



Material Safety Data Sheet

United Phosphorus, Inc.

NFPA	PPE		

Issued Date 17-Sep-2010

Revision Date 28-Oct-2010

Revision Number: 3

1. PRODUCT AND COMPANY IDENTIFICATION

UPI

630 Freedom Business Center
Suite 402
King of Prussia, PA 19406

Emergency Telephone Number

Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
Medical: Rocky Mountain Poison Control Center
(866) 673-6671 (24hrs)

Company Information

UPI

Contact Information

Customer Service
R&D Technical Service

Phone Number

1-800-438-6071
610-878-6100

Available Hrs

8:00 am to 5:00 pm EST
8:00 am - 5:00 pm (EST)

Product Name

EPA Reg

Recommended Use

Product Code

Manzate Flowable
70506-236
fungicide
12-371D

2. HAZARDS IDENTIFICATION

Emergency Overview

May cause allergic skin reaction
Harmful by inhalation, in contact with skin and if swallowed
May cause thyroid damage after repeated exposure based on animal data.

CAUTION

Appearance Pale, Yellow.

Physical State Liquid.

Odor Slight. Rotten egg-like.

Potential Health Effects

- Inhalation
- Skin contact
- Repeated or long-term exposure may cause adverse effects on the thyroid.

Eyes

May cause slight irritation.

Skin

Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Inhalation

May cause irritation of respiratory tract.

Ingestion

May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients Name

Chemical Name	CAS-No	Weight %	OSHA PEL
Mancozeb	8018-01-7	37	N/A
Ethylene thiourea	96-45-7	<1.0	N/A

4. FIRST AID MEASURES

Eye Contact

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

Skin Contact

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

Inhalation

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

Ingestion

Call a physician or Poison Control Center immediately
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
Never give anything by mouth to an unconscious person

Notes to Physician

No information available

5. FIRE-FIGHTING MEASURES

Flammable Explosive Properties

Flash Point	Not available
Autoignition Temperature	Not available

Flammability Limits in Air	Not available
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Extnguishing Media	Use: Carbon dioxide (CO2) Foam Dry chemical
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Fire/Explosion Hazard	Firefighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear and self-contained breathing apparatus. Fire fighting equipment should be thoroughly decontaminated after use.
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Hazardous Combustion Products	Carbon disulfide, ethylene thiourea (ETU) , Sulfur oxides, Oxides of nitrogen, Oxides of carbon.
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NFPA	Health 1	Flammability 1	Instability 0
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6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Avoid contact with skin, eyes and clothing. Use personal protective equipment.
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Environmental Precautions	Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.. Do not flush into surface water or sanitary sewer system.
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Methods for Clean-up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up and shovel into suitable containers for disposal.
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7. HANDLING AND STORAGE

Handling	Keep out of reach of children. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Keep away from heat, sparks and open flame. - No smoking.
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Storage	Store in an area where cross-contamination with pesticides, fertilizers, food or feed could not occur. . If allowed to become wet the product will deteriorate and represent a fire hazard.
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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Engineering Controls

Investigate engineering techniques to reduce exposures. Local mechanical exhaust ventilation is preferred. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems. .

PESTICIDE APPLICATORS & WORKERS. THESE WORKERS MUST REFER TO PRODUCT LABELING AND DIRECTIONS FOR USE IN ACCORDANCE WITH EPA WORKER PROTECTION STANDARD 40 CFR PART 170..

Personal Protective Equipment

Eye/face Protection

Avoid contact with eyes. Goggles.

Skin Protection

Rubber gloves. Wear protective gloves/clothing.

Respiratory Protection

Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus. Respiratory protection programs must comply with 29 CFR 1910.134. .

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Pale Yellow	Odor	Slight Rotten egg-like
Physical State	Liquid	pH	(@20C)7.5
Boiling Point/Range	212°F	Melting Point/Range	Not available
Specific Gravity	1.29-1.31 g/cm3	Solubility	Dispersible in water
Evaporation Rate	Less than 1	Vapor Pressure	Not available
Vapor Density	Not available	VOC Content	Not available
Viscosity	Not available	Molecular Weight	No data available
Bulk Density	No data available	Percent Solids	Not available
Percent Volatiles	53-56%		

10. STABILITY AND REACTIVITY

Stability

Stable under recommended storage conditions

Conditions to Avoid

To avoid thermal decomposition, do not overheat. Keep away from children. Avoid temperatures above 49 C.

