

SAFETY DATA SHEET

Difence

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product Name: Difence
Other identifier: Difenoconazole 250g/L EC
Pesticide Classification: Fungicide
Restrictions on use: Agriculture

Supplier

Enviro Bio-Chem (Pty) Ltd
 Co. Reg. No.: 2013/194774/07
 44 Kerk Street, Lichtenburg
 North West, South Africa 2740

Registration Holder

Erintrade cc t/a RT Chemicals
 Co. Reg. No.: CK2001/036403/23
 44 Kerk Street, Lichtenburg
 North West, South Africa 2740

Telephone: +27 12 006 0063
Fax: 086 541 7948
Website: www.envirobiochem.co.za

24 Hr Emergency Number: Spillage: 0861 000 366

In case of Poisoning:

Griffon Poison Information Centre: +27 82 446 8946
 Tygerberg Hospital: (+27 21) 931 6129
 Poison Emergency Enquiries: (+27 21) 689 5227

2. HAZARD IDENTIFICATION

| UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP] EU & SANS 10234:2008 | | |
|---|-------------------|-------------------|
| Hazard classes | Hazard categories | Hazard statements |
| Flammable Liquid | Category 4 | H227 |
| Aspiration Hazard | Category 1 | H304 |
| Skin irritation | Category 2 | H315 |
| Eye damage | Category 1 | H318 |
| STOT SE | Category 3 | H335 |
| STOT SE | Category 3 | H336 |
| STOT RE | Category 2 | H373 |
| Aquatic Toxicity Acute | Category 1 | H400 |
| Aquatic Toxicity Chronic | Category 1 | H410 |

The most important adverse effects:

The most important adverse physiochemical effects: Combustible liquid.

The most important adverse human health effects: May be fatal if ingested and aspiration occurs. Causes serious eye damage. Causes skin irritation.

Label elements:



Signal word: Danger

Hazard statements:

H227: Combustible liquid.
 H304: May be fatal if swallowed and enters airways.
 H315: Causes skin irritation.
 H318: Causes serious eye damage.
 H335: May cause respiratory irritation.
 H336: May cause drowsiness or dizziness.
 H373: May cause damage to organs through prolonged or repeated exposure.
 H400: Very toxic to aquatic life.
 H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:

P102: Keep out of reach of children.
 P103: Read label before use.
 P210: Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
 P233: Keep container tightly closed.
 P261: Avoid breathing mist, vapours and spray.
 P264: Wash hands, forearms, and face thoroughly after handling.
 P270: Do not eat, drink, or smoke when using this product.
 P271: Use only outdoors in a well-ventilated area.
 P273: Avoid release to the environment.
 P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
 P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P302+P352: IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water [shower].
 P303/361/353: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
 P312: Call a poison centre if you feel unwell.
 P331: Do NOT induce vomiting.
 P332+P313: If skin irritation occurs: Get medical advice/attention.
 P362/364: Take off contaminated clothing and wash it before reuse.
 P391: Collect spillage.
 P403+P235: Store in a well-ventilated place. Keep cool.
 P405: Store locked up.
 P501: Dispose of contents/container in accordance with local/regional/ national/international regulation.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances/ Mixture: Mixture

Composition:

| Chemical Name | CAS | Conc. (m/m%) | Classification EC 1272/2008 |
|----------------------------------|-------------|--------------|---|
| Difenoconazole | 119446-68-3 | 26% | Acute Toxicity Oral (Category 4) H302 Eye irritation (Category 2) H319 Aquatic Acute (Category 1) H400 Aquatic Chronic (Category 1) H410 |
| Cyclohexanone | 108-94-1 | <10% | Flammable liquid (Category 3) H226 Acute Toxicity inhalation (Category 4) H332 |
| Calcium dodecylbenzene sulfonate | 26264-06-2 | <5 % | Acute Toxicity Oral (Category 4) H302 Skin Irritation (Category 2) H315 Eye damage (Category 1) H318 Aquatic Chronic (Category 4) H413 |
| Xylene | 1330-20-7 | <70% | Flammable liquids (Category 3), H226 Acute toxicity, Inhalation (Category 4), H332 Acute toxicity, Dermal (Category 4), H312 Skin irritation (Category 2), H315 Eye irritation (Category 2), H319 STOT SE (Category 3), Respiratory system, H335 |

| | | | |
|--|--|--|--|
| | | | STOT SE (Category 3) CNS, H336 STOT RE (Category 2), H373 Aspiration hazard (Category 1), H304 Aquatic chronic (Category 3), H412 |
|--|--|--|--|

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

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 and consult a doctor / poison control centre.

Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation persists / person feels unwell. Seek medical attention if you feel unwell after inhalation.

Skin: Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Obtain medical attention if irritation persists / person feels unwell.

Eyes: Flush eyes with clean water. Lift eyelids to facilitate irrigation. If present, remove contact lenses and continue rinsing. Seek 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. If swallowed, get emergency medical help immediately.

Anticipated acute effects: May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. May cause drowsiness or dizziness.

Anticipated delayed effects: May cause damage to organs through prolonged or repeated exposure.

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, dry powder, or alcohol-resistant foam for small fires and water spray can be used for larger fires or cooling of unaffected stock but avoid the accumulation of polluted run-off from the site. Use as little water as possible.

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

Specific hazards: Runoff to sewer may create fire or explosion hazard. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Special Fire Fighting Procedures: Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Keep upwind. 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.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with eyes and skin. Do not breathe in spray mist or dust. Ventilate area of spill, 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 with 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 spilled product by diking area with sand or earth. Collect in suitable and properly labelled containers. Absorb with materials such as sand, earth, vermiculite, or diatomaceous earth

Methods and Materials for Clean-up: Contain spilled product by picking up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal. Do not create a powder cloud by using a brush or compressed air. Label containers with the contents and dispose of according to local regulations. Do not place spilled material back in original container. Do not re-use spilled material. To decontaminate the spill area, tools and equipment, wash with water and suitable detergent. Collect washings and add to the drums already collected. Do not flush spilled material or washings into drains or waterways. See section 13 for disposal considerations.

7. HANDLING AND STORAGE

Handling:

Precautions for safe handling: Avoid contact with eyes and skin. 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: Handle in accordance with good industrial hygiene and safety practice. Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Workers should wash hands and face before eating, drinking, and smoking.

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.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits:

| Components | Exposure limits | Type of exposure limit | Source |
|------------|-----------------|--|--|
| Xylene | 150 ppm | Short Term Exposure Limit STEL (15 minutes) | www.osha.gov |

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.

Hand Protection: The use of chemically protective gloves is recommended to prevent against skin contact. Examples of preferred glove barrier materials include Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, Polyvinyl alcohol, Polyvinyl chloride.

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: Employee must wear appropriate protective clothing; 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.

Environmental exposure controls: Prevent product from entry into sewers and water courses.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|-------------------------------------|
| Appearance | Liquid |
| Colour | Slightly yellow transparent liquid. |
| Odour | No data available |
| Odour threshold | No data available |
| pH | 5 - 8 |
| Melting point / freezing point (° C) | No data available |
| Boiling point (° C) | No data available |
| Flash point (° C) | >60°C |
| Evaporation rate | No data available |
| Flammability | Combustible liquid |
| Upper /lower flammability limits | No data available |
| Vapour pressure | No data available |
| Vapour density | No data available |
| Relative density (20°C) | 1.01-1.05 |
| Water solubility (g/l) at 20°C | Emulsifying in water |
| Partition coefficient: n-octanol/water partition coefficient | No data available |
| Auto-ignition temperature (° C) | No data available |
| Decomposition temperature (° C) | No data available |
| Viscosity, dynamic (mPa s) | No data available |
| Explosive properties | Not an explosion hazard |
| Oxidising properties | No data available |
| Explosive limits | No data available |

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: The product is stable under normal conditions.

Possibility of Hazardous Reactions: No information available.

Conditions to Avoid: Extreme heat or exposure to flames.

Incompatible Materials: Should not be applied in combination with strong alkaline products.

Hazardous Decomposition Products: Toxic materials are formed during exposure to high temperatures, (may include but not limited to carbon monoxide and carbon dioxide).

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Calculated according to GHS:

Acute Oral LD₅₀ (rat): > 5579 mg/kg

Acute Dermal LD₅₀ (rat): > 2010 mg/kg

Acute Inhalation LC₅₀ (rat, 4 hr): > 5 mg/l air.

Skin Irritation: Causes skin irritation.

Eye Damage/Irritation: Causes serious eye damage.

Skin Sensitization: Not classified.

Respiratory Sensitization: Not classified.

Reproductive cell mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive toxicity: Not classified.

