

FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL:

1-800-654-6911 (OUTSIDE
USA: 1-423-780-2970)

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:

1-800-424-9300 (OUTSIDE
USA: 1-703-527-3887)

FOR ALL SDS QUESTIONS & REQUESTS, CALL:

1-800-511-MSDS (OUTSIDE
USA: 1-423-780-2347)

PRODUCT NAME: **Navitrol Landscape and Aquatic Herbicide**

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Supplier

Applied Biochemists (WI)
1400 Bluegrass Lakes Pkwy ,
Alpharetta, GA, 30004
USA

Telephone: +18005585106

Telefax: +12626741786

Web: www.appliedbiochemists.com

REVISION DATE: 02/12/2016

SUPERCEDES: 08/21/2015

MSDS Number: 000000024560

SYNONYMS: None

CHEMICAL FAMILY: None

DESCRIPTION / USE: Water treatment chemical

FORMULA: None established

Manufacturer

Advantis Technologies
1200 Bluegrass Lakes Parkway
Alpharetta, GA 30004
United States of America

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Corrosive to metals : Category 1

Serious eye damage : Category 1

Skin sensitisation : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.

Precautionary statements : **Prevention:**
P234 Keep only in original container.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P312 Call a POISON CENTER/doctor if you feel unwell.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
Storage:
P406 Store in corrosive resistant stainless steel container with a resistant inner liner.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
triclopyr, triethylamine salt	57213-69-1	40 - 50
Ethanamine, N,N-diethyl-	121-44-8	1 - 3
EDTA	60-00-4	0 - 5
Citric Acid	77-92-9	0 - 5

SECTION 4. FIRST AID MEASURES

General Advice:	Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
Inhalation:	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.
Skin Contact:	IF ON SKIN OR CLOTHING: 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.
Eye Contact:	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.
Ingestion:	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.

SECTION 5. FIREFIGHTING MEASURES

Flammability Summary (OSHA):	Combustible
<u>Flammable Properties</u>	
Flash Point:	> 99 °C closed cup
Fire / Explosion Hazards:	Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back. Closed containers may explode (due to the build up of steam pressure) when exposed to extreme heat.
Extinguishing Media:	Alcohol-resistant foam Dry powder Carbon dioxide (CO ₂)
Fire Fighting Instructions:	In case of fire, use normal fire-fighting equipment and the personal protective equipment recommended in Section 8 to include a NIOSH approved self-contained breathing apparatus.
Hazardous Combustion Products:	During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations:	Use the personal protective equipment recommended in Section 8 and a NIOSH approved self-contained breathing apparatus.
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Spill Mitigation Procedures

Air Release:	Keep people away from and upwind of spill/leak. Vapors may be suppressed by the use of water fog.
Water Release:	This material is soluble in water. If the product contaminates rivers and lakes or drains inform respective authorities.
Land Release:	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Do not contaminate ponds, waterways or ditches with chemical or used container.
Additional Spill Information :	Prevent further leakage or spillage if safe to do so. Evacuate personnel to safe areas. Even in case of a full release, due to the small amount of substances present, it is not expected that exposure limits will be reached. Remove all sources of ignition.

SECTION 7. HANDLING AND STORAGE

Handling:	Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Avoid breathing mist or vapor.
Storage:	Store in a cool dry ventilated location, away from sources of ignition or other incompatible conditions and chemicals. Keep container(s) closed. Keep from freezing.
Incompatible Materials for Storage:	Refer to Section 10, "Incompatible Materials."

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation:	Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep airborne exposures below the TLV, PEL or other recommended exposure limit.
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Protective Equipment for Routine Use of Product

Respiratory Protection :	Wear a NIOSH approved respirator if levels above the exposure limits are possible., A NIOSH approved full-face or half-face respirator in combination with chemical goggles., A NIOSH approved full-face air purifying respirator with organic vapor cartridge. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.
Skin Protection :	Avoid contact with skin. Impervious gloves When exposure to high concentrations are prolonged or repeated use protective boots and apron in addition to gloves.
Eye Protection:	Use chemical goggles.
Protective Clothing Type:	Impervious
General Protective Measures:	Ensure that eyewash stations and safety showers are close to the workstation location.

