







Material Safety Data Sheet

United Phosphorus, Inc.

NFPA	PPE		
			

Issued Date 07-Feb-2007

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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	1-800-438-6071	8:00 am to 5:00 pm EST

Product Name	Cascade
EPA Reg #	70506-176
Recommended Use	Aquatic herbicide
Product Code	12-204B

2. HAZARDS IDENTIFICATION

Emergency Overview

Causes irreversible eye damage
May be fatal if swallowed
May be fatal if inhaled
Harmful if absorbed through skin

DANGER!

Appearance Yellow, Brown.

Physical State Liquid.

Odor Slight chlorine.

Potential Health Effects

- Principle Routes of Exposure
- Inhalation
- Skin contact

Eyes Causes irreversible eye damage.
Skin May cause mild skin irritation.
Inhalation Slightly toxic if inhaled.
Ingestion Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients Name

Chemical Name	CAS-No	Weight %	OSHA PEL
Dipotassium endothall salt	2164-07-0	40.3	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 to fresh air. 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. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Explosive Properties

Flash Point	Not available
Autoignition Temperature	Not available
Flammability Limits in Air	Not available
Extngushing Media	Use: Water spray Carbon dioxide (CO2) Dry chemical
Fire/Explosion Hazard	No information available
Hazardous Combustion Products	Extreme temperatures convert Endothall product to endothall anhydride which is a strong vessicant causing blistering of eyes, mucous membranes and skin.

NFPA

Health 3

Flammability 0

Instability 1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Avoid contact with skin, eyes and clothing.
Environmental Precautions	Do not flush into surface water or sanitary sewer system. 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 pertinenet environmental permits.
Methods for Clean-up	Remove all ignition sources. Soak up with inert absorbent material. Ground and bond containers when transferring material. Keep in suitable and closed containers for disposal.

7. HANDLING AND STORAGE

Handling	Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Keep out of reach of children. Empty containers may contain hazardous residues.
Storage	Store in an area where cross-contamination with pesticides, fertilizers, food or feed could not occur.

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. 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	Tightly fitting safety goggles.
Skin Protection	Chemical resistant gloves. waterproof gloves. Long sleeved clothing. Long pants. Socks and footwear.
Respiratory Protection	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	Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Yellow Brown	Odor	Slight chlorine
Physical State	Liquid	pH	7.4
Boiling Point/Range	>100 °C	Melting Point/Range	Not available
Specific Gravity	1.285	Solubility	Miscible
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	no data available	Percent Solids	Not available
Percent Volatiles	59.7		

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions
Conditions to Avoid	No information available
Incompatible Materials	No materials to be especially mentioned
Hazardous Decomposition Products	Extreme temperatures may convert endothall product to endothall anhydride, a strong vesicant, causing blistering of eyes, mucous membranes and skin.
Possibility of Hazardous Polymerization	None under normal processing

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Although no allergic skin reactions were observed in guinea pigs following exposure to this material in water, allergic skin reactions were observed following exposure to this material in ethanol. Repeated application to the skin of rats produced severe skin irritation, liver, and kidney effects considered to be secondary to irritation, and increased mortality. Long-term dietary administration produced no adverse effects in rats. Dermal - Slightly toxic to Rabbits (LD50 2,000 mg/kg) Skin irritation - Non-irritating to rabbits
Inhalation - Slightly toxic to rats (4 hr LC50 0.83 mg/l) aerosol Eye irritation - Cause irreversible eye damage in rabbits Endothall- Intentional swallowing of 40 ml led to death within 12-hours. Skin allergy was observed in guinea pigs following repeated exposures. 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. Skeletal anomalies were observed in the offspring of rabbits and mice exposed orally 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

Carcinogenicity

There are no known carcinogenic chemicals in this product.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Endothall dipotassium salt ecotoxicity

Acute Contact Toxicity Honey Bee (*Apis mellifera*)

For endothall acid, mono-amine salt, and dipotassium salt:

Practically non-toxic

Acute Toxicity Avian

Mallard duck(*Anas platyrhynchos*), LD50 = 328 mg/kg

Acute Toxicity Freshwater Fish

Bluegill sunfish(*Lepomis macrochirus*),flow-thru, EC50 = 1071 ppm

Rainbow trout(*Oncorhynchus mykiss*),flow-thru,EC50 =363 ppm

Chanel catfish(*Ictalurus punctatus*), static, EC50 = >100 ppm

Acute Toxicity Freshwater Invertebrates

Waterflea(*Daphnia magna*), flow-thru 48hr, EC50 = 223 ppm

Scud(*Gammarius lacustris*),static 48hr, EC50 = 313 ppm

Acute Toxicity Estuarine/Marine Fish

Sheepshead minnow(*Cyrinodon variegates*), flow-thru 96hr,

EC50 = 340 ppm

Coho salmon(*Oncorhynchus kisutch*)static, 96hr, EC50 = >100ppm

Acute Toxicity Estuarine/Marine Invertebrates

Mysid shrimp(*Mysidopsis bahia*), flow-thru 96hr, EC50 = 257 ppm

Eastern oyster(*Crassostrea virginica*)shell deposition,

flow-thru 96hr, EC50 = 335 ppm. Chem Fate:. This material is rapidly degraded in

aqueous systems by indigenous microbial population to CO₂ and other non-toxic natural products.

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

Non refillable container. Do not reuse this container. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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

ICAO

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

IATA

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

IMDG/IMO

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

15. REGULATORY INFORMATION

International Inventories

12-204B
Cascade

Chemical Name	TSCA	DSL	NDSL	EINECS/ ELINCS	ENCS	CHINA	KECL	AICS
Dipotassium endothall salt	Present		X	X				

USA

Federal Regulations

SARA 313

Y

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values
Dipotassium endothall salt	2164-07-0	40.3	1.0

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

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Dipotassium endothall salt		X			

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 20-Aug-2013

Revision Summary
Recurrent confirmation/update of data

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End of MSDS