



INDOFIL INDUSTRIELS 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

2-R&D-MSDS- FP- 458

MATERIAL SAFET DATA SHEET

| SECTION 1. PRODUCT IDENTIFICATION | | |
|--|--|---|
| Chemical Name | Zinc ethylene Bis Dithiocarbamate + Hexaconazole | 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 | AMITY | |
| Synonyms | Zineb 68%+Hexaconazole 4% WP | Chemical classification: Alkylene Bis dithiocarbamate fungicide Triazole fungicide |
| IUPAC | Zineb: zinc ethylenebis(dithiocarbamate) (polymeric) Hexaconazole: (RS)-2-(2,4- dichlorophenyl)-1-(1H-1,2,4- triazol-1-yl) hexan-2-ol | |
| CAS Number | 12122-67-7 79983-71-4 | |
| Formula | C ₄ H ₆ N ₂ S ₄ Zn C ₁₄ H ₁₇ Cl ₂ N ₃ O | |
| SECTION 2. COMPOSITION / INFORMATION OF INGREDIENTS | | |
| COMPONENT NAME | CAS REGISTRY NO. | CONCENTRATION |
| Zineb | 12122-67-7 | 68% |
| Hexaconazole | 79983-71-4 | 4% |
| Other ingredients(Surfactants) | ----- | 28% |

SECTION 3. HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

Physical state : Powder
 Colour : Grey colour Powder
 Odor : Musty Odour
 Harmful or fatal if swallowed - can enter lungs and cause damage.
 Contact can cause eye or skin irritation.

IMMEDIATE HEALTH EFFECTS

| | |
|----------------------------|---|
| Eye contact | Moderately irritation to eyes. |
| Skin contact | Repeated or prolonged contact can cause irritation or dermatitis. |
| Ingestion | Swallowing this material may be harmful. |
| Inhalation | Dust can irritate the nose and throat. |
| Emergency Treatment | Move the subject to fresh air, rest and seek medical aid. |

DELAYED OR OTHER HEALTH EFFECTS

| | |
|---------------|-------|
| Target organs | ----- |
|---------------|-------|

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

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| Eye | Flush eyes with plenty of water for at least 15 minutes and see doctor. |
| Skin | Remove contaminated clothes, wash skin with soap and water. |
| Ingestion | If swallowed dilute by giving 2 glasses of water to drink and call a doctor. Never give any by mouth to an unconscious person. |
| Inhalation | Move subject to fresh air and rest. |
| Notes to physician | Antidote none known. |

| SECTION 5 : FIRE FIGHTING MEASURES | |
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| NFPA Flammability Classification | ----- |
| NFPA RATINGS | Health: 1 Flammability :1 Reactivity: 1 |
| OSHA classification | |
| Flash point | Not Applicable |
| Flammability (Explosive limits) | No data |
| Auto ignition Temperature | No data |
| Hazardous Combustion products | Hydrogen Sulfide, Carbon Disulfide, and oxides of carbon, nitrogen and sulphur |
| Extinguishing Media | Dry chemical powder, CO ₂ , Water, Water Spray |
| Protection of Fire Fighters | Wear NIOSH / MSHA approved self-contained breathing apparatus and full protective clothing. Water can release flammable carbon disulfide from Zineb. Contain water run-off. |
| Special Properties | Use Water spray to cool container. Wear self contained breathing apparatus. |
| Unusual Hazards | Fire produces toxic and flammable products. Hydrogen sulfide, CS ₂ , Oxides of Sulfur, Nitrogen and Carbon. |
| SECTION 6 : ACCIDENTAL RELEASE MEASURES | |
| Protective Measures | Eliminate all sources of ignition in the vicinity of the spill. If this material is released into the work area, evacuate the area immediately. |
| Spill Management | Scoop or shovel solid material into a suitable container. Keep dust to minimum. Flush cleaned area with water to chemical sewers. Keep spills and cleaning runoffs of municipal sewers and open bodies of water. |

| SECTION 7 : HANDLING AND STORAGE | |
|---|--|
| Handling | A spill can cause an immediate fire or explosion hazard. Keep containers closed and do not handle or store near heat, sparks or any other potential ignition sources. Use only with adequate ventilation and personal protection. Avoid contact with eyes, skin, and clothing. Prevent contact with food and tobacco products. Do not reuse empty bag. |
| Storage | Store in a dry shaded, well ventilated area. Do not allow it to become wet or over heated in storage because degradation of the material may occur and fire may be result. Provide plenty of ventilation to dissipate heat. |

| SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION | |
|---|---|
| Engineering controls | Provide exhaust ventilation or other engineering controls. An emergency eye wash station and safety shower should be located near the work-station. |
| Personal Protective Equipment | Eye Protection: Wear eye protection such as safety glasses, chemical goggles, or face shields if engineering controls or work practices are not adequate to prevent eye contact. Contact lenses should not be worn when working with this chemical |

