



## Material Safety Date Sheet (MSDS)

### Difazol 25 EC

#### IDENTIFICATION OF THE SUPPLIER:

**AGRO CHEMICALS INDUSTRIES LTD**

**JORDAN/ AMMAN**

**P.O.Box 183020 Amman 11118**

**Fax. +962 6 5548220**

**Tel: +962 6 5548224/5**

**E-mail : info@aci.com.jo**

#### PRODUCT IDENTIFICATION:

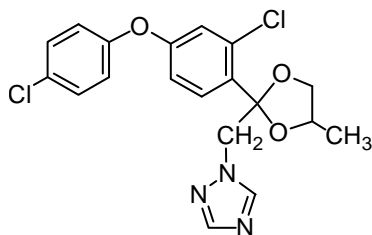
**Common Name:** difenoconazole 25% w/v

**Trade Name:** Difazol 25 EC

**Chemical Name:**

*cis,trans*-3-chloro-4-[4-methyl-2-(1*H*-1,2,4-triazol-1-ylmethyl)-1,3-dioxolan-2-yl]phenyl 4-chlorophenyl ether

**Chemical Formula:**



**Empirical formula:** C<sub>19</sub>H<sub>17</sub>Cl<sub>2</sub>N<sub>3</sub>O<sub>3</sub>

**Molecular Weight:** 406.3





## PRODUCT COMPOSITION:

### *Active ingredient:*

**Difenoconazole..... 25% w/v**

### *Inert Ingredients:*

**Emulsifier.....8% w/v**

**Solvent.....up to 100% w/v**

## HAZARDS IDENTIFICATION:

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## FIRE-FIGHTING MEASURES: -

### **Suitable extinguishing media:**

Extinguishing media - small fires  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.  
Extinguishing media - large fires  
Alcohol-resistant foam

### **Extinguishing media which must not be used for safety reasons:**

Do not use a solid water stream as it may scatter and spread fire.

### **Specific hazards during fire fighting:**

As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion. Exposure to decomposition products may be a hazard to health.

### **Special protective equipment for firefighters: Further information:**

Flash back possible over considerable distance.  
Wear full protective clothing and self-contained breathing apparatus.  
Do not allow run-off from fire fighting to enter drains or water courses.  
Cool closed containers exposed to fire with water spray.





## FIRST-AID MEASURES:

- General advice:** Have the product container, label or Material Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.
- Inhalation:** Move to fresh air.  
If breathing is irregular or stopped, administer artificial respiration.  
Keep patient warm and at rest.  
Call a physician or Poison Control Centre immediately.
- Skin contact:** Take off all contaminated clothing immediately.  
Wash off immediately with plenty of water.  
If skin irritation persists, call a physician.  
Wash contaminated clothing before re-use.
- Eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Remove contact lenses.  
Immediate medical attention is required.
- Ingestion:** If swallowed, seek medical advice immediately and show this container or label.  
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.
- Medical advice:** There is no specific antidote available. Treat symptomatically.  
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

## ACCIDENTAL RELEASE:

- Personal precautions:** Refer to protective measures sections
- Environmental precautions:** Prevent further leakage or spillage if safe to do so.  
Do not flush into surface water or sanitary sewer system.
- Methods for cleaning up:** Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations
- Additional advice:** If the product contaminates rivers and lakes or drains inform respective authorities.





## PERSONAL PROTECTION/SAFTETY:

Components	Exposure limit(s)	Value type	Source
difenoconazole	8 mg/m <sup>3</sup>	8 h TWA	SYNGENTA

### ENGINEERING MEASURES

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

If airborne mists or vapors are generated, use local exhaust ventilation controls.

Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit.

Where necessary, seek additional occupational hygiene advice.

### PERSONAL PROTECTIVE EQUIPMENT

**Protective measures:** The use of technical measures should always have priority over the use of personal protective equipment.

When selecting personal protective equipment, seek appropriate professional advice.

Personal protective equipment should be certified to appropriate standards.

**Respiratory protection:**

A combination gas, vapor and particulate respirator may be necessary until effective technical measures are installed.

Protection provided by air-purifying respirators is limited.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

**Hand protection:**

Chemical resistant gloves should be used.

Gloves should be certified to an appropriate standard.

Gloves should have a minimum breakthrough time that is appropriate to the duration of exposure.

The breakthrough time of gloves varies according to the thickness, material and manufacturer.