Components with workplace control parameters

Components (CAS-No.)	Value	Control	Basis (Update)
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Navitrol Landscape and Aquatic Herbicide

REVISION DATE : 02/12/2016

Page 4 of 11

		parameters	
Ethanamine, N,N-diethyl- (121-44-8)		Dermal absorption possible	ACGIH (02 2014)
	TWA	0.5 ppm	ACGIH (03 2015)
	STEL	1 ppm	ACGIH (03 2015)

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	liquid
Form	<** Phrase does not exist: LONZA - SX0900048460 **>
Color:	<** Phrase does not exist: LONZA - SX0900048460 **>
Odor:	<** Phrase does not exist: LONZA - SX0900048460 **>
Molecular Weight:	None established
pH :	8.5 - 9.0 ()
Boiling Point:	Not applicable
Melting point/freezing point	no data available
Density	Not applicable
Bulk Density:	1,160 kg/m3 ()
Vapor Pressure:	no data available
Vapor Density:	no data available
Viscosity:	no data available
Solubility in Water:	soluble in cold water
Partition coefficient n-octanol/water:	no data available
Evaporation Rate:	no data available
Oxidizing:	None established
Volatiles, % by vol.:	no data available
VOC Content	This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489). This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.
HAP Content	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Stable under normal conditions.
Conditions to Avoid:	Heat, flames and sparks., Avoid freezing.
Chemical Incompatibility:	Strong oxidizing agents, Strong acids and strong bases
Hazardous Decomposition Products:	Hydrogen chloride, Oxides of nitrogen, Phosgene
Decomposition Temperature:	No data

SECTION 11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

triclopyr, triethylamine salt	LD50 = 1,847 mg/kg	Rat
Ethanamine, N,N-diethyl-	LD50 = 730 mg/kg	Rat
EDTA	LD50 > 2,000 mg/kg	Rat
Citric Acid	LD50 = 3,000 mg/kg	Rat

Component Animal Toxicology

Dermal LD50 value:

triclopyr, triethylamine salt	LD50 > 2,000 mg/kg	Rabbit
Ethanamine, N,N-diethyl-	LD50 = 580 mg/kg	Rabbit
EDTA	no data available	
Citric Acid	LD50 Believed to be > 2,000 mg/kg	Rabbit

Component Animal Toxicology

Inhalation LC50 value:

triclopyr, triethylamine salt	LC50 4 h > 2.6 mg/l	Rat
EDTA	no data available	
Citric Acid	no data available	

Product Animal Toxicity

Oral LD50 value: LD50 Believed to be approximately 3,200 mg/kg Rat

Dermal LD50 value: LD50 Believed to be > 2,000 mg/kg Rabbit

Inhalation LC50 value: LC50 1 h Believed to be > 20 mg/l Rat

Skin Irritation:	May cause mild skin irritation.
Eye Irritation:	This material is expected to be corrosive.
Skin Sensitization:	May cause allergic skin sensitization in some individuals.

Ethanamine, N,N-diethyl-

Acute Toxicity: Corrosive to eyes. May cause mild skin irritation. Ingestion may cause mild gastrointestinal discomfort. Inhalation of mist or vapor may cause irritation to the mucous membranes of the respiratory tract.

Subchronic / Chronic Toxicity: Not known or reported to cause subchronic or chronic toxicity.

Reproductive and Developmental Toxicity:	No reproductive or developmental risk to humans is expected from exposure to this product. The active ingredient in this product has been tested in laboratory animals and no evidence of teratogenicity or fetotoxicity was seen.	
	triclopyr, triethylamine salt	This chemical has been tested in laboratory animals and no evidence of teratogenicity, embryotoxicity or fetotoxicity was seen.
	Citric Acid	This chemical has been tested in laboratory animals and there was no evidence of reproductive toxicity or teratogenicity.
Mutagenicity:	Not known or reported to be mutagenic. The active ingredient in this product has been tested in a battery of mutagenicity assays and was found to be non-mutagenic under the conditions of the tests.	
	triclopyr, triethylamine salt	This material has been shown to be non-mutagenic in the majority of a battery of assays. Not expected to be a mutagenic hazard.
	Citric Acid	This product was determined to be non-mutagenic in the Ames assay. It was also shown to be negative in the Dominant lethal assay.
Carcinogenicity:	This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. This product contains a component that has been classified by the U.S. EPA as a "Group D" Carcinogen.	
	triclopyr, triethylamine salt	The carcinogenicity has been evaluated through animal study and it was found not to be carcinogenic., This product is classified by the U.S. EPA as a "Group D" Carcinogen.
	Citric Acid	The carcinogenicity has been evaluated through animal study and it was found not to be carcinogenic.