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| | <p>Hand protection: Avoid skin contact .Use gloves. Wash hands with plenty of mild soap and water before eating, drinking, use of toilet facilities or leaving work.</p> <p>Body protection: Avoid skin contact. Wear long-sleeved fire-retardant garments. Additional chemical-resistant protective gear may be required. This may include an apron, boots and additional facial protection.</p> <p>Respiratory Protection: Dust/mist filtering respirator or a NIOSH approved respirator.</p> <p>Work practices: users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible wash thoroughly and change into clean clothing. Deluge safety shower and eye wash station should be located in work area</p> |
|--|--|

Occupational exposure limits

| Component | Limit | | |
|--------------|-------|---|--|
| Zineb | ACGIH | Not determined (threshold limit value) | |
| Zineb | OSHA | Not determined (permissible exposure limit) | |
| Hexaconazole | OSHA | Not determined | |
| Hexaconazole | ACGIH | Not determined | |

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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|-------------------------------------|-------------|------------------------------|---------------------------|
| Physical state | Solid | Appearance | Grey colour Powder |
| Odor | Musty odour | pH (1%) | 6 To 7.5 |
| Specific gravity (Water = 1) | NA | Solubility in water @ | Forms suspension in water |
| Vapor pressure @ (mm Hg) | NA | Vapor density (Air=1) | NA |
| Viscosity | -- | Boiling point | NA |
| Melting point (°C) | NA | | |

SECTION 10: STABILITY AND REACTIVITY

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|---|--|
| Chemical stability | Stable. |
| Conditions to Avoid | Keep dry and avoid excessive heat and ignition sources. |
| Hazardous Decomposition Products | Hydrogen Sulfide, Carbon Disulfide, Oxides of carbon, Nitrogen and Sulphur |
| Hazardous Polymerization | Data not available. |

SECTION 11: TOXICOLOGICAL INFORMATION

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| Acute Oral toxicity | GHS Category 5 |
| Acute Dermal toxicity | >2000 mg/kg (Rat) |

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|---|------------|
| Acute Inhalation toxicity | >2.28 mg/l |
| Eye irritation (Rabbit) : Minimally Irritating | |
| Skin irritation (Rabbit) : Slight Irritant | |
| Skin Sensitization (Guinea Pig) : Non-skin Sensitizer | |

SECTION 12: ECOLOGICAL INFORMATION

(Assessment largely or completely based on data for Zineb and Hexaconazole Active Substance)

Aquatic toxicity:

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|------------------------------|--|
| Fish LC₅₀ | For perch 2, roach 6-8 mg/l – Zineb Rainbow trout 3.4, mirror carp 5.94, bluegill sunfish 5.1 mg/l Hexaconazole |
| Bees LD₅₀ | 100 mg/bee (oral and contact) – Zineb >100 mg/kg (oral and contact) (24 h) - Hexaconazole |
| Bird | |
| Acute Oral, LD ₅₀ | Mallard duck > 4000 mg/kg – Hexaconazole |
| Earth worm | |
| LC ₅₀ (14 d) | >1000 mg/kg dry soil - Hexaconazole |
| Environmental fate | Zineb: Ethylenethiourea is the major metabolite in plants. Ethylenethiuram monosulfide and presumably ethylenethiuram disulfide and sulfur are also formed. Hexaconazole: Readily excreted by mammals, with no significant retention in organs or tissues. Rapidly degraded in soils in laboratory tests. |

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

| | |
|-----------------------------------|--|
| | Not regulated as a hazardous material by any mode of transportation. It is not a marine pollutant. Export water (IMO) : Not regulated Air (ICAO / IATA) : Not regulated |
| DOT Shipping Name | DOT Technical Name: Zineb Technical and Hexaconazole Technical |
| DOT Hazard class | Class: 9 UN Number: 3077 |
| DOT identification number | No data |
| DOT Packing Group | III |
| DOT additional information | Classified as non Dangerous goods for transport by road and Rail. |

| SECTION 15: REGULATORY INFORMATION | |
|---|----------------|
| TSCA Inventory | No data |
| SARA 311/312 Hazard Identification | No data |
| SARA 302/304 Emergency planning and notification | No data |
| SARA 313 Toxic chemical notification and Release reporting | No data |
| CERCLA | No data |
| Clean air act (CAA) | Not applicable |

| SECTION 16: OTHER INFORMATION | | | |
|--------------------------------------|---|-----------------|---------------|
| NFPA RATINGS | Health : 1 | Flammability :1 | Reactivity :1 |
| HMIS RATINGS | Health : 1 | Flammability :1 | Reactivity :1 |
| | 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 | | | |
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| Telephone 67999100 | Telex | | |
| Fax 589 8357 | Telegraphic Code | | |
| Local Bodies Involved | Collector of Thane | | |

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