



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 MSDS QUESTIONS & REQUESTS, CALL:	1-800-511-MSDS (OUTSIDE USA: 1-423-780-2347)

PRODUCT NAME: **AB CLEARIGATE**

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Supplier**  
Applied Biochemists (WI)  
W175 N11163 Stonewood Drive ,  
Suite 234  
Germantown, WI, 53022  
United States

Telephone: +12622554449  
Telefax: +12622554268  
Web: [www.appliedbiochemists.com](http://www.appliedbiochemists.com)

REVISION DATE: 07/12/2011  
SUPERCEDES: 01/29/2007

MSDS Number: 000000012517  
SYNONYMS:  
CHEMICAL FAMILY: None  
DESCRIPTION / USE: None established  
FORMULA: None established

**Manufacturer**  
Advantis Technologies  
1400 Bluegrass Lakes Parkway  
Alpharetta, GA 30004  
United States of America

## 2. HAZARDS IDENTIFICATION

OSHA Hazard Classification:	<b>Corrosive to skin, Severe eye irritant, Toxic by skin absorption, Combustible Liquid</b>
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Routes of Entry: Eyes Skin Ingestion Inhalation  
Chemical Interactions: None known.  
Medical Conditions Aggravated: Pre-existing skin disorders., Pre-existing kidney disease



Human Threshold Response Data

Odor Threshold                      Not established for product.  
Irritation Threshold                Not established for product.

**Hazardous Materials Identification System / National Fire Protection Association Classifications**

<u>Hazard Ratings :</u>	<u>Health</u>	<u>Flammability</u>	<u>Physical / Instability</u>	<u>PPI / Special hazard.</u>
HMIS	3	2	1	
NFPA	3	2	0	

Immediate (Acute) Health Effects

Inhalation Toxicity:                Not expected to be an inhalation hazard at ambient conditions. May be harmful if vapors are inhaled. Inhalation of mist or vapor may cause irritation and/or burns to the mucous membranes of the respiratory tract.

Skin Toxicity:                        Causes skin burns. May be fatal if absorbed through skin.

Eye Toxicity:                        Severe eye irritation Any visual impairment or corneal damage (opacity) would be expected to clear within several days.

Ingestion Toxicity:                Harmful if swallowed. Moderately toxic if swallowed. Causes digestive tract burns.

Acute Target Organ Toxicity:      Corrosive to skin, Severe eye irritant, Inhalation of mist or vapor may cause irritation to the mucous membranes of the respiratory tract.

Prolonged (Chronic) Health Effects

Carcinogenicity:                    This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.

Reproductive and Developmental Toxicity:      Not known or reported to cause reproductive or developmental toxicity.

Inhalation:                            There are no known or reported effects from chronic exposure except for effects similar to those experienced from acute exposure.

Skin Contact:                        Repeated dermal exposure may cause tissue destruction due to the corrosive nature of this product.

Ingestion:                            There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. The acute corrosivity of this product, makes chronic ingestion of significant amounts unlikely.

Eye Contact:                        Prolonged contact may result in more severe irritation.

Sensitization:                        This material is not known or reported to be a skin or respiratory sensitizer.



Chronic Target Organ Toxicity: There are no known or reported target organ effects from chronic exposure.  
Supplemental Health Hazard Information : no data available

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

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<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
Citrus, ext.	94266-47-4	
Triethanolamine	102-71-6	
Polyethylene glycol monoisodecyl ether	61827-42-7	
Ethanolamine	141-43-5	
BASIC COPPER CARBONATE	12069-69-1	

### 4. FIRST AID MEASURES

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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.

Notes to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

## 5. FIRE FIGHTING MEASURES

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Flammability Summary (OSHA): Combustible

### Flammable Properties

Flash Point: 46.1 °C

Fire / Explosion Hazards: Material may be ignited if preheated to temperatures above the flash point in the presence of a source of ignition.

Extinguishing Media: Water fog Carbon dioxide (CO<sub>2</sub>) Foam

Fire Fighting Instructions: Use water spray to cool unopened containers. 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.

## 6. ACCIDENTAL RELEASE MEASURES

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Personal Protection for Emergency Situations: Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to boots, impervious gloves, hard hat, splash-proof goggles, impervious clothing, i.e., chemically impermeable suit, self-contained breathing apparatus.

### Spill Mitigation Procedures

Air Release: Keep people away from and upwind of spill/leak.

Water Release: 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 : Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use personal protective equipment as required. Evacuate personnel to safe areas.

