



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 NAVIGATE**

**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

REVISION DATE: 01/31/2012  
SUPERCEDES: 02/15/2007

MSDS Number: 000000012610  
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>Moderate eye irritant, Mild skin irritant</b>
-----------------------------	--

Routes of Entry:	Skin Eyes Ingestion
Chemical Interactions:	No known interactions
Medical Conditions Aggravated:	No data available



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	2	0	0	
NFPA	2	0	0	

Immediate (Acute) Health Effects

Inhalation Toxicity:                Not expected to be irritating. Not expected to be toxic by inhalation.  
Skin Toxicity:                        May cause mild skin irritation. Not expected to be toxic from dermal contact.  
Eye Toxicity:                         Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected.  
Ingestion Toxicity:                 Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting or diarrhea. Slightly toxic if swallowed.  
Acute Target Organ Toxicity:      Contact with eyes or skin causes irritation.

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. However, this product contains crystalline silica and cristobalite. Both of these substances are classified by IARC (International Agency for research on Cancer) as group 1 carcinogens (carcinogenic to humans). The carcinogenicity concern arises from inhaling particles of inhalable size. The crystalline silica and cristobalite are carried in a granular clay carrier which has a particle size greater than 10 microns, which is not respirable. Therefore, this product is not an inhalation hazard and exposure would not be expected to pose a carcinogenic hazard.  
Reproductive and Developmental Toxicity:      No reproductive or developmental risk to humans is expected from exposure to this product.  
Inhalation:                            There are no known or reported effects from chronic exposure.  
Skin Contact:                         There are no known or reported effects from chronic exposure except for effects (if any) similar to those experienced from acute exposure.



Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.

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

Chronic Target Organ Toxicity: May cause kidney and liver damage based on animal data.

Supplemental Health Hazard Information : No additional health information available.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

---

<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
2-butoxyethyl-2,4-dichlorophenoxyacetate	1929-73-3	
Bentonite	1302-78-9	
crystalline silica, tridymite	15468-32-3	
CRISTOBALITE (SiO <sub>2</sub> )	14464-46-1	
QUARTZ (SiO <sub>2</sub> )	14808-60-7	

### 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.

## 5. FIRE FIGHTING MEASURES

---

Flammability Summary (OSHA): The product is not flammable., Not combustible., The substance or mixture is not classified as pyrophoric., Not explosive

### Flammable Properties

Flash Point: Not applicable

Fire / Explosion Hazards: Will not burn

Extinguishing Media: Use dry chemical, water fog, carbon dioxide (CO<sub>2</sub>), or foam.

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. Use water to cool containers.

Hazardous Combustion Products: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

## 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.

### 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: Sweep up and shovel into suitable containers for disposal. Avoid dust generation. After removal, flush contaminated area thoroughly with water. Avoid runoff into storm sewers and ditches which lead to waterways.

Additional Spill Information : Possible need to alert the neighbourhood. Evacuate personnel to safe areas. Use personal protective equipment as required.



## 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 inhalation of dust and fumes.

Storage: Store in a cool, dry and well ventilated place. Isolate from incompatible materials.

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

## 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.

### Protective Equipment for Routine Use of Product

Respiratory Protection : Wear a NIOSH approved respirator if levels above the exposure limits are possible., Wear a NIOSH approved N95 respirator.

Skin Protection : Wear impervious gloves to avoid skin contact.

Eye Protection: Use chemical goggles.

Protective Clothing Type: impervious clothing

General Protective Measures: Emergency eyewash should be provided in the immediate work area.

