



cerexagri

# HYDROTHOL 191 Aquatic algicide and herbicide

Material Safety Data Sheet

Cerexagri, Inc.

## 1 PRODUCT AND COMPANY IDENTIFICATION

**Agrichemicals Group**  
Cerexagri, Inc.  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406

**EMERGENCY PHONE NUMBERS:**  
Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887  
Medical: Rocky Mountain Poison Control Center  
(866) 767-5089 (24Hrs)

| Information Telephone Numbers | Phone Number   | Available Hrs        |
|-------------------------------|----------------|----------------------|
| R&D Technical Service         | 610-878-6100   | 8:00am to 5:00pm EST |
| Customer Service              | 1-800-438-6071 | 8:00am - 5:00 pm EST |

Product Name HYDROTHOL 191 Aquatic algicide and herbicide  
Product Synonym(s)

Chemical Family Dicarboxylic Acid- Monoamine Salt  
Chemical Formula C<sub>8</sub>H<sub>9</sub>O<sub>5</sub> + HN(CH<sub>3</sub>)<sub>2</sub> R, (where R is C<sub>8</sub>-C<sub>18</sub>)  
Chemical Name Endothall Mono ( N, N-Dimethylalkylamine ) Salt  
EPA Reg Num 4581-174  
Product Use Aquatic herbicide and algicide

## 2 COMPOSITION / INFORMATION ON INGREDIENTS

| Ingredient Name                                | CAS RegistryNumber | Typical Wt. % | OSHA |
|--|--------------------|---------------|------|
| Mono(N,N-dimethylalkylamine) salt of endothall | 66330-88-9         | 53.0          | Y    |

The substance(s) marked with a "Y" in the OSHA column, are identified as hazardous chemicals according to the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200)

## 3 HAZARDS IDENTIFICATION

### Emergency Overview

Yellowish brown liquid with very faint chlorine odor.

KEEP OUT OF REACH OF CHILDREN.

DANGER!

Causes irreversible eye damage

MAY BE FATAL IF ABSORBED THROUGH SKIN.

MAY BE FATAL IF SWALLOWED.

CAUSES SKIN BURNS.

HARMFUL IF INHALED.

Do not get in eyes, on skin or on clothing.

### Potential Health Effects

Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. Based on single exposure animal tests, it is considered to be moderately toxic if swallowed or absorbed through skin, slightly toxic if inhaled and severely irritating to eyes and skin.



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### 4 FIRST AID MEASURES

#### IF IN EYES,

- Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

IF ON SKIN, immediately wash with cool/cold water. If irritation develops, immediately obtain medical attention.

#### IF SWALLOWED,

- Call a poison control center or doctor immediately for treatment advice.
- 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.
- Do not give anything by mouth to an unconscious person.

#### IF INHALED,

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for further treatment advice.

### 5 FIRE FIGHTING MEASURES

#### Fire and Explosive Properties

|                           |            |                    |
|---------------------------|------------|--------------------|
| Auto-Ignition Temperature | NE         |                    |
| Flash Point               | >100 deg C | Flash Point Method |
| Flammable Limits- Upper   | N/A        |                    |
| Lower                     | N/A        |                    |

#### Extinguishing Media

Use water spray, carbon dioxide, foam or dry chemical.

#### Fire Fighting Instructions

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

#### Fire and Explosion Hazards

None known.



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### 6 ACCIDENTAL RELEASE MEASURES

#### In Case of Spill or Leak

Small spills: soak up with an inert absorbent. Scoop up and place in a clean, dry container. Consult with environmental engineer or professional to determine if neutralization is appropriate and for handling procedures for residual materials.

Large spills: Pump into marked containers for disposal or reclamation. 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.

### 7 HANDLING AND STORAGE

#### Handling

Use only with adequate ventilation.

Do not get in eyes, on skin or on clothing. Do not breathe mist.

Empty container may contain hazardous residues. Keep container closed. Wash thoroughly after handling.

#### Storage

Keep from freezing; material may coagulate.

