



Material Safety Data Sheet

United Phosphorus, Inc.

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

Issued Date 07-Feb-2007

Revision Date 16-Dec-2009

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 Hydrothol® 191 Aquatic algicide and herbicide
EPA Reg # 70506-175
Recommended Use Aquatic herbicide algicide
Product Code 12-174

2. HAZARDS IDENTIFICATION

Emergency Overview

Causes irreversible eye damage
 May be fatal if swallowed.
 May be fatal if absorbed through skin
 Harmful by inhalation
 Causes severe skin irritation

DANGER!

Appearance Dark yellow, Light brown.

Physical State Liquid.

Odor Slight chlorine.

Potential Health Effects

- Inhalation
- Skin contact

Eyes

Risk of serious damage to eyes. Causes irreversible eye damage..

Skin

Severely irritating to the skin. Prolonged contact can result in redness and blistering of skin..

Inhalation

Slightly toxic if inhaled.

Ingestion

Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients Name

| Chemical Name | CAS-No | Weight % | OSHA PEL |
|--|------------|----------|----------|
| Mono(N,N-diethylalkylamine)salt of endothall | 66330-88-9 | 53 | 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

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | |
|--------------------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| 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. . |
| Personal Protective Equipment | |
| Eye/face Protection | Goggles. Avoid contact with eyes. |
| 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

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------|-------------------------|----------------------------|------------------------------------|
| Appearance | Dark yellow Light brown | Odor | Slight chlorine |
| Physical State | Liquid | pH | No data available |
| Boiling Point/Range | 100°C | Melting Point/Range | Not available |
| Specific Gravity | 1.44 @25 C | Solubility | >50 g/100 ml |
| Evaporation Rate | Not available | Vapor Pressure | 9.45 X 10 ⁻⁶ Torr(Salt) |
| Vapor Density | Not available | VOC Content | Not available |
| Viscosity | 100 cps@ 25 C | Molecular Weight | No data available |
| Bulk Density | No data available | Percent Solids | Not available |
| Percent Volatiles | 47% | | |

10. STABILITY AND REACTIVITY

| | |
|--|---|
| Stability | Stable under normal conditions |
| Conditions to Avoid | Extreme temperatures. |
| Incompatible Materials | No materials to be especially mentioned |
| Hazardous Decomposition Products | Extreme temperatures may convert endothall product to endothall anhydride, a strong vessicant, causing blistering of eyes, mucous membranes and skin. . |
| Possibility of Hazardous Polymerization | Hazardous polymerisation does not occur |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

Single exposure studies indicate:

Oral - Moderately toxic to rats (LD50 233.4 mg/kg)

Dermal - Moderately toxic to rabbits (LD50 480.9 mg/kg)

Inhalation - Slightly toxic to rats (4 hr LC 50 0.7 mg/l)

Skin irritation - Severely irritating to rabbits

Eye irritation - severely irritating to rabbits

No skin allergy was observed in guinea pigs following repeated exposure.

Endothall

Intentional swallowing of 40 ml led to death within 12 hours. Skin allergy was observed in guinea pigs following repeated exposure. Repeated dietary administration (Via gelatin capsules) produced vomiting, diarrhea, sluggish movements, and liver, kidney and blood effects in dogs. Long-term dietary administration to rats and mice produced effects in the glandular stomach. High mortality rates and intestinal tumors considered to be secondary to the effects in the stomach were observed in mice. Long-term application to the skin of mice produced no tumors. No birth defects were observed in the offspring of rats exposed orally during pregnancy, even at dosages that produced adverse effects on the mothers. Skelatal abnormalities were observed in the offspring of rabbits and mice exposed during pregnancy, but only at dosages that produced adverse effects in the mothers. No genetic changes were observed in tests using bacteria, animal cells or animals.

Chronic Toxicity

There are no known carcinogenic chemicals in this product

Carcinogenicity

12. ECOLOGICAL INFORMATION

Ecotoxicity

This material is highly toxic to *Daphnia magna* (48 hr LC50 0.36 mg/l), fathead minnow (96 hr LC50 0.94 mg/l, golden shiner (120 hr LC50 0.32 mg/l) and scud (96 hr TL50 0.48 mg/l). It is moderately toxic to mussels (48 hr LC50 4.85 mg/l) and rainbow trout (96 hr LC50 1.7 mg/l). The 7 day LC50 for *Ceriodaphnia* was 0.18-0.19 mg/l and 0.304 mg/l for fathead minnow. . Material is slightly toxic to bluegill sunfish (96 hr LC50 77 mg/l), rainbow trout (96-hr LC50 0.94 mg/l) *Daphnia magna* (48 hour LC50 92 mg/l) eastern oysters (96 hr LC50 54 mg/l) mysid shrimp (96 hr LC50 39 mg/l) and fiddler crab (96 hr LC50 85.1 mg/l) It is practically non-toxic to sheepshead minnow (96 hr LC50 110 mg/l) and common mummichog (96 hr LC50 213.9 mg/l). .

Chem Fate: Active ingredient (technical) -

No degradation was observed in irradiated or dark water during a 30-day test period at pH 7 or 9. Rapid degradation was observed in irradiated, but not dark, water at pH 5 (Half-life <24 hours). This material adsorbed readily from aqueous solution on to Crosby silt loam. It is not expected to bioaccumulate with bioaccumulation factors (BCF) of 10 for mosquito fish and 0.003- 0.008 for bluegills..

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method 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 Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name Pesticides, liquid, toxic, n.o.s. (Endothal)
Hazard Class 6.1
UN-No 2902
Packing Group PG III
Reportable Quantity (RQ): 1,000 lbs (endothall)

ICAO

UN-No 2902
Proper Shipping Name Pesticide, liquid, toxic, n.o.s. (Endothall)
Hazard Class 6.1
Packing Group PG III

IATA

UN-No 2902
Proper Shipping Name Pesticide, liquid, toxic, n.o.s. (Endothall)
Hazard Class 6.1
Packing Group PG III
ERG Code 6 L

IMDG/IMO

Proper Shipping Name Pesticide, liquid, toxic, n.o.s. (Endothall)
Hazard Class 6.1
UN-No 2902
Packing Group PG III
EmS No. F-A, S-A

15. REGULATORY INFORMATION

International Inventories

USA

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372.

12-174 - Hydrothol® 191 Aquatic algicide and herbicide

SARA 311/312 Hazardous Categorization

| | |
|-----------------------------------|-----|
| Chronic Health Hazard | No |
| 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 does not contain any HAPs.

CERCLA

RCRA

Pesticide Information

State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

State Right-to-Know

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

16. OTHER INFORMATION

Revision Date

16-Dec-2009

Revision Summary

Update section 1 Update section 5

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End of MSDS