### Exposure Limit Data

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>Name of Limit</u>	<u>Exposure</u>
crystalline silica, tridymite	15468-32-3	OSHA Z3	
crystalline silica, tridymite	15468-32-3	OSHA Z1	



CRISTOBALITE (SIO2)	14464-46-1	OSHA Z3	250 million particles per cubic foot TWA respirable Use ½ the value calculated from the count or mass formulae for quartz., The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable., division by %SiO2+5
CRISTOBALITE (SIO2)	14464-46-1	OSHA Z3	10 mg/m3 TWA respirable Use ½ the value calculated from the count or mass formulae for quartz., Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics: Aerodynamic diameter (unit density sphere): 2; Percent passing selector: 90 Aerodynamic diameter (unit density sphere): 2,5; Percent passing selector: 75 Aerodynamic diameter (unit density sphere): 3,5; Percent passing selector: 50 Aerodynamic diameter (unit density sphere): 5,0; Percent passing selector: 25 Aerodynamic diameter (unit density sphere): 10; Percent passing selector: 0 The measurements under this note refer to the use of an AEC (now NRC) instrument. The respirable fraction of coal dust is determined with an MRE; the figure corresponding to that of 2.4 mg/m3 in the table for coal dust is 4.5 mg/m3., division by %SiO2+2



CRISTOBALITE (SiO <sub>2</sub> )	14464-46-1	OSHA Z3	30 mg/m <sup>3</sup> TWA Total dust Use ½ the value calculated from the count or mass formulae for quartz., division by %SiO <sub>2</sub> +2
CRISTOBALITE (SiO <sub>2</sub> )	14464-46-1	ACGIH	0.025 mg/m <sup>3</sup> TWA respirable dust fraction Respirable fraction; see Appendix C, paragraph C.
CRISTOBALITE (SiO <sub>2</sub> )	14464-46-1	ACGIH	0.025 mg/m <sup>3</sup> TWA Respirable fraction
CRISTOBALITE (SiO <sub>2</sub> )	14464-46-1	OSHA Z3	
CRISTOBALITE (SiO <sub>2</sub> )	14464-46-1	OSHA Z1	
QUARTZ (SiO <sub>2</sub> )	14808-60-7	OSHA Z3	8-hour time weighted average
QUARTZ (SiO <sub>2</sub> )	14808-60-7	OSHA Z3	8-hour time weighted average
QUARTZ (SiO <sub>2</sub> )	14808-60-7	OSHA Z3	8-hour time weighted average
QUARTZ (SiO <sub>2</sub> )	14808-60-7	ACGIH	0.025 mg/m <sup>3</sup> TWA respirable dust fraction Respirable fraction; see Appendix C, paragraph C.
QUARTZ (SiO <sub>2</sub> )	14808-60-7	ACGIH	0.025 mg/m <sup>3</sup> TWA Respirable fraction
QUARTZ (SiO <sub>2</sub> )	14808-60-7	OSHA Z1	
QUARTZ (SiO <sub>2</sub> )	14808-60-7	NIOSH-IDLH	25 mg/m <sup>3</sup>
QUARTZ (SiO <sub>2</sub> )	14808-60-7	NIOSH-IDLH	50 mg/m <sup>3</sup>

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	solid
Form	No data.
Color:	No data.
Odor:	No data.
Molecular Weight:	None established
Specific Gravity :	no data available
pH :	not applicable
Boiling Point:	not applicable
Freezing Point:	no data available



Melting Point:	no data available
Density:	no data available
Bulk Density:	no data available
Vapor Pressure:	no data available
Vapor Density:	not applicable
Viscosity:	no data available
Solubility in Water:	insoluble
Partition coefficient n-octanol/water:	no data available
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

---

Stability and Reactivity Summary:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Chemical Incompatibility:	Strong oxidizing agents, Acids and bases
Hazardous Decomposition Products:	Carbon oxides, Sulphur oxides, Hydrogen chloride
Decomposition Temperature:	No data

## 11. TOXICOLOGICAL INFORMATION

---

### Component Animal Toxicology

#### Oral LD50 value:

2-butoxyethyl-2,4-dichlorophenoxyacetate      LD50 = 831 mg/kg    rat

### Component Animal Toxicology

#### Dermal LD50 value:

2-butoxyethyl-2,4-dichlorophenoxyacetate      LD50 > 2,000 mg/kg    rabbit

### Component Animal Toxicology

#### Inhalation LC50 value:

2-butoxyethyl-2,4-dichlorophenoxyacetate      no data available





Product Animal Toxicity

Oral LD50 value: LD50 Believed to be approximately 3,000 mg/kg rat

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

Inhalation LC50 no data available

value:

Skin Irritation: May cause mild skin irritation.