## 7. HANDLING AND STORAGE

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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 and well ventilated place. Do not expose to direct light. Store between 50°F and 100°F. Avoid freezing.

Incompatible Materials for Storage: Refer to Section 10, "Incompatible Materials."

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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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.

### 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 air purifying respirator with organic vapor cartridge and P95 particulate filter. 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 Boots Apron A full impervious suit is recommended if exposure is possible to a large portion of the body.

Eye Protection: Chemical resistant goggles must be worn. Face-shield

Protective Clothing Type: impervious clothing

General Protective Measures: Ensure that eyewash stations and safety showers are close to the workstation location.

### Exposure Limit Data

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>Name of Limit</u>	<u>Exposure</u>
Triethanolamine	102-71-6	ACGIH	5 mg/m <sup>3</sup> TWA
Ethanolamine	141-43-5	ACGIH	3 ppm TWA



Ethanolamine	141-43-5	ACGIH	6 ppm STEL
Ethanolamine	141-43-5	OSHA Z1	3 ppm TWA 6 mg/m3 TWA
Ethanolamine	141-43-5	NIOSH-IDLH	30 ppm
BASIC COPPER CARBONATE	12069-69-1	ACGIH	1 mg/m3 Calculated as Cu TWA dusts and mists
BASIC COPPER CARBONATE	12069-69-1	OSHA Z1	1 mg/m3 TWA dusts and mists
BASIC COPPER CARBONATE	12069-69-1	NIOSH-IDLH	100 mg/m3

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	liquid
Form	No data.
Color:	No data.
Odor:	No data.
Molecular Weight:	None established
Specific Gravity :	1.04 - 1.05
	20 °C
pH :	9.7 - 10.0
Boiling Point:	no data available
Freezing Point:	not applicable
Melting Point:	not applicable
Density:	not applicable
Bulk Density:	no data available
Vapor Pressure:	no data available
Vapor Density:	> 1
Viscosity:	no data available
Solubility in Water:	completely miscible
Partition coefficient n-octanol/water:	Not applicable
Evaporation Rate:	no data available
Oxidizing:	None established
Volatiles, % by vol.:	no data available



VOC Content                      no data available  
HAP Content                      Not applicable

## 10. STABILITY AND REACTIVITY

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Stability and Reactivity Summary:      Stable under normal conditions.  
Conditions to Avoid:                      Heat, flames and sparks., Avoid freezing.  
Chemical Incompatibility:                Strong acids, Nitrates  
Hazardous Decomposition Products:   Oxides of nitrogen  
Decomposition Temperature:            No data

## 11. TOXICOLOGICAL INFORMATION

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### Component Animal Toxicology

#### Oral LD50 value:

Citrus, ext.	LD50	> 5,000 mg/kg	rabbit
Triethanolamine	LD50	= 7,390 mg/kg	Rat
Ethanolamine	LD50	= 1,700 mg/kg	rat
BASIC COPPER CARBONATE	LD50	= 1,350 mg/kg	rat

### Component Animal Toxicology

#### Dermal LD50 value:

Citrus, ext.	LD50	> 5,000 mg/kg	rabbit
Triethanolamine	LD50	> 2,000 mg/kg	Rabbit
Ethanolamine	LD50	Approximately 1,000 mg/kg	rabbit
BASIC COPPER CARBONATE		no data available	

### Component Animal Toxicology

#### Inhalation LC50 value:

Citrus, ext.		no data available
Triethanolamine		A saturated vapor concentration for 8 hours (rats) did not produce any deaths.
Ethanolamine	LC50 1 h	> 4.8 MG/L mouse
Ethanolamine	LC50 4 h	> 970 ppm mouse
BASIC COPPER CARBONATE		no data available



Product Animal Toxicity

Oral LD50 value: LD50 = 1,925 mg/kg rat  
Dermal LD50 value: LD50 = 650 mg/kg rabbit  
Inhalation LC50 no data available

value:

Skin Irritation: Corrosive to skin  
Eye Irritation: Severe eye irritant  
Skin Sensitization: This material is not known or reported to be a skin or respiratory sensitizer.

Acute Toxicity: Corrosive to skin Severe eye irritation 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: Not known or reported to cause reproductive or developmental toxicity.

Triethanolamine This product has been tested and was shown not to produce any adverse effects on reproductive function or fetal development when administered to laboratory animals.

Ethanolamine This chemical has been tested in laboratory animals and no evidence of teratogenicity, embryotoxicity or fetotoxicity was seen.

