



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

2-R&D-MSDS-FP-417

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT IDENTIFICATION

Chemical Name	MANCOZEB 75% WP IUPAC : Manganese ethylene (dithiocarbamate) (polymeric) complex with Zinc salt	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- 67999100 , FAX NO. : 00-91-22-2589 83 57 / 59
Trade Name	INDOFIL M-45 75 WP	
Synonyms	MANCOZEB	GROUP : Alkylene bis dithiocarbamate
CAS Number	8018-01-7	CLASS : Fungicide
Formula	$(C_4H_6N_2MnS_4)_x(Zn)_y$	

SECTION 2: COMPOSITION / INFORMATION OF INGREDIENTS

COMPONENT NAME	CAS REGISTRY NO	CONCENTRATION
Mancozeb	8018-01-7	75%
Other Ingredients	----	25%

SECTION 3: HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

Physical state : Powder
Colour : Yellow to Yellowish Green
INGESTION: Harmful if swallowed.
INHALATION: Harmful if inhaled.
EYE CONTACT: May cause eye irritation.
SKIN CONTACT: May cause irritation.
DELAYED EFFECTS: No delayed effects known.

IMMEDIATE HEALTH EFFECTS

Eye contact	Slightly irritation to eyes.
Skin contact	Moderately irritating to skin.
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	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
Skin	In case of contact, flush skin with water. Wash clothing before reuse. Call a physician if irritation occurs.
Ingestion	Call physician immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by doctor. Do not given anything by mouth to an unconscious person.
Inhalation	Move person to fresh air. If person is not breathing, then give artificial respiration, preferably mouth-to-mouth if possible. Call doctor for further treatment.
Notes to physician	No specific antidote.

SECTION 5: FIRE FIGHTING MEASURES

NFPA Flammability Classification	-----
NFPA RATINGS	Health: 1 Flammability : 1 Reactivity:----
OSHA classification	No data
Flash point	Not applicable
Flammability (Explosive limits)	NA
Auto ignition Temperature	No data

Hazardous Combustion products	No data
Extinguishing Media	Use Water spray, Carbon Dioxide, foam or dry chemical.
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

Protective Measures	Appropriate protective equipment must be worn when handling a spill of this material.
Spill Management	<p>If the spill occurs out of doors, cover the spilled product with a moisture-proof material to prevent degradation. If the covered material is in direct sunlight, measures should be taken to protect it from solar heat, which may cause degradation to commence or accelerate.</p> <p>For small spills, sweep or scoop up material to suitable container in a manner that does not form an air-borne dust and store collected material as a slurry in water in secure containers until safe disposal can be arranged. Do not vacuum up spilled material as the dust created may form an explosive mixture when combined with air.</p> <p>Do not allow spilled material to contaminate water supplies.</p>

SECTION 7: HANDLING AND STORAGE

Handling & Storage procedure	<p>Keep container closed. Do not handle this product near food, feed or water. Keep out of reach of children or animals. Avoid breathing, ingestion and contact with eyes, skin or clothing of dust. Remove and wash contaminated clothing before reuse. Contaminated clothing should be washed separately from domestic laundry and line dried. Users should wash hands and face before eating, drinking, chewing gum, using tobacco or the toilet.</p> <p>This material is not hazardous under normal storage conditions. However material should be stored in closed containers, in a secure area to prevent container damage and subsequent spillage. Store in original container. If allowed to become wet the product will deteriorate and represent a fire hazard.</p>
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SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

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	<p>Eye / face Protection: Safety Glasses or goggles.</p> <p>Skin protection: Avoid skin contact. Rubber gloves should be worn whenever this material is handled. Wash hands with clean water.</p> <p>Body protection: Avoid skin contact. Wear long-sleeved fire-retardant garments.</p> <p>Respiratory Protection: Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and or</p>

	its components. For emergency and other conditions where there may be a potential for significant exposure, use an approved full-face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.
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Occupational exposure limits (exposure limit information)

Component	Limit	TWA	STEL	Ceiling	Notation
Mancozeb	OSHA ACGIH	No data	No data	For manganese compounds 5 mg/m ³	No data

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Powder	Colour	Yellow to Yellowish Green
Odor	Odorless	pH (1%)	6.5 to 7.5
Specific gravity	Not applicable	Solubility in water	Forms Suspension in water
Bulk density	0.35-0.50 gm/ml	Vapor density	No data
Vapor pressure	Not applicable	Boiling point	Not applicable
Viscosity	Not applicable	Evaporation rate	Not applicable
Melting / Freezing point	Decomposes before melting		

SECTION 10: STABILITY AND REACTIVITY

Chemical stability	This material is chemically stable under normal and anticipated storage and handling conditions.
Conditions to Avoid	Excessive temperatures.
Material Incompatibility	Strong acids, strong oxidizers, dampness, strong sequestering agent, quaternary ammonium compounds
Hazardous Decomposition Products	Thermal decomposition may yield toxic, flammable gases, including carbon disulfide, hydrogen sulfide and oxides of carbon, nitrogen, sulfur and ethylene thiourea
Hazardous Polymerization	Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Oral toxicity	LD50 > 5000 mg/kg for rats
Acute Dermal toxicity	Rat LD50 > 2000 mg/kg
Acute Inhalation toxicity	> 2.86 mg/L
Eye irritation: non-irritating to rabbits. Skin irritation: non-irritant to rabbits.	

SECTION 12: ECOLOGICAL INFORMATION	
Ecotoxicity	Mancozeb is not hazardous to bees and is slightly toxic to birds. Mancozeb is poisonous to warm-water fish and at least moderately toxic to cold-water fish. ETU is highly toxic to aquatic organisms.
Environmental fate	No data

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	
	Marine pollutant : no
DOT Shipping Name	DOT Technical Name : Mancozeb
DOT Hazard class	9 UN number 3077
DOT identification number	Packaging group 3
DOT additional information	Classified as non Dangerous goods for transport by road and Rail.

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 Y Reactive Y Sudden Release of pressure N
SARA TITLE 3 : SECTION 311/312 Hazard Identification	-----
SARA TITLE 3 : SECTION 302/304 Emergency planning and notification	-----
SARA TITLE 3 : SECTION 313 Toxic chemical notification and Release reporting	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 amendments and Reauthorization act of 1986 and 40 CFR part 372 Ethylene thiourea
CERCLA (40 CFR 302.4)	-----
Waste classification	No data
Clean Air Act	No data

SECTION 16: OTHER INFORMATION

NFPA RATINGS	Health : 1	Flammability : 1	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

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Fax 2589 8357	Fax		Fax 22767 5083	
Local Bodies Involved	Collector of Thane			

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