
"MANZATE" 200 DF
GPA00207 Revised 6-DEC-2005 Printed 9-DEC-2005

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"Manzate" is a registered trademark of DuPont.

Corporate MSDS Number : DU005721

Tradenames and Synonyms

Company Identification

MANUFACTURER/DISTRIBUTOR

E.I. du Pont Canada Company
P.O. Box 2200
Streetsville
Mississauga, Ontario L5M 2H3

PHONE NUMBERS

Product Information : 1-800-387-2122
Medical Emergency : 1-800-441-3637 (24 hours)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
MANCOZEB (A COORDINATION PRODUCT OF ZINC ION AND MANGANESE ETHYLENE BISDITHIOCARBAMATE)	8018-01-7	75 %
INERT INGREDIENTS		25 %

HAZARDS IDENTIFICATION

Emergency Overview

CAUTION! MAY IRRITATE EYES, NOSE, THROAT AND SKIN. MAY BE
HARMFUL IF ABSORBED THROUGH SKIN, INHALED OR SWALLOWED.
Avoid breathing dust or spray mist. Avoid contact with
skin, eyes and clothing. Keep away from fire or sparks.

Material Safety Data Sheet
(HAZARDS IDENTIFICATION - Continued)

Potential Health Effects

Skin contact may cause skin irritation with discomfort and rash. Repeated exposure may cause skin sensitization with allergic rashes. Significant skin permeation and systemic toxicity after contact appears unlikely.

Eye contact may cause eye irritation with discomfort, tearing, or blurring of vision.

Based on animal studies, long term exposure to high levels may cause abnormal thyroid function.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

IF SWALLOWED: 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.

IF INHALED: 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.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For medical emergencies involving this product, call toll-free 1-800-441-3637. See Label for Additional Precautions and Directions for Use.

FIRE FIGHTING MEASURES

Flammable Properties

Flammable limits in Air, % by Volume

LEL : 0.96 g/L

Autoignition : 205 C (401 F)

May be ignited by heat or open flame.

Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air.

Hazardous gases/vapors produced in fire are H₂S, CS₂, and oxides of sulfur, nitrogen, and carbon.

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO₂.

Fire Fighting Instructions

Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Wear full protective equipment. Use water spray. Runoff from fire control may be a pollution hazard.

If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the contamination hazard.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Initial Containment

Remove source of heat, sparks, flame, impact, friction or electricity. Dike spill. Prevent material from entering sewers, waterways, or low areas.

Spill Clean Up

Shovel or sweep up. Never return to container for reuse. Scoop into bags or boxes with plastic or aluminum shovel.

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HANDLING AND STORAGE

Handling (Personnel)

Avoid breathing vapors or mist. Avoid breathing dust. Avoid contact with eyes, skin, or clothing. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

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

Handling (Physical Aspects)

Keep away from heat, sparks and flames.

Storage

Store in a well ventilated place. Keep container tightly closed. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

Store product in original container only, away from other pesticides, fertilizer, food or feed.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

During aerial application, Human flaggers must be in enclosed cabs.

Personal Protective Equipment

Always follow label instructions when using this product.

Some materials that are chemical resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical-resistance category selection chart.

Applicators and other handlers (other than mixers and

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

loaders) must wear:

- Coveralls over long-sleeved shirt and long pants.
- Chemical-resistant gloves such as nitrile rubber, natural rubber, or butyl rubber.
- Shoes plus socks.

Mixers and Loaders must wear:

- Coveralls over long-sleeved shirt and long pants.
- Chemical-resistant gloves such as nitrile rubber, natural rubber, or butyl rubber.
- Shoes plus socks.
- Protective eyewear.
- Chemical-resistant apron when mixing or loading.

Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls over long-sleeved shirt and long pants.
- Chemical-resistant gloves such as nitrile rubber, natural rubber, or butyl rubber.
- Shoes plus socks.

Exposure Guidelines

Applicable Exposure Limits

MANCOZEB

PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
WEEL (AIHA)	: 1 mg/m ³ , 8 Hr. TWA, SEN

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Solubility in Water	: Dispersible
Odor	: Sulfurous
Form	: Solid
Color	: Yellow
Bulk Density (Loose)	: 40-45 lbs/cu ft

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STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

Incompatible with acids; moisture (in storage).

Decomposition

Decomposes with heat.