Incompatible Materials

Strong oxidizing agents. Acids.

Hazardous Decomposition Products

carbon disulfide, ethylene thiourea. Hydrogen sulfide.

Possibility of Hazardous Polymerization

Hazardous polymerisation does not occur

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

Manzate Flowable:
Oral LD50 rat = >5,000 mg/kg
Dermal LD50 rabbit = >2,000 mg/kg
Inhalation LC50 rat = >4.8 mg/L
Slight skin irritant. Not a skin sensitizer
Moderate eye irritant

Chronic Toxicity

Carcinogenicity

Mancozeb:

The effects in animals from repeated high inhalation dose 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 were observed in rats administered 750 ppm (equivalent to approximately 35 mg/kg/day) of mancozeb 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.

Chemical Name	ACGIH	IARC	NTP	OSHA
Ethylene thiourea			X	

IARC: (International Agency for Research on Cancer)

A trace contaminant, Ethylene thiourea (ETU) a breakdown product of Maneb, has been categorized as a probable human carcinogen by NTP.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Mancozeb:

Aquatic toxicity:

96 hour LC50 = rainbow trout 0.73 mg/L

96 hour LC50 = fathead minnows 0.57 mg/L

96 hour LC50 = Bluegill sunfish 0.84 mg/L

72 hour EC50 = freshwater algae = 0.43 mg/L .

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method	Dispose of in accordance with local regulations. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If the wastes cannot be disposed of by use or according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. .
Contaminated Packaging	Refer to product label.

14. TRANSPORT INFORMATION

DOT Not regulated when shipped by highway in non-buk containers as per 49 CFR 171.4
When shipped in bulk, by vessel, or internationally use the following shipping description:

Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (Mancozeb)
Hazard Class	9
UN-No	UN3082
Packing Group	PG III
Marine Pollutant:	Yes.

ICAO Not regulated

IATA

UN-No	3082
Proper Shipping Name	Environmentally hazardous substances, liquid, n.o.s. (Mancozeb)
Hazard Class	9
Packing Group	PG III

IMDG/IMO

Proper Shipping Name	Environmentally hazardous substances, liquid, n.o.s. (Mancozeb)
Hazard Class	9
UN-No	3082
Packing Group	PG III
Marine Pollutant	This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

15. REGULATORY INFORMATION

International Inventories

Mancozeb	
ENCS	Listed
CHINA	Listed
KECL	Listed
Ethylene thiourea	
DSL	Listed
EINECS/ELINCS	Listed
ENCS	Listed

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Mancozeb

CHINA

Listed

KECL

Listed

USA

Federal Regulations

SARA 313

Y

Chemical Name	CAS-No	Weight %
Mancozeb	8018-01-7	37
Ethylene thiourea	96-45-7	<1.0

SARA 311/312 Hazardous Categorization

Chronic Health Hazard Yes

Acute Health Hazard Yes

Fire Hazard No

Sudden Release of Pressure Hazard No

Reactive Hazard No

Clean Water Act

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs:

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Mancozeb	8018-01-7	37	Listed.			
Ethylene thiourea	96-45-7	<1.0	Listed.			

CERCLA

Chemical Name	RQ
Mancozeb	Listed.
Ethylene thiourea	Listed.

RCRA

Chemical Name	RCRA - D Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Ethylene thiourea			U116

Pesticide Information

State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	Category	California Prop. 65
Mancozeb	8018-01-7		Listed. Listed: January 1, 1990 Carcinogenic.

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Chemical Name	CAS-No	Category	California Prop. 65
Ethylene thiourea	96-45-7		Listed. Listed: January 1, 1988 Carcinogenic. Listed: January 1, 1993 Developmental toxin. 20 ug/day

State Right-to-Know

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Mancozeb		Substance no. 2370 Listed. Substance no. 2369 Listed. Substance no. 2371 Listed. Substance no. 2372 Listed. Substance no. 2324 Listed.		Listed.	Listed.
Ethylene thiourea	Listed.	Substance no. 0883 Listed. Substance no. 0883 Special hazard.	Listed.	Listed.	Listed.

International Regulations

Mexico - Grade

Not available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

Not determined

Chemical Name	NPRI
Mancozeb	X
Ethylene thiourea	X

16. OTHER INFORMATION

Revision Date

28-Oct-2010

Revision Summary

Update section 14

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End of MSDS