### 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Engineering Controls

Investigate engineering techniques to reduce exposures. Provide ventilation if necessary to minimize exposure. Dilution ventilation is acceptable, but local mechanical exhaust ventilation preferred, if practical, at sources of air contamination such as open process equipment. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

#### Eye / Face Protection

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment immediately available.

#### Skin Protection

Minimize skin contamination by following good industrial hygiene practice. Wearing rubber gloves is recommended. Wash hands and contaminated skin thoroughly after handling.

#### Respiratory Protection

Avoid breathing vapor or mist. Where airborne exposure is likely, use NIOSH approved respirator with a N 95 particulate filter. If exposures cannot be kept at a minimum with engineering controls, use NIOSH approved respiratory protection equipment as noted above. 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 or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

#### Airborne Exposure Guidelines for Ingredients

The components of this product have no established Airborne Exposure Guidelines

-Only those components with exposure limits are printed in this section.

-Skin contact limits designated with a "Y" above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.

-ACGIH Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic reactions.

-WEEL-AIHA Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic skin reactions.



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## 9 PHYSICAL AND CHEMICAL PROPERTIES

|                     |   |
|---------------------|---|
| Appearance/Odor     | Yellowish brown liquid with very faint chlorine odor. |
| pH                  | NA  |
| Specific Gravity    | 1.044 @ 25 deg C                                      |
| Vapor Pressure      | 9.45 X 10 <sup>-6</sup> Torr (endothal amine salt)    |
| Vapor Density       | NA  |
| Melting Point       | N/A   |
| Freezing Point      | <0 deg C  |
| Boiling Point       | 100 deg C   |
| Solubility In Water | >50 g/100ml (amine salt)                              |
| Percent Volatile    | 47.0  |
| Viscosity           | 100 cps @ 25 C  |

## 10 STABILITY AND REACTIVITY

### Stability

This material is chemically stable under normal and anticipated storage and handling conditions.

### Hazardous Polymerization

Does not occur.

### Incompatibility

Materials that react with water.

### Hazardous Decomposition Products

Extreme temperatures may convert endothall product to endothall anhydride, a strong vesicant, causing blistering of eyes, mucous membranes, and skin. (See Section 16)

## 11 TOXICOLOGICAL INFORMATION

### Toxicological Information

Data on this material and/or its components are summarized below.

#### Hydrothol 191

Single exposure (acute) studies indicate that this material is moderately toxic if swallowed (rat LD<sub>50</sub> 233.4 mg/kg) or absorbed through skin (rabbit LD<sub>50</sub> 480.9 mg/kg), slightly toxic if inhaled (rat 4-hr LC<sub>50</sub> 0.7 mg/l) and severely irritating to rabbit eyes and skin. No skin allergy was observed in guinea pigs following repeated exposure.

#### 7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid (technical active ingredient)

Intentional swallowing of 40 ml of endothall 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 given endothall orally during pregnancy, even at dosages which produced adverse effects on the mothers. Skeletal anomalies were observed in the offspring of rabbits and mice given endothall orally during pregnancy, but only a dosages which produced adverse effects in the mothers. Endothall produced no genetic changes in standard tests using bacterial and animal cells or animals.



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## 12 ECOLOGICAL INFORMATION

### Ecotoxicological Information

Hydrothol 191

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.

7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid (technical active ingredient)

Endothall is slightly toxic to bluegill sunfish (96-hr LC50 77 mg/l), rainbow trout (96-hr LC50 49 mg/l), *Daphnia magna* (48-hr 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).

Endothall has an 8-day LC50 of >5,000 ppm (bobwhite quail and mallard ducklings), a 21-day LD50 of 111 mg/kg (mallard ducks), a 30-day MATC of 19 mg/l (fathead minnows) and a 21-day MATC of 6.7 mg/l (*Daphnia magna*). No adverse effects were observed in mallard ducks and bobwhite quail following repeated (20-weeks) administration in the diet.

### Chemical Fate Information

7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid (technical active ingredient)

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). Endothall adsorbed readily from aqueous solution on to Crosby silt loam. Endothall 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

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use 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.

