1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name**: Hydrothol® Granular Aquatic Algicide and Herbicide  
**EPA Reg #**: 70506-174  
**Recommended Use**: Aquatic algicide - herbicide  
**Product Code**: 12-172
2. HAZARDS IDENTIFICATION

Emergency Overview
Causes irreversible eye damage
Harmful by inhalation, in contact with skin and if swallowed
Irritating to skin

DANGER!
Appearance Grey, Brown.  
Physical State Solid.  
Odor Sharp musty.

Potential Health Effects
- Inhalation
- Skin contact
- Eyes Severly irritating to the eyes. Causes irreversible eye damage..
- Skin Severely irritating to the skin.
- Inhalation May cause irritation of respiratory tract.
- Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredients Name</th>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mono(N,N-diethylalkylamine)salt of endothall</td>
<td>66330-88-9</td>
<td>11</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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 
Treat symptomatically
5. FIRE-FIGHTING MEASURES

Flammable Explosive Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability Limits in Air</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Extinguishing Media

- Use: Water spray, Carbon dioxide (CO2), Foam, Dry chemical.

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

- Elevated temperatures can cause decomposition to potentially toxic gases.

NFPA

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>3</td>
</tr>
<tr>
<td>Flammability</td>
<td>0</td>
</tr>
<tr>
<td>Instability</td>
<td>0</td>
</tr>
</tbody>
</table>

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. Keep in suitable and closed containers for disposal.

7. HANDLING AND STORAGE

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.

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.
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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Grey Brown</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
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</tr>
<tr>
<td>Specific Gravity</td>
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</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
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<tr>
<td>Bulk Density</td>
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<tr>
<td>Percent Volatiles</td>
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</tr>
<tr>
<td>Odor</td>
<td>Sharp musty</td>
</tr>
<tr>
<td>pH</td>
<td>(1% solution)4.6</td>
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<tr>
<td>Melting Point/Range</td>
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</tr>
<tr>
<td>Solubility</td>
<td>Dispersible in water</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>2.09 X 10^-5 mmHg @25 C(Endothal salt)</td>
</tr>
<tr>
<td>VOC Content</td>
<td>11.5%</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>No data available</td>
</tr>
<tr>
<td>Percent Solids</td>
<td>Not available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>No data available</td>
</tr>
<tr>
<td>Percent Solids</td>
<td>Not available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions

Conditions to Avoid
Avoid dust formation. Extreme temperatures.

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
Hazardous polymerisation does not occur
11. TOXICOLOGICAL INFORMATION

Acute Toxicity

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.

Chronic Toxicity

There are no known carcinogenic chemicals in this product

Carcinogenicity
12. ECOLOGICAL INFORMATION

Ecotoxicity
Endothall Mono-Amine Salt Ecotoxicity

Acute Contact Toxicity Honey Bee (Apis mellifera) -
For endothall acid, mono-amine salt, and dipotassium salt
Practically non-toxic

Acute Toxicity Avian
Northern Bobwhite Quail (Colinus virginianus) LD50 = 736 mg/kg

Acute Toxicity Freshwater Fish (*static and **flow-thru)
*Bluegill sunfish (Lepomis macrochirus), EC50 = 0.94 ppm
*Rainbow trout (Oncorhynchus mykiss), EC50 = 0.56 ppm
**Rainbow trout (Oncorhynchus mykiss), EC50 = 0.94 ppm
*Cutthroat trout (Oncorhynchus clarki), EC50 = 0.18 ppm
*Channel catfish (Ictalurus punctatus), EC50 = 0.49 ppm
Fathead minnow (Pimephales promelas), EC50 = 0.75 ppm

Acute Toxicity Freshwater Invertebrates (*static)
*Waterflea (Daphnia magna), 48hr, EC50 = 0.36 ppm
*Grassshrimp (Palaemonetes kadiakensis), 96hr, EC50 = 0.05 ppm
*Scud (Gammarus lacustris), 48hr, EC50 = 2.0 ppm
*Scud (Gammarus lacustris), 96hr, EC50 = 0.5 ppm
*Giant salmonfly (Pteronarcys californica), 48hr, EC50 = 3.25 ppm

Acute Toxicity Estuarine/Marine Fish (**Flow-thru)
**Sheepshead minnow (Cyrinodon variegatus), 96hr, EC50 = 3.5 ppm

Acute Toxicity Estuarine/Marine Invertebrates (**Flow-thru)
**Mysid shrimp (Mysidopsis bahia), 96hr, EC50 = 2.2 ppm
**Eastern oyster (Crassostrea virginica), shell deposition,
96hr, EC50 = 0.6 ppm

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
Not regulated

ICAO
Not regulated

IATA
Not regulated

IMDG/IMO
Not regulated

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.

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
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 15-Oct-2010

Revision Summary
Update section 12

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End of MSDS