



United Phosphorus, Inc.

NFPA	PPE		

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Revision Number: 5

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)

<u>Company Information</u>	<u>Contact Information</u>	<u>Phone Number</u>	<u>Available Hrs</u>
UPI	Customer Service R&D Technical Service	1-800-438-6071 610-223-2180	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 if absorbed through skin
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

If breathing is irregular or stopped, administer artificial respiration
May cause allergic respiratory reaction
Call a poison control center or doctor for further treatment advice.

Ingestion

Call a physician or poison control center immediately
May produce an allergic reaction
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

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

Long sleeved clothing. Long pants. Socks and footwear. Chemical resistant gloves. waterproof gloves.

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. Mixers & loaders:
A NIOSH approved dust mist filtering respirator with MSA/NIOSH approval number prefix TC-21C or a NIOSH approved respirator with any N, R, P, or HE filter.

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/cm ³	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

Oxides of carbon and nitrogen 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 neopathological 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		Group 3	Reasonably Anticipated	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

Toxic to aquatic organisms. 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 IMDG 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
UN-No UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s mancozeb
Hazard Class 9
Packing Group PG III
Description Marine pollutant

IATA
UN-No 3082
Proper Shipping Name Environmentally hazardous substances, liquid, n.o.s. mancozeb
Hazard Class 9
Packing Group PG III
Description Marine pollutant

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

Chemical Name	TSCA	DSL	NDSL	EINECS/ ELINCS	ENCS	CHINA	KECL	AICS
Mancozeb					(2)-2127 (2)-1841	X	KE-13636	X
Ethylene thiourea	Present	X		X	(5)-423	X	KE-20941	X

USA

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Federal Regulations

SARA 313

Y

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values
Ethylene thiourea	96-45-7	<1.0	0.1

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				
Ethylene thiourea	96-45-7	<1.0				

CERCLA

Component	RQ
Ethylene thiourea 96-45-7 (<1.0)	10 lb

RCRA

Component	RCRA - D Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Ethylene thiourea 96-45-7 (<1.0)			U116

Pesticide Information

Component	FIFRA - Restricted Use	FIFRA - Pesticide Product Other Ingredients	FIFRA - Listing of Pesticide Chemicals	California Pesticides - Restricted Materials
Mancozeb 8018-01-7 (37)			X	
Ethylene thiourea 96-45-7 (<1.0)			X	

State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	Category	California Prop. 65	Non-additive, corrosive chemical type
Mancozeb	8018-01-7	Carcinogen	Carcinogen	

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Ethylene thiourea	96-45-7	Carcinogen	Carcinogen Developmental	
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State Right-to-Know

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Mancozeb				X	
Ethylene thiourea	X	X	X	X	

International Regulations

Mexico - Grade Mexico - Grade

Component	Category	Carcinogen Status	Exposure Limits
Mancozeb 8018-01-7 (37)	Carcinogen		
Ethylene thiourea 96-45-7 (<1.0)	Carcinogen		

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
Ethylene thiourea	X

16. OTHER INFORMATION

Revision Date 20-Aug-2013

Revision Summary

Recurrent confirmation/update of data

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End of MSDS