

**INDOFIL INDUSTRIES LIMITED**

KOLSHET, OFF SWAMI VIVEKANAND ROAD,
 AZAD NAGAR, SANDOZ BAUG P.O.,
 THANE – 400607. MAHARASHTRA (INDIA)
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MATERIAL SAFETY DATA SHEET

2-R&D-MSDS-AGRO-FP-468

SECTION 1. PRODUCT IDENTIFICATION

Chemical Name	CARBENDAZIM 25% + MANCOZEB 50% WS	Company Identification INDOFIL INDUSTRIES LIMITED KOLSHET, OFF SWAMI VIVEKANAND ROAD, AZAD NAGAR, SANDOZ BAUG P.O., THANE – 400 607. MAHARASHTRA (INDIA) TEL. NO. : 00-91-22-6799 9100 FAX NO. : 00-91-22-2589 83 57 / 59
Trade Name	SPRINT	
Synonyms	Carbendazim, Mancozeb	GROUP: Benzimidazole Fungicide Alkylene bis dithiocarbamate Fungicide
IUPAC	Methyl benzimidazol-2-ylcarbamate Manganese ethylene (dithiocarbamate) (polymeric) complex with zinc salt	CLASS: Fungicide
CAS Number	10605-21-7 and 8018-01-7	
Formula	$C_9 H_9 N_3 O_2$ $(C_4 H_6 N_2 Mn S_4)_x (Zn)_y$	

SECTION 2. COMPOSITION / INFORMATION OF INGREDIENTS

COMPONENT NAME	CAS REGISTRY NO	CONCENTRATION
Mancozeb	8018-01-7	50%
Carbendazim	10605-21-7	25%
Other ingredients	-	25%

SECTION 3. HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

Physical state : Powder

Colour : Blue Powder

Odor : Characteristics

Harmful or fatal if swallowed – It 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. Swallowing this material may cause stomach or intestinal upset with pain , nausea , and / or diarrhea. This material can get into the lungs during swallowing or vomiting. Ingestion can cause temporary CNS depression, drowsiness, and changes in the liver and weight loss.
Inhalation	Inhalation of vapors 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	-----
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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
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Toxic <input type="checkbox"/>	Highly Toxic <input type="checkbox"/>	Flammable <input checked="" 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	Flush eyes with plenty of water for at least 15 minutes and see doctor
Skin	Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion	Call a physician or the poison control center immediately. Drink one or two glasses of water and induce vomiting by touching the back of the throat with finger. Repeat until vomit fluid is clear. Do not induce vomiting or give anything by mouth to an unconscious person.
Inhalation	Immediately move victim to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention if breathing difficulties continue.
Notes to physician	Antidote not known

SECTION 5 : FIRE FIGHTING MEASURES

NFPA Flammability Classification	-----
NFPA RATINGS	Health: 1 Flammability: 1 Reactivity: 1
OSHA classification	
Flash point	Not applicable
Flammability (Explosive limits)	Not applicable
Auto ignition Temperature (°C)	No data
Hazardous Combustion products	No data
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 Mancozeb. Contain water run-off.
Special Properties	Unusual fire and explosion hazards In fire situations, toxic oxides of nitrogen, oxides of sulfur, ethylene thiourea and toxic and flammable carbon disulfide can be released.
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	Wear a NIOSH/MSHA approved dust respirator and all appropriate protective equipment. Do not touch or walk through spilled material. Prevent spilled material from entering waterways, sewers, basements or confined areas. Clean up spill as soon as possible. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

SECTION 7 : HANDLING AND STORAGE

Handling	<p>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</p> <p>When performing repairs and maintenance on contaminated equipment, Keep unnecessary persons away from area. Eliminate all potential ignition sources. Use gloves constructed of impervious materials and protective clothing if direct contact is anticipated. Provide adequate ventilation. Promptly remove contaminated clothing. Wash exposed skin thoroughly with soap and water after handling.</p>
Storage	<p>Store and transport in accordance with all applicable laws. Keep containers tightly closed and store in a cool, dry, well-ventilated place, plainly labeled and out of closed vehicles. Keep away from all ignition sources. All electrical equipment in areas where this material is stored or handled should be installed in accordance with applicable regulatory requirements and the national electrical code.</p>