## 14 TRANSPORT INFORMATION

|                         |  |
|-------------------------|--|
| DOT Name                | Pesticides, liquid, toxic, n.o.s.  |
| DOT Technical Name      | Endothall  |
| DOT Hazard Class        | 6.1  |
| UN Number               | 2902   |
| DOT Packing Group       | PG III   |
| RQ                      | 1000lbs.   |
| DOT Special Information | DOT HM215C = The Keep away from foodstuffs (KAFF) label is authorized until October 2003. During this transition period the KAFF or Toxic label may be used. After October 2003, all 6.1- PG III materials must carry the Toxic label. |

## 15 REGULATORY INFORMATION



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### Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370)

|                          |   |                            |   |
|--------------------------|---|----------------------------|---|
| Immediate (Acute) Health | Y | Fire                       | N |
| Delayed (Chronic) Health | N | Reactive                   | N |
|                          |   | Sudden Release of Pressure | N |

### Ingredient Related Regulatory Information:

#### SARA Reportable Quantities

Mono(N,N-dimethylalkylamine) salt of endothall

CERCLA RQ

NE

SARA TPQ

NE

## 16 OTHER INFORMATION

### Revision Information

|                           |             |                 |   |
|---------------------------|-------------|-----------------|---|
| Revision Date             | 28 JUL 2003 | Revision Number | 5 |
| Supersedes Revision Dated | 08-JUL-2002 |                 |   |

### Revision Summary

Update section 4 add skin statement

### Key

NE= Not Established NA= Not Applicable (R) = Registered Trademark

### Miscellaneous

Proper PPE and ventilation should be used when suing high heat, such as welding or oxy-acetylene torch cutting, on machinery that may have endothal residue.

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# Safety Data Sheet

Preparation Date 28-Apr-2015

Revision date 31-Dec-2018

Revision Number: 6

## 1. Identification of the Substance/Preparation and of the Company/Undertaking

### Product Identifier

**Product Description:** Hydrothol® Granular Aquatic Algicide and Herbicide

### Other means of identification

**Product code** 12-172  
**Registration number(s)** 70506-174

### Recommended use of the chemical and restrictions on use

**Recommended use** Aquatic. Algaecide. -. Herbicide.  
**Uses advised against** Activities contrary to label recommendation

### Details of the Supplier of the Safety Data Sheet

**Supplier Address**  
UPL NA Inc.  
630 Freedom Business Center  
Suite 402  
King of Prussia, PA 19406

### Emergency telephone number

**Company Phone Number** 1-800-438-6071  
**Emergency telephone number** Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887  
Medical: Rocky Mountain Poison Control Center  
(866) 673-6671 (24hrs)

## 2. Hazards Identification

### Classification

#### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral

Category 4

### Label elements

### EMERGENCY OVERVIEW

#### WARNING

#### Hazard Statements

HARMFUL IF SWALLOWED



**Appearance** grey brown

**Physical state** solid

**Odor** Solvent-like

#### Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards Not Otherwise Classified (HNOC)**

**OTHER INFORMATION**

**3. Composition/Information on Ingredients**

| Chemical name                                | CAS No     | Weight-% |
|--|------------|----------|
| Mono(N,N-dimethylalkylamine)salt of endothal | 66330-88-9 | 11       |

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

**4. First aid measures**

**FIRST AID MEASURES**

|                     |  |
|---------------------|--|
| <b>Eye contact</b>  | 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. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.               |
| <b>Skin contact</b> | Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Seek immediate medical attention/advice. Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. |
| <b>Inhalation</b>   | 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. Move to fresh air. Call a physician or poison control center immediately. Artificial respiration and/or oxygen may be necessary.      |
| <b>Ingestion</b>    | Call a physician or poison control center immediately. May produce an allergic reaction. Clean mouth with water. Never give anything by mouth to an unconscious person. Seek immediate medical attention/advice. Do not induce vomiting without medical advice.  |

**Most Important Symptoms and Effects, Both Acute and Delayed**

**Most Important Symptoms and Effects** Burning feeling and temporary redness.

**Indication of Any Immediate Medical Attention and Special Treatment Needed**

**Notes to physician** No information available. Treat symptomatically.

**5. Fire-fighting measures**

**Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media** no data available.

**Specific hazards arising from the chemical**

No information available.



**Hazardous combustion products** Extreme temperatures convert Endothall product to endothall anhydride which is a strong vesicant causing blistering of eyes, mucous membranes and skin.

**Explosion data**

**Protective equipment and precautions for firefighters**

Use personal protective equipment. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions** Avoid contact with skin, eyes and clothing. Wear protective gloves/protective clothing and eye/face protection.

**Environmental Precautions**

**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. Local authorities should be advised if significant spillages cannot be contained.

**Methods and material for containment and cleaning up**

**Methods for Clean-Up** Sweep up and shovel into suitable containers for disposal. Keep in suitable and closed containers for disposal. Shovel or sweep up.

**7. Handling and Storage**

**Precautions for safe handling**

**Handling** Avoid dust formation. Avoid breathing dust. Keep out of reach of children. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin and eyes. Empty containers may contain hazardous residues.

**Conditions for safe storage, including any incompatibilities**

**Storage** Store in an area where cross-contamination with pesticides, fertilizers, food or feed could not occur. Keep tightly closed in a dry and cool place. Keep in properly labelled containers. Keep containers tightly closed in a cool, well-ventilated place.

**incompatible materials** No information available.

**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.

**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**

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

**9. Physical and Chemical Properties**

**Information on basic physical and chemical properties**

|                       |                          |             |              |
|-----------------------|--------------------------|-------------|--------------|
| <b>Physical state</b> | solid                    | <b>Odor</b> | Solvent-like |
| <b>Appearance</b>     | grey brown               |             |              |
| <b>color</b>          | No information available |             |              |

| <u>Property</u>                        | <u>VALUES</u>                                     | <u>Remarks/ • Method</u> |
|--|---|--------------------------|
| pH                                     | 4.6   |                          |
| Melting point/freezing point           | 5.6 °C / 42 °F                                    |                          |
| Boiling Point/Range                    | No information available                          |                          |
| Flash Point                            | No information available                          |                          |
| Evaporation Rate                       | No information available                          |                          |
| Flammability (solid, gas)              | No information available                          |                          |
| Flammability limit in air              |   |                          |
| Upper Flammability Limit               | No information available                          |                          |
| Lower Flammability Limit               | No information available                          |                          |
| vapor pressure                         | 2.09 X 10 <sup>-5</sup> mmHg @25 C(Endothal salt) |                          |
| Vapor Density                          | No information available                          |                          |
| Specific gravity                       | No information available                          |                          |
| Water solubility                       | No information available                          |                          |
| Solubility in Other Solvents           | No information available                          |                          |
| Partition coefficient: n-octanol/water | No information available                          |                          |
| Autoignition temperature               | no data available                                 |                          |
| Decomposition temperature              | No information available                          |                          |
| Viscosity, kinematic                   | No information available                          |                          |
| Dynamic viscosity                      | No information available                          |                          |
| Explosive properties                   | No information available                          |                          |
| Oxidizing properties                   | No information available                          |                          |

**OTHER INFORMATION**

|                  |                          |
|------------------|--------------------------|
| Softening point  | No information available |
| molecular weight | No information available |
| VOC Content      | No information available |
| Liquid Density   | No information available |

**10. Stability and Reactivity**

**Reactivity**

no data available

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

None under normal processing.

**Conditions to avoid**

Avoid dust formation. Not known.

**Incompatible materials**

No information available.

**Hazardous decomposition products**

Extreme temperatures may convert endothall product to endothall anhydride, a strong vesicant, causing blistering of eyes, mucous membranes and skin.

**11. Toxicological Information**

**Information on Likely Routes of Exposure**

**Product information**

Single exposure studies indicate: Oral - Slightly toxic to rats (LD50 1,540 mg/kg)  
Dermal - Practically non-toxic to rabbits (LD50 >10,000 mg/kg)  
Inhalation - Practically non-toxic to rats (4 hr LC50 5.32 mg/l)  
Skin irritation - Severely irritating  
Eye irritation - Severely irritating 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. Skeletal 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.

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | May cause irritation of respiratory tract. |
| <b>Eye contact</b>  | May cause irreversible damage to eyes.     |
| <b>Skin contact</b> | Irritating to skin.                        |
| <b>Ingestion</b>    | HARMFUL IF SWALLOWED.                      |

**Information on Toxicological Effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

|                                 |  |
|---------------------------------|--|
| <b>Sensitization</b>            | No information available.                                  |
| <b>Mutagenic effects</b>        | no data available.   |
| <b>Carcinogenicity</b>          | There are no known carcinogenic chemicals in this product. |
| <b>Reproductive effects</b>     | Not Available.   |
| <b>STOT - Single Exposure</b>   | no data available.   |
| <b>STOT - Repeated Exposure</b> | no data available.   |
| <b>Aspiration hazard</b>        | No information available.                                  |

**Numerical Measures of Toxicity - Product information**

|                        |                                    |
|------------------------|------------------------------------|
| <b>LD50 Oral</b>       | 1540 mg/kg (rat)                   |
| <b>LD50 Dermal</b>     | > 10000 mg/kg (rat)                |
| <b>LC50 Inhalation</b> | LC50/inhalation/4h/rat = 5.32 mg/l |

**12. Ecological Information**

**ecotoxicity**

Endothall mono amine salt:  
Acute contact toxicity Honey Bee  
Practically non toxic  
Acute Toxicity Avain  
Northern Bobwhite Quail LD50  
736 mg/kg  
Acute Toxicity Freshwater Fish EC50  
Bluegill sunfish 0.94 ppm  
Rainbow trout 0.56 ppm  
Cutthroat trout 0.18 ppm  
Channel catfish 0.49 ppm  
Acute Toxicity Freshwater Invertebrates EC50  
Daphnia magna 0.36 ppm (48 hr)  
Grasshrimp 0.05 ppm (96hr)  
Scud 2.0 ppm (48hr)  
Acute Toxicity Marine Invertebrates (flow thru) EC50 Mysid shrimp 2.2 ppm (96 hr)  
Acute Toxicity Marine Fish (Flow thru) EC50  
Sheepshead minnow 3.5 ppm (96 hr)

**Persistence/Degradability**

no data available.

**Bioaccumulation/ Accumulation**

No information available.

**Other Adverse Effects**

no data available

**13. Disposal Considerations**

**Waste Treatment Methods**

|                               |   |
|-------------------------------|---|
| <b>Waste Disposal Method</b>  | 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

**TDG** NOT REGULATED

**IATA** NOT REGULATED

**IMDG**

NOT REGULATED

### 15. Regulatory Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**signal word** DANGER

**Ventilation Control** 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.

**Keep out of Reach of Children. Causes irreversible eye damage. May be fatal if swallowed. Toxic to fish and aquatic invertebrates.**

#### International Inventories

|                   |             |
|-------------------|-------------|
| USINV             | Not present |
| DSL/NDSL          | Not present |
| EINECS/<br>ELINCS | Not Present |
| ENCS              | Not Present |
| China             | Not Present |
| KECL              | Not Present |
| PICCS             | Not Present |
| AICS              | Not Present |
| TSCA              | Not Present |

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List  
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
ENCS - Japan Existing and New Chemical Substances  
IECSC - China Inventory of Existing Chemical Substances  
KECL - Korean Existing and Evaluated Chemical Substances  
PICCS - Philippines Inventory of Chemicals and Chemical Substances  
AICS - Australian Inventory of Chemical Substances

#### 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 Title 40 of the Code of Federal Regulations, Part 372.

##### CERCLA

Not applicable

##### CERCLA

SARA Product RQ 0

##### RCRA

#### Pesticide Information

#### State Regulations

**State Right-to-Know**

Not applicable

**International regulations**

**U.S. EPA Label information**

EPA Pesticide registration number 70506-174

**16. Other Information**

**NFPA**                      **HEALTH 3**                      **flammability 0**                      **Instability 0**                      **Physical hazard -**

**Preparation Date**                      28-Apr-2015

**Revision date**                      31-Dec-2018

**Revision Summary**

Update logo Update section 1 Update Section 16\*\*\*

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**End of SDS**



# Safety Data Sheet

**United Phosphorus, Inc.**

Preparation Date 27-Apr-2015

Revision date 19-Aug-2016

Revision Number: 2

## 1. Identification of the Substance/Preparation and of the Company/Undertaking

### Product identifier

**Product Description:** Teton

### Other means of identification

**Item#:** 12-174B  
**UN-No** 2902  
**Synonyms** Not Available  
**Registration number(s)** 70506-175

### Recommended use of the chemical and restrictions on use

**Recommended use** Aquatic herbicide, algicide  
**Uses advised against** Activities contrary to label recommendation

### Details of the Supplier of the Safety Data Sheet

#### **Supplier Address**

United Phosphorus Inc.  
630 Freedom Business Center  
Suite 402  
King of Prussia, PA 19406

### Emergency telephone number

**Company Phone Number** 1-800-438-6071  
**Emergency telephone number** Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887  
Medical: Rocky Mountain Poison Control Center  
(866) 673-6671 (24hrs)

## 2. Hazards Identification

### Classification

#### **OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                      |                           |
|--------------------------------------|---------------------------|
| Acute toxicity - Oral                | Category 3                |
| Acute toxicity - Dermal              | Category 3                |
| Acute toxicity - Inhalation (Vapors) | Category 2                |
| Skin Corrosion/Irritation            | Category 1 Sub-category B |
| Serious eye damage/eye irritation    | Category 1                |

### Label elements

#### **EMERGENCY OVERVIEW**

**DANGER**

#### **hazard statements**

Toxic if swallowed  
Toxic in contact with skin  
Fatal if inhaled

**appearance** Dark yellow light brown**Physical state** Liquid**Odor** Slight chlorine**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Do not breathe dust/fume/gas/mist/vapors/spray  
 Use only outdoors or in a well-ventilated area  
 In case of inadequate ventilation wear respiratory protection

**IF ON SKIN:** Wash with plenty of soap and water

Call a POISON CENTER or doctor if you feel unwell

Remove/Take off immediately all contaminated clothing

Wash contaminated clothing before reuse

**IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing

Immediately call a POISON CENTER or doctor/physician

**IF SWALLOWED:** Immediately call a POISON CENTER or doctor/physician

Rinse mouth

**Precautionary Statements - Storage**

Store locked up

Store in a well-ventilated place. Keep container tightly closed

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards Not Otherwise Classified (HNOC)****OTHER INFORMATION**

### 3. Composition/information on Ingredients

| Chemical name                                 | CAS-No     | Weight % | Trade secret |
|---|------------|----------|--------------|
| Mono(N,N-dimethylalkylamine)salt of endothall | 66330-88-9 | 53       |              |

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

### 4. First aid measures

**FIRST AID MEASURES**

|                       |   |
|-----------------------|---|
| <b>General advice</b> | Immediate medical attention is not required. Show this safety data sheet to the doctor in attendance.   |
| <b>Eye contact</b>    | 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. |
| <b>Skin contact</b>   | Wash off immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.   |
| <b>Inhalation</b>     | Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give   |



artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

**Ingestion** Call a physician or poison control center immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

**Protection of First-aiders** Use personal protective equipment.

**Most Important Symptoms and Effects, Both Acute and Delayed**

**Most Important Symptoms and Effects** No information available.

**Indication of Any Immediate Medical Attention and Special Treatment Needed**

**Notes to physician** No information available. Treat symptomatically.

## 5. Fire-fighting measures

**Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>). Aquatic. Foam.

**Unsuitable extinguishing media** No information available.

**Specific hazards arising from the chemical**

Thermal decomposition can lead to release of irritating gases and vapours.

**Hazardous combustion products** Extreme temperatures convert Endothall product to endothall anhydride which is a strong vesicant causing blistering of eyes, mucous membranes and skin.

**Explosion data**

**Protective equipment and precautions for firefighters**

Use personal protective equipment. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions** Avoid contact with skin and eyes. Use personal protective equipment. Wear protective gloves/protective clothing and eye/face protection.

**Environmental Precautions**

**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.

**Methods and material for containment and cleaning up**

**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

**Precautions for safe handling**

**Handling** Keep out of reach of children. Empty containers may contain hazardous residues. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

**Conditions for safe storage, including any incompatibilities**

**Storage** Keep in a dry place. Keep containers tightly closed in a cool, well-ventilated place. Keep from freezing.

**incompatible materials** Strong oxidizing agents.

## 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**

Use eye protection to avoid eye contact. Where there is potential for eye contact have eye flushing equipment available. Goggles.

#### **Skin protection**

Wear protective gloves/clothing. Chemical resistant footwear plus socks.

#### **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**

Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product.

## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

|                       |                          |             |                 |
|-----------------------|--------------------------|-------------|-----------------|
| <b>Physical state</b> | Liquid                   | <b>Odor</b> | Slight chlorine |
| <b>appearance</b>     | Dark yellow light brown  |             |                 |
| <b>color</b>          | No information available |             |                 |

### Property

### VALUES

### Remarks/ • Method

|   |                                    |  |
|---|------------------------------------|--|
| <b>pH</b>                                     | No information available           |  |
| <b>Melting point/freezing point</b>           | No information available           |  |
| <b>Boiling Point/Range</b>                    | 100 °C / 212 °F                    |  |
| <b>Flash Point</b>                            | > 100 C                            |  |
| <b>Evaporation Rate</b>                       | No information available           |  |
| <b>flammability (solid, gas)</b>              | No information available           |  |
| <b>Flammability limit in air</b>              |                                    |  |
| <b>Upper Flammability Limit</b>               | No information available           |  |
| <b>Lower Flammability Limit</b>               | No information available           |  |
| <b>vapor pressure</b>                         | 9.45 X 10 <sup>-6</sup> Torr(Salt) |  |
| <b>Vapor Density</b>                          | No information available           |  |
| <b>Specific gravity</b>                       | 1.044 @25 C                        |  |
| <b>Water solubility</b>                       | No information available           |  |
| <b>Solubility in Other Solvents</b>           | No information available           |  |
| <b>Partition coefficient: n-octanol/water</b> | No information available           |  |
| <b>Autoignition temperature</b>               | No information available           |  |
| <b>decomposition temperature</b>              | No information available           |  |
| <b>Viscosity, kinematic</b>                   | No information available           |  |
| <b>Dynamic viscosity</b>                      | No information available           |  |
| <b>Explosive properties</b>                   | No information available           |  |

**Oxidizing properties** No information available

**OTHER INFORMATION**

**Softening point** No information available  
**molecular weight** No information available  
**VOC Content** No information available  
**density** No information available  
**Bulk density** No information available

**10. Stability and Reactivity**

**Reactivity**

no data available

**Chemical stability**

Stable under normal conditions.

**Possibility of hazardous reactions**

None under normal processing.

**Hazardous polymerization** Hazardous polymerisation does not occur.

**Conditions to avoid**

Not known.

**Incompatible materials**

Strong oxidizing agents.

**Hazardous decomposition products**

Carbon oxides.

**11. Toxicological Information**

**Information on Likely Routes of Exposure**

**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. Skeletal 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.

**Inhalation** Harmful by inhalation.

**Eye contact** Corrosive. May cause irreversible damage to eyes.

**Skin contact** Causes severe skin burns.

**Ingestion** MAY BE FATAL IF SWALLOWED.

**Information on Toxicological Effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**sensitization** No information available.  
**Mutagenic effects** No information available.  
**Carcinogenicity** There are no known carcinogenic chemicals in this product.  
**Reproductive effects** Not Available.  
**STOT - Single Exposure** No information available.  
**STOT - repeated exposure** No information available.  
**Aspiration hazard** No information available.

**Numerical Measures of Toxicity - Product information**

**LD50 Oral** 233 mg/kg (rat)  
**LD50 Dermal** 480.9 mg/kg (rat)  
**LC50 Inhalation:** 0.7 mg/l (rat) (4-hr)

|                                   |
|-----------------------------------|
| <b>12. Ecological Information</b> |
|-----------------------------------|

**ecotoxicity**

Endothall mono amine salt:  
 Acute contact toxicity Honey Bee  
 Practically non toxic  
 Acute Toxicity Avain  
 Northern Bobwhite Quail LD50  
 736 mg/kg  
 Acute Toxicity Freshwater Fish EC50  
 Bluegill sunfish 0.94 ppm  
 Rainbow trout 0.56 ppm  
 Cutthroat trout 0.18 ppm  
 Channel catfish 0.49 ppm  
 Acute Toxicity Freshwater Invertebrates EC50  
 Daphnia magna 0.36 ppm (48 hr)  
 Grasshrimp 0.05 ppm (96hr)  
 Scud 2.0 ppm (48hr)  
 Acute Toxicity Marine Invertebrates (flow thru) EC50 Mysid shrimp 2.2 ppm (96 hr)  
 Acute Toxicity Marine Fish (Flow thru) EC50  
 Sheepshead minnow 3.5 ppm (96 hr)

**Persistence/Degradability**

No information available.

**Bioaccumulation/ Accumulation**

Does not bioaccumulate.

**Other Adverse Effects**

No information available

|                                    |
|------------------------------------|
| <b>13. Disposal Considerations</b> |
|------------------------------------|

**Waste Treatment Methods**

**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** Refer to product label.

## 14. Transport Information

### DOT

|                           |  |
|---------------------------|--|
| UN-No                     | 2902   |
| Proper shipping name      | Pesticides, liquid, toxic, n.o.s. (Endothal) |
| Hazard class              | 6.1  |
| Packing group             | PG III                                       |
| Reportable Quantity (RQ): | 1,000 lbs (endothall)                        |

### TDG

### 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                                      |

### IMDG/IMO

|                      |   |
|----------------------|---|
| UN-No                | 2902  |
| Proper shipping name | Pesticide, liquid, toxic, n.o.s (Endothall) |
| Hazard class         | 6.1   |
| Packing group        | PG III                                      |
| EmS No.              | F-A, S-A                                    |

## 15. Regulatory Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**signal word** DANGER

**Ventilation Control** 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.

**Keep out of Reach of Children. Causes irreversible eye damage. May be fatal if swallowed. Harmful if inhaled or absorbed through skin.**

### International Inventories

|                   |                 |
|-------------------|-----------------|
| USINV             | Not determined  |
| DSL/NDSL          | Not determined  |
| EINECS/<br>ELINCS | Does not comply |

|       |                 |
|-------|-----------------|
| ENCS  | Does not comply |
| China | Does not comply |
| KECL  | Does not comply |
| PICCS | Does not comply |
| AICS  | Does not comply |
| TSCA  | Does not comply |

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List  
 EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
 ENCS - Japan Existing and New Chemical Substances  
 IECS - China Inventory of Existing Chemical Substances  
 KECL - Korean Existing and Evaluated Chemical Substances  
 PICCS - Philippines Inventory of Chemicals and Chemical Substances  
 AICS - Australian Inventory of Chemical Substances

### 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 Title 40 of the Code of Federal Regulations, Part 372.

#### SARA 311/312 Hazardous

##### Categorization

|                                   |     |
|-----------------------------------|-----|
| Acute health hazard               | yes |
| Chronic health hazard             | NO  |
| Fire hazard                       | No  |
| Sudden release of pressure hazard | No  |
| Reactive Hazard                   | yes |

#### CERCLA

SARA Product RQ 0

#### RCRA

##### Pesticide Information

##### State Regulations

##### State Right-to-Know

##### International regulations

##### U.S. EPA Label information

EPA Pesticide registration number 70506-175

### 16. Other Information

|             |                          |                |               |                   |
|-------------|--------------------------|----------------|---------------|-------------------|
| <u>NFPA</u> | HEALTH 3                 | flammability 0 | Instability 0 | Physical hazard - |
| Eye Contact | No information available |                |               |                   |

Preparation Date 27-Apr-2015  
 Revision date 19-Aug-2016

Revision Summary  
 Correct spelling error(s)

#### Disclaimer

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**End of MSDS**

