



Material Safety Data Sheet

United Phosphorus, Inc.

| | | | |
|-------------|------------|--|--|
| NFPA | PPE | | |
| | | | |

Issued Date 20-Dec-2010

Revision Date

Revision Number: 0

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 Pro-Stick T&O Fungicide
EPA Reg # 70506-234
Recommended Use fungicide
Product Code 12-371F

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 Yellow.

Physical State Solid.

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 | 75 | N/A |
| Ethylene thiourea | 96-45-7 | 0-0.1 | 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 205°C / 401°F

Flammability Limits in Air 0.29 g/L (% by volume in air)

Extinguishing Media Use: Carbon dioxide (CO₂) Foam Dry chemical If stored material becomes wetted or damp it can produce heat and deteriorate, over time, to become a fire hazard.

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 1

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 Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Handling Avoid breathing dust. 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

| | | | |
|----------------------------|----------------|----------------------------|------------------------|
| Appearance | Yellow | Odor | Slight Rotten egg-like |
| Physical State | Solid | pH | No data available |
| Boiling Point/Range | Not available | Melting Point/Range | Not available |
| Specific Gravity | Not available | Solubility | Not available |
| Evaporation Rate | Not available | Vapor Pressure | Not available |
| Vapor Density | Not available | VOC Content | Not available |
| Viscosity | Not available | Molecular Weight | No data available |
| Bulk Density | 40-45 lb/cu ft | Percent Solids | Not available |
| Percent Volatiles | Not available | | |

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions

Conditions to Avoid

To avoid thermal decomposition, do not overheat. Keep away from children.

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 Pro Stick :
Oral LD50 (rat) = >5,000 mg/kg
Dermal LD50 (rabbit) = > 2,000 mg/kg
Inhalation LC50 (rat) 4 hr = >5.4 mg/L

Mild to moderate eye irritant. Mild to slight skin irritant. Sensitizer .

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 substances, solid, n.o.s. (Mancozeb) |
| Hazard Class | 9 |
| UN-No | UN3077 |
| Packing Group | PG III |
| Marine Pollutant: | Yes. |

ICAO

| | |
|-----------------------------|--|
| UN-No | UN3077 |
| Proper Shipping Name | Environmentally hazardous substance, solid, n.o.s (Mancozeb) |
| Hazard Class | 9 |
| Packing Group | PG III |

IATA

| | |
|-----------------------------|--|
| UN-No | 3077 |
| Proper Shipping Name | Environmentally hazardous substances, solid, n.o.s. (Mancozeb) |
| Hazard Class | 9 |
| Packing Group | PG III |

IMDG/IMO

| | |
|-----------------------------|--|
| Proper Shipping Name | Environmentally hazardous substances, solid, n.o.s. (Mancozeb) |
| Hazard Class | 9 |
| UN-No | 3077 |
| 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 |

12-371F - Manzate Pro-Stick T&O Fungicide

Mancozeb
Ethylene thiourea

| | |
|----------------------|--------|
| DSL | Listed |
| EINECS/ELINCS | Listed |
| ENCS | Listed |
| CHINA | Listed |
| KECL | Listed |

USA

Federal Regulations

SARA 313

Y

| Chemical Name | CAS-No | Weight % |
|-------------------|-----------|----------|
| Mancozeb | 8018-01-7 | 75 |
| Ethylene thiourea | 96-45-7 | 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 | 75 | Listed. | | | |
| Ethylene thiourea | 96-45-7 | 0-0.1 | 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 |
|---------------|--------|----------|---------------------|
|---------------|--------|----------|---------------------|

12-371F - Manzate Pro-Stick T&O Fungicide

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

Revision Summary

Add to system

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End of MSDS