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls	<p>Provide exhaust ventilation or other engineering controls. An emergency eye wash station and safety shower should be located near the work-station.</p>
Personal Protective Equipment	<p>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</p> <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: Wear suitable respirators where exposure limits are exceed. An air-supplied respiratory protection must confirm to OSHO rules as specified in 29 CFR1910.134.</p> <p>Skin Protection: Wear insulated neoprene gloves for handling the material select in accordance with OSHO 29 CFR 1910.133.</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		
Mancozeb	ACGIH	Not determined (threshold limit value)	
Mancozeb	OSHA	Not determined (Permissible exposure limit)	
Carbendazim	OSHA	Not determined	
Carbendazim	ACGIH	Not determined	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid Powder	Appearance	Blue Powder
Odor	Characteristics odour	pH (1%)	6 to 7.5
Bulk density	0.35 ± 0.02 gm/ml	Solubility in water @	Suspension in water
Vapor pressure @ (mm Hg)	NA	Vapor density	NA
Viscosity	NA	Boiling point	NA
Melting point (°C)	NA		

SECTION 10: STABILITY AND REACTIVITY

Chemical stability	This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Conditions to Avoid	Keep away from heat, flame and other potential ignition sources. Keep away from strong oxidizing conditions and agents.
Hazardous Decomposition Products	May react with strong oxidizing agents.
Hazardous Polymerization	Oxides of nitrogen, sulfur, ethylene thiourea, carbon disulfide.
	Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Oral toxicity	ORAL LD50 not determined for combination product LD 50 for Mancozeb technical is > 5000 mg/kg (rats) LD 50 for Carbendazim technical is > 15000 mg/kg (rats)
Acute Dermal toxicity	LD 50 for Mancozeb technical >2000 mg/kg (rabbits) LD50 for Carbendazim technical > 2000 mg/kg (rats) > 10000 mg/kg (rabbits)
Acute Inhalation toxicity	LC50 (4 h) for rats, rabbits, guinea pigs or cats, no effect with suspension (10 g/l) water
Eye irritation: No irritation Skin irritation: No irritation	

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	<p>This product is toxic to fish and aquatic invertebrates. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters. Dispose of all excess treated seed-pieces and seed packaging by burial away from bodies of water. For Carbendazim technical:</p> <p>Birds: Acute oral LD₅₀ for quail 5826-15595 mg / kg.</p> <p>Fish: LC₅₀ (96 h) for carp 0.61, rainbow trout 0.83 mg / l.</p> <p>Bees: Not toxic to bees.</p> <p>Daphnia: EC₅₀ (48 h) 0.13-0.22 mg / l.</p>
Environmental fate	<p>Considering Carbendazim technical, environmental fate is:</p> <p>Animals: In male rats, following single oral administration of 3 mg / kg, 66% was eliminated in the urine within 6 hours.</p> <p>Plants: Readily absorbed by plants. One degradation product is 2-aminobenzimidazole.</p> <p>Soil and water: 2-Aminobenzimidazole has been found as a minor metabolite. Half-life in soil is 8-32 d under outdoor conditions. Carbendazim decomposes in the environment with half-lives of 6 to 12 months on bare soil, 3 to 6 months on turf, and 2 and 25 months in water under aerobic and anaerobic conditions respectively. It is mainly decomposed by microorganisms. 2-Amino-benzimidazole is a major degradation product and is further decomposed by microbial activity. K_{oc} 200-250.</p>

SECTION 13: DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR part 261) or other state and local 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.

Disposal should be in accordance with local state or national legislation. Remove to a safe location and bury on an authorized landfill site. Do not burn empty containers or Product.

SECTION 14 : TRANSPORT INFORMATION

IATA Shipping Name	DOT Technical Name: Mancozeb Technical and Carbendazim Technical
IATA Hazard class	9
IATA identification number	3077
IATA packing Group	III
IATA additional information	No data

SECTION 15: REGULATORY INFORMATION

TSCA Inventory	No data
SARA 311/312 Hazard Identification	Immediate (acute) health effects: yes Delayed (chronic) health effects: yes Reactive: yes This product contains the substances subject to the reporting requirements of SARA title 3, section 313 and 40 CFR part 372.
SARA 302/304 Emergency planning and notification	No data
SARA 313 Toxic chemical notification and Release reporting	This product contains the following components in concentrations above that are listed as toxic chemicals in 40 CFR part 372 pursuant to the requirements of section 313 of SARA.
CERCLA	No data
Clean air act (CAA)	Not applicable

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

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Local Bodies Involved	Collector of Thane			

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