Hazardous gases/vapors produced are hydrogen sulfide, carbon disulfide, and oxides of carbon, nitrogen, and sulfur. Elevated temperature or free water promotes decomposition which may cause spontaneous combustion.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

Oral LD50:	> 5000 mg/kg in rats
Dermal LD50:	> 2000 mg/kg in rabbits
4-hour Inhalation LC50:	> 5.4 mg/L in rats

Mild to moderate eye irritant. It was classified as a non-irritant per EEC Guidance and given a Toxicity Category III rating by EPA Guidance. Mild to slight skin irritant and a sensitizer in animals.

MANCOZEB

The effects in animals from repeated high inhalation doses of Mancozeb (dust) equivalent to 150-250 times the AEL include reduced body weight, inflammation of the lungs, and abnormal thyroid function.

Toxic effects in animals from repeated ingestion of high doses of Mancozeb include reduced body weight and thyroid effects. In a different study, repeated dosing caused toxic and neuropathological effects in male and female rats which included compound-related mortality, decreased body weight, impaired hind limb motor activity and histopathological evidence of nerve damage. The no-observable-effect level was 125 ppm.

Increased incidences of thyroid tumors and ocular lesions (retinopathy) were observed in rats administered 750 ppm (equivalent to approximately 35 mg/kg/day) of Mancozeb

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(TOXICOLOGICAL INFORMATION - Continued)

in their diet for two years. Mancozeb is considered to show weak carcinogenic activity. Tests in some animals indicate that Mancozeb may produce embryo and fetal toxicity, but only at maternally toxic doses. Multi-generation studies in animals demonstrate no reproductive toxicity.

Mancozeb is in the ethylene-bis-dithiocarbamate (EBDC) class of fungicides. EBDCs including mancozeb, which are metabolized to ethylene thiourea (ETU), have produced thyroid tumors in animal studies.

Mancozeb does not produce genetic damage in bacterial or most mammalian cell culture systems. It has been reported to produce genetic damage in some, but not all, animal tests. It has not been tested adequately for heritable genetic damage.

ECOLOGICAL INFORMATION

Ecotoxicological Information

MANCOZEB

AQUATIC TOXICITY:

- 96 hour LC50 - Rainbow trout: 0.073 mg/L.
- 96 hour LC50 - Fathead minnows: 0.57 mg/L.
- 96 hour LC50 - Bluegill sunfish: 0.84 mg/L.
- 72-hour EC50 (growth inhibition) - freshwater algae:
0.43 mg/L.

DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system.

Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

ENVIRONMENTAL HAZARDS:

This product is toxic to fish. Drift or runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Cover or incorporate spilled treated seed. Do not contaminate water when disposing of equipment washwaters.

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(DISPOSAL CONSIDERATIONS - Continued)

Container Disposal

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

TRANSPORTATION INFORMATION

Shipping Information

DOT

Proper Shipping Name : Not Regulated unless shipped in bulk package or by water

DOT/IMO

Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (MANCOZEB)

Hazard Class : 9

UN No. : UN 3077

Marine Pollutant : YES (MANCOZEB 75%)

Packing Group : III

Reportable quantity : Yes-Add RQ if 5,000 or more pounds mancozeb in single pkg.

IATA/ICAO : Not Regulated if less than 5,000 pounds mancozeb per package.

Shipping Information -- Canada

This material is Not Regulated.

REGULATORY INFORMATION

U.S. Federal Regulations

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes

Chronic : Yes

Fire : No

Reactivity : Yes

Pressure : No

In the United States this product is regulated by the US Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act. It is a violation of federal law to use this product in a manner inconsistent with its labeling.

EPA Reg. No. 352-449

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(REGULATORY INFORMATION - Continued)

State Regulations (U.S.)

CALIFORNIA (PROPOSITION 65):

This product contains mancozeb and ethylene thiourea (ETU), chemicals known to the State of California to cause cancer in laboratory animals. ETU is also known to the State of California to cause birth defects or other reproductive harm in laboratory animals.

Canadian Regulations

Regulated under the Pest Control Products Act--WHMIS Exempt

Registration No. 21057 Pest Control Products Act.

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating

Health	:	1
Flammability	:	1
Reactivity	:	1

Water Reactive.

NPCA-HMIS Rating

Health	:	1
Flammability	:	1
Reactivity	:	1

Personal Protection rating to be supplied by user depending on use conditions.

Additional Information

Never allow product to become wet during storage. This may lead to chemical changes which will reduce the effectiveness as a fungicide and create flammable vapors.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS

----- Crop Protection E.I. du Pont Canada Company
Box 2200, Streetsville
Mississauga, Ontario L5M 2H3
(905) 821-3300.

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End of MSDS