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SUPERSEDES: 12/07/00

I. PRODUCT IDENTIFICATION

PRODUCT NAME: LESCO Mancozeb DG Fungicide
Chemical Family: Ethylenebisdithiocarbamate
Chemical Name/Synonyms: Mancozeb

II. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	%(by/wt.)	CAS #	PEL/TLV
Mancozeb: [[1,2-ethanediy]bis{carbamo[dithio]ato}]](2)] manganese mixture with [[1,2-ethanediy]bis{carbamo[dithio]ato}]](2-)]-zinc	75	8018-01-7	1 mg/M ³ , dermal sensitizer (Dow AgroSciences Industrial Hygiene Guide)
Balance, Total, Including:	25		
Calcium Lignosulfonate		8061-52-7	
Ethylene Thiourea		96-45-7	
Hexamethylene Tetramine		100-97-0	

Substances not 'Hazardous' per OSHA Hazard Communication Standard (29 CFR 1910.1200) may be listed. Where proprietary ingredient shows, the identify may be made available as provided in this standard

III. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Primary Route(s) of Entry: Eyes, Skin, Inhalation, Ingestion
POTENTIAL HEALTH EFFECTS: May cause eye irritation with corneal injury. May cause skin irritation.
EYE: May cause eye irritation with corneal injury.
SKIN: May cause skin irritation.
INHALATION: May cause irritation of the nose and throat
INGESTION: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
MEDICAL CONDITIONS AGGRAVATED: Skin contact may cause an allergic skin reaction in a small proportion of individuals.
POTENTIAL ENVIRONMENTAL HAZARDS: This product is toxic to fish. Drift and run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. For terrestrial use, do not apply directly to water, 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 washwaters or disposing of wastes.

IV. FIRST AID MEASURES

EYES: Immediately flush eyes with water for 15 – 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Obtain medical attention without delay, preferably from an ophthalmologist.
SKIN: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts, and watchbands.
INHALATION: Move person 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.
NOTES TO MEDICAL DOCTOR: No specific antidote. Treatment of exposure should be directly at the control of symptoms and the clinical condition of the patient.

V. FIRE FIGHTING MEASURES

Flash Point (Method Used): NA (granules)

Auto Ignition Temperature: NA (granules)

Lower Explosion Limits: ND

NFPA/HMIS Rating: Health: 2

EXTINGUISHING MEDIA: Foam

Dry Chemical

Upper Explosion Limits: ND

Fire: 1 Reactivity: 0

Alcohol Foam CO₂

Water Spray Other

UNUSUAL FIRE AND EXPLOSION HAZARDS: Particulates can become airborne.

FIRE FIGHTING PROCEDURES: Use water spray to cool containers exposed to fire. Contain run-off. Wear positive pressure self-contained breathing apparatus with full protective clothing. Remain upwind. Avoid breathing smoke.

HAZARDOUS COMBUSTION PRODUCTS: Combustion generates toxic fumes including the following: hydrogen sulfide, sulfur oxides, and carbon oxides.

VI. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: If material is spilled, sweep up small pills and place in a suitable container for disposal. Wash thoroughly after handling. Contain large spills and report them to Dow AgroSciences at 800-992-5994. Appropriate protective equipment must be worn when handling a spill of this material. If exposed to material during clean-up operations, remove all contaminated clothing promptly. Wash all exposed skin areas with soap and water immediately after exposure. Thoroughly launder clothing before reuse. Do not take clothing home to be laundered.

VII. HANDLING AND STORAGE

GENERAL PROCEDURES:

Handling: Do not handle material near food, feed or drinking water. Avoid high concentrations of dust in air and accumulation of dust on equipment. An airborne dust of this material can create a dust explosion. When handling and processing this material, local exhaust ventilation may be required to control dust and reduce exposure to vapors. To prevent dust explosions, employ bonding and grounding for operations capable of generating static electricity. Protect all equipment from explosions by following the NFPA 68 & 69 guidelines.

Storage: Do not store this material near food, feed or drinking water. Store in a well-ventilated area. Store in a dry area. DO NOT ALLOW Mancozeb to become wet or overheated in storage; decomposition, impaired activity or fire may result. Material is combustible; do not ignite. Store bagged material only on pallets no more than 3 high. Provide access aisles for each 2 rows. Loose bags should not be staked more than 2x2x2 meters. Dense packing of unvented stacks of bags may lead to product decomposition posing a fire hazard. Decomposition produces a foul odor. Check for hot containers and immediately remove to open areas for disposal. Keep container tightly closed when not in use.

OTHER PRECAUTIONS: Completely empty bag into application equipment. Dispose of empty bag in a sanitary landfill or by incineration as allowed by state and local authorities. Avoid inhalation of smoke if incinerated.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guideline.

PERSONAL PROTECTION EQUIPMENT:

EYES AND FACE: Chemical goggles

RESPIRATORY: If respiratory irritation is experienced, use a NIOSH approved air-purifying respirator for dust.

