

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

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	Particulates can become airborne. Combustion generates toxic fumes, including the following: hydrogen sulphide, sulphur oxides, and carbon oxides.
Explosion data	
Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	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 ³	-	-

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

Appearance	Solid
Physical State	Solid
Color	Yellow to brown
Odor	Musty
Odor threshold	No information available
pH	No information available
Melting point/freezing point	192.22 - 203.89 °C / 378 - 399 °F
Boiling Point/Range	Decomposes
Flash point	Not applicable
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	0.013 @ 25°C (mancozeb)
Vapor density	No information available
Density	No information available
Specific gravity	No information available
Water solubility	6.2 mg/L @ 20° C
Solubility in other solvents	No information available
Partition coefficient	(n-octanol/water): Mancozeb: 2.14 x 10 ¹
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	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 ³

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.
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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

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

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

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