



# Material Safety Data Sheet

## United Phosphorus, Inc.

<b>NFPA</b>	<b>PPE</b>		

Issued Date 17-Sep-2010

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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)

**UPI**  
Company Information

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**                      Manzate Flowable  
**EPA Reg #**                            70506-236  
**Recommended Use**                fungicide  
**Product Code**                        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.

<b>Eyes</b>	May cause slight irritation.
<b>Skin</b>	Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
<b>Inhalation</b>	May cause irritation of respiratory tract.
<b>Ingestion</b>	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

**Extnguishing Media** Use: Carbon dioxide (CO2) Foam Dry chemical

**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.

**Hazardous Combustion Products** Carbon disulfide, ethylene thiourea (ETU) , Sulfur oxides, Oxides of nitrogen, Oxides of carbon.

**NFPA** **Health** 1 **Flammability** 1 **Instability** 0

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions** Avoid contact with skin, eyes and clothing. Use personal protective equipment.

**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.

**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.

**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.

**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.

## 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

<b>Appearance</b>	Pale Yellow	<b>Odor</b>	Slight Rotten egg-like
<b>Physical State</b>	Liquid	<b>pH</b>	(@20C)7.5
<b>Boiling Point/Range</b>	212°F	<b>Melting Point/Range</b>	Not available
<b>Specific Gravity</b>	1.29-1.31 g/cm <sup>3</sup>	<b>Solubility</b>	Dispersible in water
<b>Evaporation Rate</b>	Less than 1	<b>Vapor Pressure</b>	Not available
<b>Vapor Density</b>	Not available	<b>VOC Content</b>	Not available
<b>Viscosity</b>	Not available	<b>Molecular Weight</b>	No data available
<b>Bulk Density</b>	No data available	<b>Percent Solids</b>	Not available
<b>Percent Volatiles</b>	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

<b>Waste Disposal Method</b>	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. .
<b>Contaminated Packaging</b>	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:

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

**ICAO** Not regulated

#### IATA

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

#### IMDG/IMO

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

### 15. REGULATORY INFORMATION

#### International Inventories

Mancozeb	
<b>ENCS</b>	Listed
<b>CHINA</b>	Listed
<b>KECL</b>	Listed
Ethylene thiourea	
<b>DSL</b>	Listed
<b>EINECS/ELINCS</b>	Listed
<b>ENCS</b>	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**