Eye Irritation: This material is expected to be moderately irritating.

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

Acute Toxicity: Contact with eyes or skin causes irritation.

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.

Mutagenicity: Not known or reported to be mutagenic.

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. However, this product contains crystalline silica and cristobalite. Both of these substances are classified by IARC (International Agency for research on Cancer) as group 1 carcinogens (carcinogenic to humans). The carcinogenicity concern arises from inhaling particles of inhalable size. The crystalline silica and cristobalite are carried in a granular clay carrier which has a particle size greater than 10 microns, which is not respirable. Therefore, this product is not an inhalation hazard and exposure would not be expected to pose a carcinogenic hazard., 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.

2-butoxyethyl-2,4-dichlorophenoxyacetate This product is classified by the U.S. EPA as a "Group D" Carcinogen.

CRISTOBALITE (SiO2) The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 1 substance, Carcinogenic to Humans.

QUARTZ (SiO2) The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 1 substance, Carcinogenic to Humans.



## 12. ECOLOGICAL INFORMATION

Overview: Moderately toxic to fish and other aquatic organisms., Highly / very toxic to plants.

Ecological Toxicity Values - Product:

- LC50 Believed to be approximately 1.6 mg/l (calculated)

Ecological Toxicity Values for: 2-butoxyethyl-2,4-dichlorophenoxyacetate

- Oncorhynchus mykiss (rainbow trout) - static test 96 h LC50 = 0.452 mg/l
- Lepomis macrochirus (Bluegill sunfish) - static test 96 h LC50 = 0.62 mg/l
- Pimephales promelas (fathead minnow) - static test 96 h LC50 = 2.5 mg/l
- Daphnia magna (Water flea) - static test 48 h EC50= 1.7 mg/l
- Crassostrea virginica (Eastern oyster) - flow-through test 96 h EC50= 3.75 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 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 solid waste it should be disposed of in accordance with local, state and federal regulations.



## 14. TRANSPORT INFORMATION

Land (US DOT): Not Regulated NOT REGULATED AS A DOT HAZARDOUS MATERIAL  
 Water (IMDG): NOT REGULATED AS A HAZARDOUS MATERIAL, Marine Pollutant:  
 No  
 Flash Point: Not applicable  
 Air (IATA): NOT REGULATED AS A HAZARDOUS MATERIAL,  
 Emergency Response Guide Number: Not applicable

## 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): Not registered in the US under FIFRA.

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

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

Health Immediate (Acute) Health Hazard  
 Physical None

### 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

#### Reportable Quantity (49 CFR 172.101, Appendix):

ZUS\_CERCLA Reportable quantity None established  
 ZUS\_SAR302 Reportable quantity None established

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

ZUS\_SAR313 De minimis concentration None established

#### Clean Air Act Toxic ARP Section 112r:

CAA 112R None established



**Clean Air Act Socmi:**

HON SOC None established

**Clean Air Act VOC Section 111:**

CAA 111 None established

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

ZUS\_CAAHAP None established

ZUS\_CAAHRP None established

CAA AP None established

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

**Pennsylvania:**

CAS #	COMPONENT NAME
ZUSPA_RTK	None established

**New Jersey:**

CAS #	COMPONENT NAME
ZUSNJ_RTK	None established

**Massachusetts:**

CAS #	COMPONENT NAME
ZUSMA_RTK	None established

**California Proposition 65:**

CAS #	COMPONENT NAME
ZUSCA_P65	None established

**WHMIS Hazard Classification:**

None established

**16. OTHER INFORMATION**

MSDS REVISION STATUS :

SECTIONS REVISED: First formulated version in SAP.

AB NAVIGATE

REVISION DATE : 01/31/2012

Page 12 of 13



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. .