Gloves should be changed when breakthrough is suspected.

Suitable material: Nitrile rubber

**Eye protection:**

If eye contact is possible, use tight-fitting chemical safety goggles and a face shield.





### **Skin and body protection:**

Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation / penetration characteristics of the clothing material.

Wash with soap and water after removing protective clothing.

Decontaminate clothing before re-use, or use disposable equipment (suits, aprons, sleeves, boots, etc.)

Wear as appropriate: impervious protective suit

## **HANDLING AND STORAGE:**

### **HANDLING:**

**Advice on safe handling :** No special protective measures against fire required.  
Avoid contact with skin and eyes.  
When using, do not eat, drink or smoke.  
For personal protection section

### **STORAGE:**

#### **Requirements for storage areas and containers:**

No special storage conditions required.  
Keep containers tightly closed in a dry, cool and well-ventilated place.

Keep out of the reach of children.

Keep away from food, drink and animal feedingstuffs.

#### **Other data:**

Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

## **STABILITY AND REACTIVITY**

**Hazardous decomposition products** Combustion or thermal decomposition will evolve toxic and irritant vapors.

**Hazardous reactions** None known.  
Hazardous polymerization does not occur.  
Stable under normal conditions.

## **PHYSICAL -CHEMICAL INFORMATION FOR PRODUCT:**

<b>Appearance</b>	Yellow to brown liquid
<b>Odor</b>	Characteristic odor
<b>PH</b>	6-9
<b>Density</b>	1.02 g/cm <sup>3</sup> at 20 °C





**Emulsification** Stable  
**Properties**  
**Flash Point** 47 oC

**ACUTE TOXICITY (IRRITATION, SENSITISATION ETC.)**

Acute Toxicity	Animal	LD 50 mg/kg body weight	
		Technical	Form
Oral LD50	Rat	1453 mg/kg	> 3442 mg/kg
Dermal (LD50)	Rat	>2000mg/kg	>2000 mg / kg
Inhalation (LC50)	Rat	≥ 3300 mg/m <sup>3</sup>	>5400 mg/m <sup>3</sup>
Skin irritation	Rabbit	>2010 mg/kg Non-irritant	Moderate irritant
Eye irritation	Rabbit	>2010 mg/kg Non-irritant	Moderate irritant
Skin sensitisation	Guinea pig	Non-sensitising	Non-sensitising

**ECOLOGICAL INFORMATION: -**

**Bioaccumulation :** Difenoconazole has high potential to bioaccumulate.  
**Stability in water :** Difenoconazole is persistent in water

**Stability in soil :** Difenoconazole is not persistent in soil.

**Mobility :** Difenoconazole has low mobility in soil.

**Difenoconazole** harmful to fish  
for Rainbow trout 0.8 mg/L  
Bluegill sunfish 1.2 mg/L  
Non toxic to bee  
LD50 (oral) >187 µg/bee;  
LC50 (contact) >100 µg/bee  
Non toxic to bird for mallard ducks LD50 >2150 mg/kg





## Disposal Considerations

**Engineering measures** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

### **Occupational Exposure Limits**

Exposure controls/personal protection

Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.

### **Hygiene measures**

#### **Skin and body**

#### **Personal protective equipment**

Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Wear appropriate respirator when ventilation is inadequate. Lab coat.

**Hands** Chemical resistant gloves.

**Eyes** Safety glasses.

**Respiratory system**

### **Product:**

Do not contaminate ponds, waterways or ditches with chemical or used container.

Do not dispose of waste into sewer.

Where possible recycling is preferred to disposal or incineration.

If recycling is not practicable, dispose of in compliance with local regulations.

### **Contaminated packaging :**

Empty remaining contents

## TRANSPORT INFORMATION:

### **Land transport**

ADR/ RID:

UN-No.: 3082

Class: 9

Danger Label Number : 9

Packaging group III

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
LIQUID, N.O.S.

(DIFENOCONAZOLE AND SOLVENT NAPHTHA )





### **Sea transport**

IMDG:

UN-No.: 3082

Class: 9

Danger Label Number : 9

Packaging group: III

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
LIQUID, N.O.S.

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Marine pollutant : Marine pollutant

### **Air transport**

IATA-DGR

IATA-DGR

UN-No.: 3082

Class: 9

Danger Label Number : 9

Packaging group: III

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
LIQUID, N.O.S.

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