Mutagenicity: Not known or reported to be mutagenic.  
Triethanolamine This chemical has been shown to be non-mutagenic based on a battery of assays.  
Ethanolamine This chemical has been tested in a battery of mutagenicity/genotoxicity assays and the results were negative.

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.  
Triethanolamine The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans.  
Ethanolamine This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. Chemicals of similar structure have been shown not to cause cancer in laboratory animals.





## 12. ECOLOGICAL INFORMATION

Overview: Toxic to fish and other aquatic organisms.

### Ecological Toxicity Values for: Triethanolamine

Fathead minnow (Pimephales promelas),	- (measured, flow-through) 96 h LC50 = 11,800 mg/l
Daphnia magna,	- (nominal, static). 24 h EC50= 1,850 mg/l
Common shrimp (Crangon crangon)	- (nominal, renewal). 48 h LC50> 100 mg/l
Green algae (Scenedesmus subspicatus)	- (nominal, static). 48 h EC50 = 750 mg/l

### Ecological Toxicity Values for: Ethanolamine

Rainbow trout (Oncorhynchus mykiss)	- (nominal, static). 96 h LC50 = 150 mg/l
Mosquito fish	- (nominal, static). 96 h LC50 = 337.5 mg/l
Bluegill	- (nominal, static). 96 h LC50 = 329.16 mg/l
Fathead minnow (Pimephales promelas),	- (measured, flow-through) 96 h LC50 = 2,070 mg/l
Goldfish	- (measured, static) 96 h LC50 = 170 mg/l
Daphnia magna (Water flea)	- (nominal, static). 24 h LC50= 140 mg/l
Crangon crangon (shrimp)	- (nominal, renewal). 48 h LC50> 100 mg/l
Brine shrimp	- 48 h LC50= 7,100 mg/l
Daphnia magna (Water flea)	- 48 h EC50= 65 mg/l

## 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 meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001.

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

## 14. TRANSPORT INFORMATION

Land (US DOT): UN2903 PESTICIDES, LIQUID, TOXIC, FLAMMABLE, N.O.S. (COPPER TRIETHANOLAMINE COMPLEX) 6.1 III

Water (IMDG): UN2903 PESTICIDES, LIQUID, TOXIC, FLAMMABLE, N.O.S., (COPPER TRIETHANOLAMINE COMPLEX) 6.1 3 III Marine Pollutant: No

Air (IATA): UN2903 PESTICIDES, LIQUID, TOXIC, FLAMMABLE, N.O.S., (COPPER TRIETHANOLAMINE COMPLEX) 6.1 3 III

Emergency Response Guide Number: ERG # 131

Transportation Notes: Subsidiary CORROSIVE label required per 49CFR 172.402(a)(2). NFPA Class II COMBUSTIBLE LIQUID Per 49CFR 172.402(a)(2), a subsidiary FLAMMABLE label is required for all modes, EXCEPT for a material with a flashpoint at or above 38 Deg C. (100 Deg F) transported by rail or highway only.

EMS: F-E, S-D

## 15. REGULATORY INFORMATION

### UNITED STATES:

Toxic Substances Control Act (TSCA): This is an EPA registered pesticide.  
EPA Pesticide Registration Number: None established

FIFRA Listing of Pesticide Chemicals (40 CFR 180): This product is regulated under the Federal Insecticide, Fungicide and Rodenticide Act. It must be used for purposes consistent with its labeling.

### Superfund Amendments and Reauthorization Act (SARA) Title III:

Hazard Categories Sections 311 / 312 (40 CFR 370.2):

Health Immediate (Acute) Health Hazard



Physical

Fire Hazard

**Emergency Planning & Community Right to Know (40 CFR 355, App. A):**

**Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:**

ZUS_SAR302	TPQ (threshold planning quantity)	None established
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**Reportable Quantity (49 CFR 172.101, Appendix):**

ZUS_CERCLA	Reportable quantity	Diethanolamine Value: 100lbs
ZUS_SAR302	Reportable quantity	None established

**Supplier Notification Requirements (40 CFR 372.45), 313 Reportable Components**

ZUS_SAR313	De minimis concentration	Diethanolamine Value: < 1% by weight
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**Clean Air Act Toxic ARP Section 112r:**

CAA 112R	None established
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**Clean Air Act Socmi:**

HON SOC

US. EPA Hazardous Organic NESHAP (HON) Synthetic Organic Chemicals (40 CFR 63.100-.106, Table 1)  
07 1999  
Group I  
DIETHANOLAMINE (2,2'-IMINODIETHANOL)

