



Cerexagri-Nisso LLC

HYDROTHOL (R) 191 Aquatic algicide and herbicide

Material Safety Data Sheet

Cerexagri-Nisso LLC

1 PRODUCT AND COMPANY IDENTIFICATION

Pre-Harvest Division

Cerexagri-Nisso LLC
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 (R) 191 Aquatic algicide and herbicide
Product Synonym(s)

Chemical Family Dicarboxylic Acid- Monoamine Salt
Chemical Formula C₈H₉O₅ + HN(CH₃)₂ R, (where R is C₈-C₁₈)
Chemical Name Endothall Mono (N, N-Dimethylalkylamine) Salt
EPA Reg Num 4581-174-82695
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.

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



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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 ⁻⁶ 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 LD50 233.4 mg/kg) or absorbed through skin (rabbit LD50 480.9 mg/kg), slightly toxic if inhaled (rat 4-hr LC50 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 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 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.



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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)

This material 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).

This material 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). 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

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	05 JAN 2006	Revision Number	13
Supersedes Revision Dated	03-JAN-2006		

Revision Summary

Update section 1

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.

Hydrothol (R) is a registered trademark of Cerexagri, Inc.

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