

Ethos 275 EC L 8740 (Act 36 of 1947)

Date of issue: 25/06/2010

Date revised: 26/04/2016

1) PRODUCT AND COMPANY IDENTIFICATION	
Product name:	ETHOS 275 EC
Other means of identification:	Difenoconazole, Penconazole 275 g/L EC
Recommended use:	Fungicide
Restrictions on use:	Agriculture
UN No:	1993
Distributed by:	MERIDIAN AGRITECH P O BOX 436 MODDERFONTEIN TEL 011 8228509 FAX 0866901386 MOBILE: 0834006056 www.agritech.co.za
Emergency Number:	POISON CENTRE (UNITAS HOSPITAL) 012 664 1100 TYGERBERG: 021 931 6129 RED CROSS: 021 689 5227 RAPID SPILL RESPONSE 0800 775 3305
Chemical Name:	GRIFFON POISON 1. <i>cis,trans</i> -3-chloro-4-[4methyl2-(1 <i>H</i> -1,2,4triazol-1-ylmethyl)-1,3dioxolan-2-yl]phenyl 4-chlorophenyl ether (IUPAC) 2. 1-(2,4-dichloro- β -propylphenethyl)-1 <i>H</i> 1,2,4triazole (IUPAC)
2) Hazards Identification:	
Product Classification:	Xi; Xn; N R20/22; R37/38; R41; R50/53 Full text of phrases; see section 15
Label Elements:	Hazard symbols: Xi – Irritant Xn – Harmful N – Dangerous for the environment  Signal word: Harmful, irritant
Health effects: eyes:	May cause severe irritation.
Health effects: skin:	May cause irritation and may be harmful.
Health effects: ingestion	May cause irritation and may be fatal.
Health effects: inhalation	May cause irritation and may be fatal.
3) Composition Details:	
COMPOSITION	1. Difenoconazole 150 g/ ℓ 2. Penconazole 125 g/ ℓ
4) First Aid Measures:	

Inhalation:	Remove patient to fresh air. Lie down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance immediately.
Skin contact:	Immediately flush body and clothes with large amounts of water. Remove contaminated clothing and footwear. Wash affected areas with soap and water. Do not rub skin. If a large area is affected seek medical assistance.
Eye contact:	Flush eyes with plenty of water for 15 minutes holding eyelids open if necessary. Seek medical assistance immediately.
Ingestion	Rinse mouth thoroughly. Never give anything by mouth to an unconscious person. If swallowed do NOT induce vomiting. Prevent aspiration if vomiting occurs. Administer activated charcoal in a glass of water. For advice, contact the National Poisons Centre. Seek medical assistance immediately.
Advice to physician:	No specific antidote. Treat symptomatically. The product contains solvent that may cause chemical pneumonitis if aspirated into lungs. Onset of pulmonary injury may be delayed. Perform gastric lavage if ingested and administer activated charcoal.
5) Fire-Fighting Measures:	
Flash point:	27°C
Extinguishing Media:	Water fog, Carbon dioxide or dry chemical, halon or alcohol-resistant foam.
Fire Fighting:	Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. 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. UNUSUAL FIRE OR EXPLOSION HAZARDS: Fire may produce irritating or poisonous vapours (toxic oxides of nitrogen and corrosive bromine), mists or other products of combustion
Protective clothing:	Full protective clothing and self-contained breathing apparatus.
6) Accidental Release Measures:	
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 contaminate waterways, drains and groundwater. If contamination of waterways, drains, rivers or lakes is unavoidable, warn the local authorities (Police and Department of Water/Environmental affairs) immediately.
Occupational spill:	Wear protective clothing. Clear area of unprotected personnel and ventilate the area. Sweep up solids without generating dust and spreading. Contain and absorb liquid spills with inert material and place in waste containers. If spill does enter waterways contact the local authority. Collect in an appropriate sealable container for disposal in an approved landfill. Wash area with water and detergent and absorb with further inert material. Do not get water inside containers. Dispose of waste safely

	in an approved landfill. Open burning or dumping of this material is prohibited.
7) Handling & Storage:	
Handling:	Avoid skin and eye contact and inhalation of spray mist or fumes. Ensure adequate ventilation. Do not handle near sources of ignition. Do not directly apply to areas where surface water is present. Cleaning water should be disposed of in appropriate manner.
Storage:	Store in original container tightly closed and in a locked, dry, cool, ventilated area away from foodstuffs, fertilisers and seeds and sources of ignition. Protect from extreme temperatures. Keep out of reach of children.
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.	
Occupational Exposure Limits:	Not available
Engineering Controls:	Not available
<u>PERSONAL PROTECTIVE EQUIPMENT:</u>	
Clothing:	Employee must wear appropriate protective (impervious) clothing and full-face respirator to prevent skin contact with this substance.
Gloves:	Employee must wear appropriate chemical-resistant gloves to prevent contact with this substance
Eye protection:	The use of safety goggles or full-face shield is recommended.
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.
9) Physical & Chemical Properties:	
Form:	Liquid
Colour:	Cream
Odour:	Characteristic odour
Solubility:	Water dispersible
pH:	7,7
Odour threshold:	Not available
Melting point / Freezing point	82 – 83°C (Difenoconazole), 60.3 – 61°C (Penconazole)
Initial boiling point and boiling range	Not available
Flash point:	27°C
Evaporation rate:	Not available
Flammability (solid, gas)	Not available
Upper/ lower flammability or explosive limits:	Not available
Vapour pressure:	3.3 x 10 ⁻⁵ mPa (Difenoconazole), 0.37 mPa (Penconazole) @25°C
Vapour density:	Not available
Relative density:	Not available
Partition coefficient: n-octanol/water	Log K _{ow} 4.4 (Difenoconazole), 3.1 (Penconazole)
Auto-ignition temperature:	Not available
Viscosity:	Not available
10) Stability & Reactivity:	

Stability:	When stored appropriately this product should show no significant degradation for 2 years from the date of manufacture.
Conditions to avoid:	Keep the product in a cool, dry place at below 30°C. Avoid exposure to heat, sunlight, flames and ignition sources.
Incompatible materials:	Not available
Hazardous decomposition product(s):	Fire may produce harmful combustion products, such as carbon monoxide and organic components, which are toxic and irritating.

11) Toxicological Information:

Oral LD50 : Difenoconazole: > 1400 mg/l , rat.
: Penconazole: > 2000mg/l , rat.
Dermal LD50 : Difenoconazole: >2010 mg/kg, rabbit. :
Penconazole: >3000 mg/kg, rabbit.
Inhalation 4 h LD50 : Difenoconazole: ≥3300 mg/m³ air, rat.
: Penconazole: >4000 mg/m³ air, rat.
Skin irritation : Not an irritant, rabbit. Eye
irritation : Not an irritant, rabbit.
Sensitisation : Animal test did not cause sensitization by skin contact, guinea pig.

12) Ecological Information:

Birds : Difenoconazole: Oral LD₅₀ (9-11d) Japanese quail: > 2000 mg/kg. Mallard ducks: > 2150 mg/kg.
Penconazole: Oral LD₅₀ (8 d) Japanese quail: 2424 mg/kg. Mallard ducks: > 1590 mg/kg. Fish :
Difenoconazole: LC₅₀ (96 hours) Rainbow trout: 0.81 mg/l. Bluegill sunfish: 1.2 mg/l.
Penconazole: LC₅₀ (96 hours) Rainbow trout: 1.7-4.3 mg/l. Bluegill sunfish: 2.1-2.8 mg/l.
Daphnia : Difenoconazole:LC₅₀ (48 hours): *Daphnia*: 0.77 mg/l.
Penconazole: IC₅₀ (48 hours): *Daphnia*: 7-11 mg/l.
Algae : Difenoconazole: EC₅₀ (72 h) for *Scenedesmus subspicatus* 0.032-1.2 mg/l. Penconazole:
EC₅₀ (3 d) for *Pseudokirchneriella subcapitata* 1.7 mg/l.
Bees : Difenoconazole: LD50 (oral): > 18 µg/bee. LC50 (contact): > 100 µg/bee. Penconazole:
LD50 (oral and topical) >5 µg/bee.

Persistence and bioaccumulation:

Penconazole: Soil DT₅₀ (aerobic, 20–25 °C, lab.) 61–188 d; (field) 67–107 d. Immobile in soil; normalised K_{oc} (ads) 786–4120 ml/g. In aquatic systems, DT₅₀ from water 2–3 d (sorption to sediment), from sediment 505 to >706 d. Insignificant hydrolytic and photolytic degradation in water.

Difenoconazole: Practically immobile in soil, strong adsorption to soil particles (mean adsorption coefficient normalised to organic carbon, K_{oc,ads} 4545 ml/g), low potential to leach below top soil layer. Soil dissipation rate is slow and dependent on application rate; DT₅₀ 3 mo–1 y. Hydrolytically stable at pH 5–9 (25 °C). Undergoes indirect photolysis in (sterile) natural water; DT₅₀ 4.6 d. In standard lab. water-sediment systems (n=2) in the dark, rapid dissipation from the water, DT₅₀ 1–3 d, but slow degradation in whole system, DT₅₀ c. 8 mo.

13) Disposal Considerations:

Waste Disposal : Waste should not be re-used. Do not contaminate water, food or feed by disposal. Open dumping or burning of this pesticide is prohibited. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal : Refer to the product label for instructions.

Container Refilling and Disposal:

If the container is to be refilled, do not rinse with any material or introduce any pesticide other than this product. Add rinsing to the contents of the spray tank before destroying the container in the prescribed manner.

DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE. Destroy it by perforation and flattening and bury in an approved dumpsite.

14) Transportation Information:

UN NUMBER: 1993

Road Transport ADR/RID:

Class: 3

Packaging group: III

Shipping name: Flammable liquid, N.O.S. (difenoconazole 150 g/l; penconazole 125 g/l)

Maritime Transport IMDG/IMO:

Class: 3

Packing group: III

Shipping name: Flammable liquid, N.O.S. (difenoconazole 150 g/l; penconazole 125 g/l) Considered a marine pollutant.

15) Regulatory Information:

Symbol: F, Xi, Xn, N.

Indication of danger: Flammable; Irritant, Harmful, Environmentally hazardous.

Risk phrases:

R 10 Flammable.

R 20/22 Harmful by inhalation and if swallowed.

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

R 41 Risk of serious damage to eyes.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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 20/21 When using do not eat, drink or smoke.

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.

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 product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear.

It is the responsibility of persons in 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 this product. If the recipient subsequently produces formulation(s) containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS. The information contained herein is provided in good faith but makes no representation as to its comprehensiveness or accuracy. A properly trained person using this product intends this document only as a guide to the appropriate handling of the material. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

MERIDIAN AGRITECH MAKES NO REPRESENTATION OR WARRANTIES, EITHER EXPRESSES OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANT ABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MERIDIAN AGRITECH (PTY) LTD WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.