US. EPA Hazardous Organic NESHAP (HON) Synthetic Organic Chemicals (40 CFR 63.100-.106, Table 1)  
07 1999  
Group I  
ETHANOLAMINE

US. EPA Hazardous Organic NESHAP (HON) Synthetic Organic Chemicals (40 CFR 63.100-.106, Table 1)  
07 1999  
Group I  
TRIETHANOLAMINE

**Clean Air Act VOC Section 111:**

AB CLEARIGATE

REVISION DATE : 07/12/2011



CAA 111

US. EPA Clean Air Act (CAA) Section 111 SOCM Intermediate or Final Volatile Organic Compounds (40 CFR 60.489)  
01 1996  
ETHANOLAMINE

**Clean Air Act Haz. Air Pollutants Section 112:**

ZUS\_CAAHAP None established

ZUS\_CAAHRP None established

CAA AP

US. EPA Hazardous Organic NESHAP (HON) Hazardous Air Pollutants (40 CFR 63.100-.106, Table 2)  
04 1999  
DIETHANOLAMINE (2,2'-IMINODIETHANOL)

**State Right-to-Know Regulations Status of Ingredients**

**Pennsylvania:**

CAS #	COMPONENT NAME
111-42-2	Diethanolamine
141-43-5	Ethanolamine
7757-82-6	SULFURIC ACID DISODIUM SALT
102-71-6	Triethanolamine

ZUSPA\_RTK

Pennsylvania: Hazardous substance list  
1989-08-11  
ETHANOL, 2,2'-IMINOBIS-  
Environmental hazard

Pennsylvania: Hazardous substance list  
1989-08-11  
ETHANOL, 2-AMINO-

Pennsylvania: Hazardous substance list  
1990-01-01  
SODIUM SULFATE (SOLUTION)  
Environmental hazard, hazardous substance

Pennsylvania: Hazardous substance list  
1989-08-11



ETHANOL, 2,2',2''-NITRILOTRIS-

**New Jersey:**

CAS #	COMPONENT NAME
111-42-2	Diethanolamine
141-43-5	Ethanolamine
102-71-6	Triethanolamine

ZUSNJ\_RTK

New Jersey Right to Know Hazardous Substance List (RTK-HSL)  
2007-03-01  
DIETHANOLAMINE ETHANOL, 2,2'-IMINOBIS-  
Special Health Hazard - Corrosive

New Jersey Right to Know Hazardous Substance List (RTK-HSL)  
2007-03-01  
ETHANOLAMINE MONOETHANOLAMINE ETHANOL, 2-AMINO-  
Special Health Hazard - Corrosive

New Jersey Right to Know Hazardous Substance List (RTK-HSL)  
2007-03-01  
TRIETHANOLAMINE ETHANOL, 2,2',2''-NITRILOTRIS-

**Massachusetts:**

CAS #	COMPONENT NAME
111-42-2	Diethanolamine
141-43-5	Ethanolamine
7757-82-6	SULFURIC ACID DISODIUM SALT
102-71-6	Triethanolamine

ZUSMA\_RTK

Massachusetts Right to Know List of Chemicals and Hazard Classifications  
1994-04-01  
DIETHANOLAMINE

Massachusetts Right to Know List of Chemicals and Hazard Classifications  
1993-04-24  
ETHANOLAMINE 2-AMINOETHANOL



Massachusetts Right to Know List of Chemicals and Hazard Classifications  
1991-07-01  
SODIUM SULFATE (SOLUTION)  
massachusetts hazardous substance

Massachusetts Right to Know List of Chemicals and Hazard Classifications  
1993-04-24  
TRIETHANOLAMINE

**California Proposition 65:**

CAS #	COMPONENT NAME
ZUSCA_P65	None established

**WHMIS Hazard Classification:**

Ingredient Disclosure List (WHMIS)  
2007-08-24  
Threshold limits: 1 Weight percent  
693  
Diethanolamine

Ingredient Disclosure List (WHMIS)  
2007-08-24  
Threshold limits: 1 Weight percent  
1170  
Monoethanolamine

Ingredient Disclosure List (WHMIS)  
2007-08-24  
Threshold limits: 1 Weight percent  
1663  
Triethanolamine

Ingredient Disclosure List (WHMIS)  
2007-08-24  
Threshold limits: 1 Weight percent  
985  
Copper(II) carbonate hydroxide



## 16. OTHER INFORMATION

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MSDS REVISION STATUS :

SECTIONS REVISED:

First formulated version in SAP.

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. .