GLOVES: Chemical resistant gloves made of any waterproof material

PROTECTIVE CLOTHING: Long-sleeved shirt and long pants; shoes plus socks

WORK HYGIENIC PRACTICES: Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

COMMENTS: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

IX. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: NA

MELTING POINT: 378 – 399F (192 – 204C)

VAPOR DENSITY (air = 1): NA

SPECIFIC GRAVITY:) (see bulk density)

EVAPORATION RATE: NA

VAPOR PRESSURE: Negligible

ODOR: Musty odor
APPEARANCE: Yellow to brown granules
pH: NA

SOLUBILITY IN WATER: Dispersible
PERCENT VOLATILE: 0%
BULK DENSITY (lbs./cu ft): 0.6 – 0.7 g/cc

X. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Keep away from moisture, heat or flame.
STABILITY: Material is stable under normal storage conditions.
POLYMERIZATION: Will not occur
INCOMPATIBLE MATERIALS: Avoid contact with oxidizing agents and acids
HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may yield the following carbon disulfide and hydrogen sulfide.

XI. TOXICOLOGICAL INFORMATION

This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

EYE EFFECTS: May cause severe eye irritation with corneal injury
SKIN EFFECTS: Prolonged contact may cause slight skin irritation with local redness. Skin contact may cause an allergic skin reaction in a small proportion of individuals. Prolonged skin contact is unlikely to result in absorption of harmful amounts.
DERMAL LD₅₀: (Rabbit) Based on information for a similar material: >5000 mg/kg.
ORAL LD₅₀: (Rats) Based on information for a similar material: >5000 mg/kg. Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
INHALATION LC₅₀: (Rats) For Mancozeb: >5.14 mg/L for 4 hours. Dust may cause irritation of the upper respiratory tract (nose and throat) and lungs.
SENSITIZATION: No Data
ACUTE EFFECTS FROM OVEREXPOSURE: May cause irritation of nose, throat, skin and severe irritation of eyes with corneal injury.
CHRONIC EFFECTS FROM OVEREXPOSURE:
Systemic (Other Target Organ) Effects: Mancozeb, in animals, effects have been reported on the following organs: thyroid, liver, nervous system, and eyes.
CARCINOGENICITY:
Cancer: Mancozeb has caused cancer in laboratory animals.
Teratology (birth Defects): Mancozeb has caused birth defects in laboratory animals only at doses toxic to the mother.
Reproductive Effects: Mancozeb did not interfere with reproduction in laboratory animal studies.
Mutagenicity: For Mancozeb, in-vitro genetic toxicity studies were predominantly negative and animal genetic toxicity studies were negative.

IARC: Not Listed
NTP: Not Listed

OSHA: Not Listed
OTHER: CA Prop 65:

This product contains trace levels of a component (Ethylene Thiourea, CAS #96-45-7) known to the state of CA to cause cancer, birth defects, or other reproductive harm.

This product contains a component (Mancozeb, CAS #8018-01-7) known to the state of CA to cause cancer.

XII. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA:

Movement & Partitioning:

No relevant information found.

Degradation & Persistence:

Based largely or completely on information for the major component(s):

Chemical degradation (hydrolysis) is expected in the environment.

Degradation is expected in the soil environment.

ECOTOXICOLOGICAL INFORMATION: Based largely or completely on information for Mancozeb: Material is very highly toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is <1 mg/L in most sensitive species tested.)

Material is practically non-toxic to birds on a dietary basis (LC₅₀ is >5000 ppm).

Material is practically non-toxic to birds on an acute basis (LD₅₀ is >2000 mg/kg).

XIII. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:

Product: Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility.

Container: Completely empty bag into application equipment. Then dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

XIV. TRANSPORTATION INFORMATION:

DOT Transportation:

Not regulated for domestic surface transportation only when shipping in non-bulk packages

U.S. Surface Freight Class: Bulk Packaging:

ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (CONTAINS MANCOZEB)/9/UN3077/PGIII/MARINE POLLUTANT (MANCOZEB)

Proper Shipping Name:

Bulk Packaging: Maneb Preparations

HM 181 Shipping Name:

Maneb Preparations

Hazard Class:

9

ID NO.:

UN3077

Marine Pollutant #1: Shipments by Vessel: MARINE POLLUTANT (MANCOZEB)

XV. REGULATORY INFORMATION – UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

SEC 311/312:

Y Immediate (Acute Health)

Y Delayed (Chronic Health)

N Fire

N Sudden Release of Pressure

N Reactivity

SEC 302 (Extremely Hazardous Substance): NA

SEC 304 (Emergency Release Notification): NA

SEC 313 (Toxic Chemicals): Ethylene Thiourea (96-45-7 <0.1%); Mancozeb (8018-01-7 75%); Generic Group Name for Mancozeb: Ethylenebisdithiocarbamic Acid (111-54-6)

CERCLA RQ: Ethylene Thiourea (9604507) 10 lbs; Mancozeb (8018-01-7) 5000 lbs. Generic Group Name for Mancozeb: Ethylenebisdithiocarbamic Acid (111-54-6)

RCRA: US EPA Hazardous Waste Number: u114 (Ethylenebisdithiocarbamic Acid)

CAA RQ: NA

EPA Registration No.: 62719-402-10404

NOTE: NA=Not Applicable; ND=Not Determined; NE=Not Established

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