



INDOFIL INDUSTRIES LIMITED
 KOLSHET, OFF SWAMI VIVEKANAND ROAD,
 AZAD NAGAR, SANDOZ BAUG P.O.,
 THANE – 400 607. MAHARASHTRA (INDIA)
 TEL. NO. : 00-91-22- 67999100
 FAX NO. : 00-91-22-2589 83 57 / 59

MATERIAL SAFETY DATA SHEET

| SECTION 1: PRODUCT IDENTIFICATION | | |
|--|---|--|
| Chemical Name | DIFENOCONAZOLE 25% EC IUPAC: 3-chloro-4-[(2 <i>RS</i> ,4 <i>RS</i> ;2 <i>RS</i> ,4 <i>SR</i>)-4-methyl-2-(1 <i>H</i> -1,2,4-triazol-1-ylmethyl)-1,3-dioxolan-2-yl]phenyl 4-chlorophenyl ether | Company Identification INDOFIL INDUSTRIES LIMITED KOLSHET, OFF SWAMI VIVEKANAND ROAD, AZAD NAGAR, SANDOZ BAUG P.O., THANE – 400 607. MAHARASHTRA (INDIA) TEL. NO. : 00-91-22- 67999100 FAX NO. : 00-91-22-2589 83 57 / 59 |
| Trade Name | | |
| Synonyms | DIFENOCONAZOLE | GROUP: Triazole |
| CAS Number | 119446-68-3 | CLASS : FUNGICIDE |
| Formula | C ₁₉ H ₁₇ Cl ₂ N ₃ O ₃ | |
| SECTION 2: COMPOSITION / INFORMATION OF INGREDIENTS | | |
| COMPONENT NAME | CAS REGISTRY NO | CONCENTRATION |
| DIFENOCONAZOLE | 119446-68-3 | 25 % |
| Inert ingredients | ----- | 75% |
| SECTION 3: HAZARDS IDENTIFICATION | | |
| EMERGENCY OVERVIEW | | |
| Physical state : Liquid | | |
| Colour : Yellow To Brown | | |
| INGESTION : Harmful if swallowed | | |
| INHALATION : Harmful if inhaled | | |
| EYE CONTACT : May cause irritation to eyes | | |
| SKIN CONTACT: May cause irritation | | |
| DELAYED EFFECTS: No delayed effects known. | | |

IMMEDIATE HEALTH EFFECTS

| | |
|---------------------|---|
| Eye contact | Slightly irritation to eyes |
| Skin contact | Irritation to skin. May cause sensitization by skin contact |
| Ingestion | Harmful if swallowed |
| Inhalation | Harmful if inhaled |

DELAYED OR OTHER HEALTH EFFECTS

| | | |
|--|--|--|
| Target organs | No data . | |
| An "X" in the box adjacent to the hazard title indicates OSHA Hazard classification. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication standard (29 CFR 1910.1200) | | |
| OSHA Health Hazard Classification | OSHA Physical Hazard Classification | |

| | | | |
|------------------------------------|---------------------------------------|---|---|
| Toxic <input type="checkbox"/> | Highly Toxic <input type="checkbox"/> | Flammable <input type="checkbox"/> | Oxidizer <input type="checkbox"/> |
| Irritant <input type="checkbox"/> | Sensitizer <input type="checkbox"/> | Combustible <input type="checkbox"/> | |
| Corrosive <input type="checkbox"/> | Carcinogenic <input type="checkbox"/> | Explosive <input type="checkbox"/> | Organic Peroxide <input type="checkbox"/> |
| | | Pyrophoric <input type="checkbox"/> | unstable <input type="checkbox"/> |
| | | Organic peroxide <input type="checkbox"/> | water-reactive <input type="checkbox"/> |

SECTION 4: FIRST AID MEASURES

| | |
|---------------------------|--|
| Eye | Irrigate the eyes with large amount of water or normal saline occasionally lifting upper and lower lids until no evidence of chemical remains and obtain a medical help. |
| Skin | Remove contaminated clothing and shoes immediately. Wash contaminated area with soap or mild detergent and large amount of water until no effects of chemical remains. If symptoms persist get medical help. |
| Ingestion | If swallowed, set medical attention immediately. Do not induce vomiting. |
| Inhalation | Remove the patient from the exposure area to fresh air immediately. If breathing has stopped perform the artificial respiration. Keep person warm and rest. Get medical attention immediately. |
| Notes to physician | No specific antidote. Treat symptomatically. |