SECTION 12. ECOLOGICAL INFORMATION

Overview: Practically non- toxic to fish and other aquatic organisms., Highly / very toxic to plants.

Ecological Toxicity Values for: triclopyr, triethylamine salt

Oncorhynchus mykiss (rainbow trout)	- flow-through test 96 h LC50 = 240 mg/l
Lepomis macrochirus (Bluegill sunfish)	- flow-through test 96 h LC50 = 471 mg/l
Pimephales promelas (fathead minnow)	- flow-through test 96 h LC50 = 120 mg/l
Coho salmon	- static test 96 h LC50 = 463 mg/l
Daphnia magna (Water flea)	- Immobilization 48 h EC50= 1,496 mg/l

- Daphnia magna (Water flea) - static test 48 h LC50= 1,170 mg/l
 Colinus virginianus (Bobwhite quail) - 8 day dietary LC50 > 10,000 ppm
 Anas platyrhynchos (Mallard duck) - 8 day dietary LC50 > 10,000 ppm
 Anas platyrhynchos (Mallard duck) - Oral LD50 = 2,055 mg/kg

Ecological Toxicity Values for: Ethanamine, N,N-diethyl-

- Pimephales promelas (fathead minnow) - Acute toxicity 96 h LC50 43.7 mg/l
 Oncorhynchus mykiss (rainbow trout) - Acute toxicity 96 h LC50 36 mg/l
 Oncorhynchus mykiss (rainbow trout) - Acute toxicity 96 h NOEC 16 mg/l
 Daphnia dubia (water flea) - Immobilization 48 h EC50 17 mg/l
 Daphnia dubia (water flea) - Immobilization 48 h NOEC 12 mg/l
 Daphnia dubia (water flea) - 7 d NOEC 7.1 mg/l
 Daphnia magna (Water flea) - Immobilization 48 h EC50 200 mg/l
 Pseudomonas putida - Growth inhibition 17 h EC50 95 mg/l

Ecological Toxicity Values for: Citric Acid

- Lepomis macrochirus (Bluegill sunfish) - (static). 96 h LC50 = 1,516 mg/l
 Daphnia magna (Water flea) - 72 h EC50 approximately 120 mg/l

SECTION 13. DISPOSAL CONSIDERATIONS

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

Waste Disposal Summary : If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D.

Disposal Methods : As a nonhazardous liquid waste, it should be disposed of in accordance with local, state and federal regulations.

SECTION 14. TRANSPORT INFORMATION

DOT

Not dangerous goods

TDG

Not dangerous goods

IATA

Not dangerous goods

IMDG-CODE

Not dangerous goods

SECTION 15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals.

Signal word : DANGER!
 Hazard statements : Harmful if swallowed.
 Harmful if absorbed through skin.
 Corrosive. Causes irreversible eye damage.
 Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

EPCRA - Emergency Planning and Community Right-to-Know Act**CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Edetic acid	60-00-4	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

[(3,5,6-trichloro- 57213-69-1
 2-
 pyridyl)oxy]acetic
 acid, compound
 with triethylamine
 (1:1)

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Edetic acid	60-00-4
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The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Edetic acid	60-00-4
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This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

Edetic acid	60-00-4
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Pennsylvania Right To Know

[(3,5,6-trichloro-2- pyridyl)oxy]acetic acid, compound with triethylamine (1:1)	57213-69-1
Citric acid	77-92-9
Edetic acid	60-00-4

New Jersey Right To Know

[(3,5,6-trichloro-2-pyridyl)oxy]acetic acid, compound with triethylamine (1:1)	57213-69-1
Citric acid	77-92-9
Edetic acid	60-00-4

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : This is an EPA registered pesticide.

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECl (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

SECTIONS REVISED: 1
Major References : Available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .