

**SAFETY DATA SHEET**  
**KOVERALL FUNGICIDE**

**SDS # :** FO002283-2-A  
**Revision date:** 2018-01-19  
**Format:** NA  
**Version** 1



**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Identifier**

**Product Name** KOVERALL FUNGICIDE

**Other means of identification**

**Product Code(s)** FO002283-2-A

**Synonyms** MANCOZEB: [[1,2-ethanediybis[carbamodithioato]](2-)]manganese mixture with [[1,2-ethanediybis[carbamodithioato]](2-)]zinc (CAS name); manganese ethylenebis(dithiocarbamate) (polymeric) complex with zinc salt (IUPAC name)

**Active Ingredient(s)** Mancozeb

**Chemical Family** Dithiocarbamate

**Recommended use of the chemical and restrictions on use**

**Recommended Use:** Fungicide

**Restrictions on Use:** Use as recommended by the label

**Supplier Address**

FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104  
(215) 299-6000 (General Information)  
msdsinfo@fmc.com (E-Mail General Information)

**Emergency telephone number**

For leak, fire, spill or accident emergencies, call:  
1 800 / 424 9300 (CHEMTREC - U.S.A.)  
1 703 / 741-5970 (CHEMTREC - International)  
1 703 / 527 3887 (CHEMTREC - Alternate)

Medical Emergencies:  
1 800 / 331-3148 (ProPharma Group - U.S.A. & Canada)  
1 651 / 632-6793 (ProPharma Group - All Other Countries - Collect)

**2. HAZARDS IDENTIFICATION**

**Classification**

**OSHA Regulatory Status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)


Serious eye damage/eye irritation	Category 2B
Skin sensitization	Category 1

**GHS Label elements, including precautionary statements**

**EMERGENCY OVERVIEW**

**Warning**

**Hazard Statements**  
H320 - Causes eye irritation  
H317 - May cause an allergic skin reaction  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects



**Precautionary Statements - Prevention**

- P264 - Wash hands thoroughly after handling
- P260 - Do not breathe dust
- P272 - Contaminated work clothing should not be allowed out of the workplace
- P280 - Wear protective gloves
- P273 - Avoid release to the environment

**Precautionary Statements - Response**

- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P337 + P313 - If eye irritation persists: Get medical advice/ attention
- P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
- P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
- P363 - Wash contaminated clothing before reuse
- P391 - Collect spillage

**Precautionary Statements - Disposal**

- P501 - Dispose of contents/container according to label directions

**Hazards not otherwise classified (HNOC)**

No hazards not otherwise classified were identified.

**Other Information**

No information available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Chemical Family** Dithiocarbamate.

Chemical name	CAS-No	Weight %
Mancozeb	8018-01-7	75
Ethylene thiourea	96-45-7	<25

Synonyms are provided in Section 1.

**4. FIRST AID MEASURES**

**Eye Contact**

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison

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control center or doctor for further treatment advice.

### Skin Contact

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.

### Inhalation

Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

### Ingestion

Call a poison control center or doctor 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 a poison control center or doctor. Do not give anything by mouth to an unconscious person.

### Most important symptoms and effects, both acute and delayed

Harmful if absorbed through skin. May cause irritation. Repeated and prolonged exposure may cause sensitization. May cause eye irritation.

### Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically

## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

Dry chemical, carbon dioxide, water spray or regular foam.

### Specific Hazards Arising from the Chemical Explosion data

Particulates can become airborne. Combustion generates toxic fumes, including the following: hydrogen sulphide, sulphur oxides, and carbon oxides.

### Sensitivity to Mechanical Impact Sensitivity to Static Discharge

No information available.

No information available.

### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate upwind. Do not breathe smoke, vapors or gases generated.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Thoroughly launder clothing before reuse. Do not take clothing home to be laundered. For personal protection see section 8.

### Other

For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

### Environmental Precautions

Do not discharge into drains or rivers. Contain the spillage using bunding. Accidental release into water courses must be alerted to the appropriate regulatory body. Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. Keep out of waterways.

### Methods for Containment

Prevent further leakage or spillage if safe to do so.

### Methods for cleaning up

Pick up and transfer to properly labeled containers. Dispose of waste as indicated in Section 13.

## 7. HANDLING AND STORAGE

### Handling

Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.

### Storage

Keep away from open flames, hot surfaces and sources of ignition. Keep in a dry, cool and well-ventilated place. Keep out of reach of children and animals. Keep/store only in original container.

### Incompatible products

Oxidizing agents, Acids

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Control parameters

Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Mancozeb (8018-01-7)	-	TWA: 0.2 mg/m <sup>3</sup>	-	-

Appropriate engineering controls

**Engineering measures** Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Individual protection measures, such as personal protective equipment

**Eye/Face Protection** For dust, splash, mist or spray exposure, wear chemical protective goggles.

**Skin and Body Protection** Wear long-sleeved shirt, long pants, socks, and shoes.

**Hand Protection** Wear chemical protective gloves made of materials such as nitrile or neoprene

**Respiratory Protection** For dust, splash, mist or spray exposures wear a filtering mask.

**Hygiene measures** Clean water should be available for washing in case of eye or skin contamination. Remove and wash contaminated clothing before re-use. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Launder work clothing separately from regular household laundry.

**General information** If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties

<b>Appearance</b>	Solid
<b>Physical State</b>	Solid
<b>Color</b>	Yellow to brown
<b>Odor</b>	Musty
<b>Odor threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point</b>	192.22 - 203.89 °C / 378 - 399 °F
<b>Boiling Point/Range</b>	Decomposes
<b>Flash point</b>	Not applicable
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Flammability Limit in Air</b>	
<b>Upper flammability limit:</b>	No information available
<b>Lower flammability limit:</b>	No information available
<b>Vapor pressure</b>	0.013 @ 25°C (mancozeb)
<b>Vapor density</b>	No information available
<b>Density</b>	No information available
<b>Specific gravity</b>	No information available
<b>Water solubility</b>	6.2 mg/L @ 20° C
<b>Solubility in other solvents</b>	No information available
<b>Partition coefficient</b>	(n-octanol/water): Mancozeb: 2.14 x 10 <sup>1</sup>
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity, kinematic</b>	No information available
<b>Viscosity, dynamic</b>	No information available

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**Explosive properties** Not explosive  
**Oxidizing properties** No information available  
**Molecular weight** No information available  
**Bulk density** 0.6 - 0.7 g/cm<sup>3</sup>

## 10. STABILITY AND REACTIVITY

**Reactivity** None under normal use conditions  
**Chemical Stability** Stable under recommended storage conditions.  
**Possibility of Hazardous Reactions** None under normal processing.  
**Hazardous polymerization** Hazardous polymerization does not occur.  
**Conditions to avoid** Moisture, Heat, flames and sparks  
**Incompatible materials** Oxidizing agents, Acids.  
**Hazardous Decomposition Products** See Section 5 for more information.

## 11. TOXICOLOGICAL INFORMATION

### Product Information

**LD50 Oral** > 5000 mg/kg  
**LD50 Dermal** > 5000 mg/kg  
**LC50 Inhalation** > 5.14 mg/L 4 hr

**Serious eye damage/eye irritation** Expected to be moderately irritating.  
**Skin corrosion/irritation** Practically non-irritating.  
**Sensitization** May cause sensitization by skin contact

### Information on toxicological effects

**Symptoms** Symptoms from skin contact may include redness, itching and swelling.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Mutagenicity** No known mutagenic or teratogenic effects.  
**Carcinogenicity** There are no known carcinogenic chemicals in this product  
**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.  
**STOT - single exposure** No information available.  
**STOT - repeated exposure** No information available.  
**Aspiration hazard** No information available.