SECTION 5: FIRE FIGHTING MEASURES

| | | | |
|---|-----------|-------------------|-----------------|
| NFPA Flammability Classification | ----- | | |
| NFPA RATINGS | Health: 1 | Flammability : -- | Reactivity:---- |
| OSHA classification | No data | | |

| | |
|--|---|
| Flash point | > 24°C |
| Flammability (Explosive limits) | NA |
| Auto ignition Temperature | Not available. |
| Hazardous Combustion products | This product contains combustible organic components that may burn and decompose during a fire producing dense black smoke containing hazardous products of combustion. Exposure to decomposition products may be a hazard to health. Flash back possible over considerable distance. |
| Extinguishing Media | For small fires use water spray, alcohol-resistant foam, dry chemical or carbon dioxide extinguisher. DO NOT use direct jet of water. For larger fire, use water spray, fog or alcohol resistant standard foam. |
| Protection of Fire Fighters | Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. |
| Special Properties | Avoid breathing fumes from fire exposed material. |

SECTION 6: ACCIDENTAL RELEASE MEASURES

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| Protective Measures | Ensure suitable personal protection during removal of spillages. This means wearing a face mask that gives protection against organic vapours, eye protection, chemically resistant gloves, boots and coveralls. |
| Spill Management | Absorb the material in the sand, soil, diatomaceous earth or suitable absorbent. Place in suitable material and remove to safe place or dispose of in an incinerator approved for chemicals. |

SECTION 7: HANDLING AND STORAGE

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|---|---|
| Handling & Storage procedure | Use appropriate (impervious) clothing, gloves and closed footwear to prevent the repeated contact with skin. Use flash proof and dust resistant goggles to prevent the contact with eyes. Keep the product in original container tightly closed and correctly labeled. Store in suitable, cool, dry, well ventilated place under lock and key; away from the reach of the children, animals, food and animal feeding stuffs. Store away from the incompatible substances and source of ignition. Do not store for prolonged periods in direct sunlight. |
|---|---|

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

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| Engineering controls | Ventilation: Investigate engineering techniques to reduce exposures. Provide ventilation if necessary to minimize exposures. Use mechanical exhaust ventilation at sources of air contamination such as open process equipment. |
| Personal Protective Equipment | Eye / face Protection: Safety Glasses or goggles. Skin protection: Avoid skin contact. Rubber gloves should be worn whenever this material is handled. Wash hands with clean water. Body protection: Avoid skin contact Wear impervious clothing and closed foot ware. Respiratory Protection: Wear suitable mask . |

Occupational exposure limits (exposure limit information)

| Component | Limit | TWA | STEL | Ceiling | Notation |
|----------------|-------|---------|---------|---------|----------|
| Difenoconazole | OSHA | No data | No data | No data | No data |
| | ACGIH | | | | |

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|--|-----------------------------|----------------------------|-------------------------|
| Physical state | Liquid | Colour | Yellow To Brown |
| Odour | Solvent | pH | 4 To 10 (1% in water) |
| Specific gravity Bulk density | 0.99-1.01 g/cm ³ | Solubility in water | Forms emulsion in water |
| Vapor pressure | Not applicable | Vapor density | Not applicable |
| Viscosity | Not applicable | Boiling point | > 220°C |
| Melting / Freezing point | 76°C Technical | Evaporation rate | Not applicable |

SECTION 10: STABILITY AND REACTIVITY

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| Chemical stability | This material is chemically stable under normal and anticipated storage and handling conditions. |
| Conditions to Avoid | Excessive temperatures. |
| Material Incompatibility | Incompatible with the alkaline material. |
| Hazardous Decomposition Products | Decomposition will evolve toxic and irritant vapors. |
| Hazardous Polymerization | Hazardous polymerization does not occur |

SECTION 11: TOXICOLOGICAL INFORMATION

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| Acute toxicity (Assessment largely or completely based on data for active substance) | |
| Acute Oral toxicity | LD ₅₀ : 1453 mg/kg for rats |
| Acute Dermal toxicity | LD ₅₀ > 2000 mg/kg for rats |
| Acute Inhalation toxicity | >2.065 mg/l |
| Eye irritation (Rabbit) : Non-irritating | |
| Skin irritation(Rabbit) : Non-irritating | |
| Skin Sensitization(Guinea Pig): Non-sensitising to skin | |