Specific target organ toxicity – single exposure: May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity – repeated exposure: May cause damage to organs through prolonged or repeated exposure

Aspiration hazard: Not classified.

Chronic Effects (other targets e.g. developmental): Not classified

12. ECOLOGICAL INFORMATION

The product is classified as a marine pollutant.

ECOTOXICITY DATA:

Active ingredient: Difenoconazole tech CAS No. 119446-68-3

Fish

LC₅₀ (96 hr) 1.1 mg/l (rainbow trout); 1.2 mg/l (bluegill sunfish).

Daphnia

EC₅₀ (48 hr) 0.77 mg/l

Algae

Static test EC₅₀ (72h) 0.03 mg/l (*Scenedesmus subspicatus*)

Birds

Acute oral LD₅₀ 9 – 11 days >2150 mg/kg Mallard ducks
Dietary LC₅₀ 8 days 4760 mg/kg diet (bobwhite quail); >5000 mg/kg (mallard ducks)

Bees

Toxicity to bees LD₅₀ (oral) >187 µg/bee.
Toxicity to bees LD₅₀ (contact) >100 µg/bee.

Worms

LC₅₀ (14d)

>610 mg/kg soil (*Eisenia fetida*)

Biodegradability: The compound is hydrolytically stable across pH 5–9 (25°C) and dissipates slowly in soil, with DT₅₀ ranging from 3 months to 1 year depending on the application rate. In sterile natural water, it undergoes indirect photolysis with a DT₅₀ of 4.6 days. In laboratory water–sediment systems, dissipation from the water phase is rapid (DT₅₀ 1–3 days), but degradation in the whole system is slower, with an overall DT₅₀ of approximately 8 months.

Bioaccumulation: With a log K_{ow} of 4.36, the compound has the potential for moderate bioaccumulation, though its strong adsorption to soil may limit uptake.

Mobility: The compound is practically immobile in soil, exhibiting strong adsorption to soil particles (mean K_{oc,ads} 4545 ml/g), and has a low potential to leach below the topsoil layer.

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 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.

Package Product Wastes: Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is cleaned, reconditioned or destroyed. Thereafter, rinse the container three times with a volume of water equal to a minimum of one third of that of the container. Puncture the triple rinsed container and dispose of via an approved collector or recycler (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.

14. TRANSPORT INFORMATION

| | |
|-------------------------------------|--|
| UN Number | 3082 |
| Road Transport ADR/IRD: | |
| Class: | 9 |
| Packaging group: | III |
| UN proper Shipping Name: | Environmentally Hazardous Substance, Liquid, N.O.S. (Difenoconazole 250 g/l) |
| Maritime Transport IMDG/IMO: | |
| Class: | 9 |
| Packaging group: | III |
| UN proper Shipping Name: | Environmentally Hazardous Substance, Liquid, N.O.S. (Difenoconazole 250 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. (Difenoconazole 250 g/l) |

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation for the mixture:

Relevant information regarding authorization: Occupational Health and Safety Act 1993. Regulation for Hazardous Chemical Agents, 2021. UN Recommendations on the Transport of Dangerous Goods Model

Regulations Rev. 21 (2019), Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Rev 8, 2019.

Relevant information regarding restrictions: None.

EU regulation: Regulation EC1272/2008 (EU-GHS/CLP)

Other national regulations: National Road Traffic Act, 1996 (ACT NO. 93 of 1996). SANS 10228:2012- The identification and classification of dangerous goods for transport by road and rail modes. National Environmental Management Waste Act 59 of 2008. Act 36 of 1947 of the Republic of South Africa. This product is registered under it is a violation of South African law to use this product in any manner inconsistent with its approved labelling. Read and follow all label directions

Chemical Safety Assessment carried out? No

16. OTHER INFORMATION

Note: Read and understand all the information on the product label before using the product.

Other hazard statements, abbreviations and explanations:

H226: Flammable liquid and vapour.

H304: May be fatal if swallowed and enters airways.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H335: May cause respiratory irritation.

H336: May cause drowsiness or dizziness.

H373: May cause damage to organs through prolonged or repeated exposure.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

IATA: International Air Transport Association.

IBC: International Bulk Chemical.

ICAO: International Civil Aviation Organization.

IMDG: International Maritime Dangerous Goods

IMO: International Maritime Organization.

LD50 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.

OEL/RL: Occupational exposure limit-recommended limit.

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

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For detailed information on revisions, contact the registration holder.