Chemical name	ACGIH	IARC	NTP	OSHA
Ethylene thiourea 96-45-7		Group 3	Reasonably Anticipated	X

### Legend:

IARC (International Agency for Research on Cancer)  
Group 3 - Not classifiable as to its carcinogenicity to humans  
NTP (National Toxicology Program)  
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen  
OSHA (Occupational Safety and Health Administration of the US Department of Labor)  
X - Present

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Toxic to aquatic life

Mancozeb:  
Fish – 96-hr LC50, Rainbow trout (*Oncorhynchus mykiss*) = 0.11 mg/l

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48-hr EC50, Rainbow trout (*Oncorhynchus mykiss*) = 2.2 mg/l  
48-hr EC50, Goldfish (*Carassius auratus*) = 9.0 mg/l  
48-hr EC50, Carp (*Cyprinus carpio*) = 4.0 mg/l  
Invertebrates – 48-Hr EC50, Daphnids (*Daphnia magna*) = 1.3 mg/l  
Birds – LC50, Bobwhite quail (*Colinus virginianus*) = >10000 ppm  
Bees – Non-toxic

**Persistence and degradability** Mancozeb: Non-persistent, Readily biodegradable.

**Bioaccumulation** Mancozeb: Does not bioaccumulate.

**Mobility** Mancozeb: Is not likely mobile in the environment.

### 13. DISPOSAL CONSIDERATIONS

**Waste disposal methods** Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.

**Contaminated Packaging** Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

### 14. TRANSPORT INFORMATION

**DOT** Not regulated for transportation if shipped in Non Bulk packaging. The classification below pertains to the shipment in Bulk packaging. (Bulk shipment is >882 lbs.)

**UN/ID no** UN3077  
**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s.  
**Hazard class** 9  
**Packing Group** III  
**Marine Pollutant** Mancozeb.  
**Description** UN3077, Environmentally hazardous substance, solid, n.o.s. (mancozeb), 9, III, Marine pollutant

**TDG**  
**UN/ID no** UN3077  
**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s.  
**Hazard class** 9  
**Packing Group** III  
**Marine Pollutant** Mancozeb.  
**Description** UN3077, Environmentally hazardous substance, solid, n.o.s. (mancozeb), 9, III, Marine pollutant

#### ICAO/IATA

**UN/ID no** UN3077  
**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s.  
**Hazard class** 9  
**Packing Group** III  
**Description** UN3077, Environmentally hazardous substance, solid, n.o.s. (mancozeb), 9, III, Marine pollutant

#### IMDG/IMO

**UN/ID no** UN3077  
**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s.  
**Hazard class** 9  
**Packing Group** III  
**Marine Pollutant** Mancozeb  
**Description** UN3077, Environmentally hazardous substance, solid, n.o.s. (mancozeb), 9, III, Marine

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pollutant

## 15. REGULATORY INFORMATION

### U.S. Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Ethylene thiourea - 96-45-7	96-45-7	<25	0.1

#### **SARA 311/312 Hazard Categories**

Acute health hazard	Yes
Chronic health hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

#### **Clean Water Act**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

#### **CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Ethylene thiourea 96-45-7	10 lb 4.54 kg	

#### *FIFRA Information*

*This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:*

#### **CAUTION**

*Harmful if absorbed through skin*

*Causes moderate eye irritation.*

*Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.*

*Avoid contact with skin, eyes, or clothing.*

*Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.*

*Remove and wash contaminated clothing before reuse.*

### US State Regulations

#### **California Proposition 65**

This product contains the following Proposition 65 chemicals.

Chemical name	California Prop. 65
Mancozeb - 8018-01-7	Carcinogen
Ethylene thiourea - 96-45-7	Carcinogen Developmental

#### U.S. State Right-to-Know Regulations

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Chemical name	New Jersey	Massachusetts	Pennsylvania
Ethylene thiourea 96-45-7	X	X	X

**International Inventories**

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINC S (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Mancozeb 8018-01-7				X	X	X	X	X
Ethylene thiourea 96-45-7	X	X	X	X	X	X	X	X

**WHMIS Statement**

This product has been classified in accordance with the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

**WHMIS Hazard Class**

See section 2 for more information

**16. OTHER INFORMATION**

<b>NFPA</b>	<b>Health Hazards 2</b>	<b>Flammability 0</b>	<b>Instability 0</b>	<b>Special Hazards -</b>
<b>HMIS</b>	<b>Health Hazards 2*</b>	<b>Flammability 0</b>	<b>Physical hazard 0</b>	<b>Personal Protection X</b>

\*Indicates a chronic health hazard.

**NFPA/HMIS Ratings Legend**

Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Revision date:

2018-01-19

Reason for revision:

Format Change

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**End of Safety Data Sheet**