SECTION 12: ECOLOGICAL INFORMATION

| | |
|---|---|
| (Assessment largely or completely based on data for active substance) | |
| Eco-toxicity: | |
| Fish LC ₅₀ (96 h) | Rainbow Trout 0.81 mg/l ; Bluegill sunfish 1.2 mg/l |

| | |
|----------------------------------|--|
| Algae EC ₅₀ (72 hr) | <i>Scenedesmus subspicatus</i> 0.032-1.2 mg /l |
| Daphnia EC ₅₀ (48 hr) | 0.77 mg/l |
| Bird | |
| Acute Oral, LD ₅₀ | Japanese quail > 2000 mg/kg |
| | Mallard duck > 2150 mg/kg |
| | |

| | |
|----------------------------|---|
| Honey Bee | Non-toxic to bees |
| LD ₅₀ (Oral) | > 187 µg/bee; |
| LD ₅₀ (Contact) | >1 00 µg/bee. |
| Earth worm | |
| LC ₅₀ (14 d) | 610 mg/kg |
| Environmental Fate | After oral administration, it rapidly eliminated practically to entirety, with urine and faeces. Residues in tissues were not significant and there was no evidence for accumulation. |

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL PROCEDURES: Waste disposal should be in accordance with existing federal, state and local environmental regulations. Dispose of empty, used containers in approved incineration plant in approved land filling area or in a disposal pit away from desirable plants and their roots and water courses. On-site disposal of undiluted product is unacceptable

SECTION 14: TRANSPORT INFORMATION

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|-------------------------|---|
| UN number | 3082 |
| Shipping Name | Environmentally Hazardous Substance, Liquid, N.O.S. (Difenoconazole) |
| Class | 9 |
| Packaging group | III |
| Marine pollutant | Yes |

SECTION 15: REGULATORY INFORMATION

| | |
|---|--|
| Work place classification | Hazard categories under criteria of SARA Title III rules (40 CFR part 370) Immediate acute health Y Delayed chronic health N Fire N Reactive N Sudden Release of pressure N |
| SARA TITLE 3 : SECTION 311/312 Hazard Identification | Harmful, Toxic |
| SARA TITLE 3 : SECTION 302/304 Emergency planning and notification | ----- |
| SARA TITLE 3 : SECTION 313 Toxic chemical notification and Release | This product does contain chemicals which are defined as toxic chemicals under and subject to the reporting requirements of, Section 313 of title III of the superfund |

| | |
|-------------------------------|--|
| reporting | amendments and Reauthorization act of 1986 and 40 CFR part 372 |
| CERCLA (40 CFR 302.4) | |
| Waste classification | No data |
| Clean Air Act | No data |

SECTION 16: OTHER INFORMATION

| | | | |
|---------------------|---|--------------------|-----------------|
| NFPA RATINGS | Health : 1 | Flammability : -- | Reactivity :--- |
| HMIS RATINGS | Health : ---- | Flammability :---- | Reactivity :--- |
| | 0 = Least 1= slight 2= Moderate 3= High 4=Extreme | | |

ABBREVIATIONS

| | |
|-------|---|
| STEL | Short term exposure limit |
| ACGIH | American conference of Government Industrial Hygienists |
| NIOSH | National institute of safety and health |
| SARA | Super fund Amendments and Reauthorization Act |
| TWA | Time weighted average |
| OSHA | Occupational safety and health |
| NFPA | National Fire protection agency |
| HMIS | Hazardous Materials information system |
| RCRA | Resource conservation Recovery act |
| TSCA | Toxic substance Control Act |
| WHMIS | Work place Hazardous Materials information system |
| IRAC | International Agency for Research on Cancer |

MANUFACTURE'S / SUPPLIER'S DATA

| | | | | |
|---|--------------------|---|------------------------|--|
| Name of Firm : INDOFIL INDUSTRIES LIMITED | | | | |
| Mailing Address : Kolshet, Off Swami Vivekanand Road, Azad nagar, Sandoz Baug P.O. Thane – 400 607. | | Gat No. 194, Village – Gahunje, Tal. Maval, Dist. Pune. | | |
| Telephone 67999100 | Telex | | Telephone 020 767 5084 | |
| Fax 2589 8357 | Telegraphic Code | | Fax 22767 5083 | |
| Local Bodies Involved | Collector of Thane | | | |

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