



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 NAVITROL DPF AQUATIC HERBICIDE

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: 12/07/2011
SUPERCEDES: 03/09/2009

MSDS Number: 000000012767
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:	Moderate eye irritant
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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: Not expected to be irritating to the skin. 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. Not expected to be toxic by ingestion.
Acute Target Organ Toxicity: May cause eye irritation., Ingestion may cause mild gastrointestinal discomfort.

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. The active ingredient in this product has been tested in laboratory animals and no evidence of teratogenicity or fetotoxicity was seen.
Inhalation: There are no known or reported effects from chronic exposure.



Skin Contact: There are no known or reported effects from chronic 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. A similar product was found to be a negative skin sensitizer in the Guinea pig Buehler method test.
 Chronic Target Organ Toxicity: There are no known or reported effects to humans from repeated exposure to this product.
 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>
triclopyr, triethylamine salt	57213-69-1	>=	
Bentonite	1302-78-9	>=	39.6 - 66
crystalline silica, tridymite	15468-32-3	>=	0 - 0.66
CRISTOBALITE (SiO ₂)	14464-46-1	>=	0 - 0.66
QUARTZ (SiO ₂)	14808-60-7	>=	0.66 - 3.3
EDTA	60-00-4	>=	- 2
Citric Acid	77-92-9	>=	



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
<u>Flammable Properties</u>	
Fire / Explosion Hazards:	Will not burn
Extinguishing Media:	Water spray Foam Dry chemical Carbon dioxide
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.
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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: Avoid dust generation. Sweep up and shovel into suitable containers for disposal. The product should not be allowed to enter drains, water courses or the soil.
 Additional Spill Information : Prevent further leakage or spillage if safe to do so. Evacuate personnel to safe areas. Use personal protective equipment as required. Remove all sources of ignition.

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

CHEMICAL NAME	CAS #	Name of Limit	Exposure
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crystalline silica, tridymite	15468-32-3	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
crystalline silica, tridymite	15468-32-3	OSHA Z1	
CRISTOBALITE (SiO2)	14464-46-1	OSHA Z3	
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 ₂)	14464-46-1	OSHA Z3	30 mg/m ³ TWA Total dust Use ½ the value calculated from the count or mass formulae for quartz., division by %SiO ₂ +2
CRISTOBALITE (SiO ₂)	14464-46-1	ACGIH	0.025 mg/m ³ TWA respirable dust fraction Respirable fraction; see Appendix C, paragraph C.
CRISTOBALITE (SiO ₂)	14464-46-1	ACGIH	0.025 mg/m ³ TWA Respirable fraction
CRISTOBALITE (SiO ₂)	14464-46-1	OSHA Z3	
CRISTOBALITE (SiO ₂)	14464-46-1	OSHA Z1	
QUARTZ (SiO ₂)	14808-60-7	OSHA Z3	8-hour time weighted average
QUARTZ (SiO ₂)	14808-60-7	OSHA Z3	8-hour time weighted average
QUARTZ (SiO ₂)	14808-60-7	OSHA Z3	8-hour time weighted average
QUARTZ (SiO ₂)	14808-60-7	ACGIH	0.025 mg/m ³ TWA respirable dust fraction Respirable fraction; see Appendix C, paragraph C.
QUARTZ (SiO ₂)	14808-60-7	ACGIH	0.025 mg/m ³ TWA Respirable fraction
QUARTZ (SiO ₂)	14808-60-7	OSHA Z1	
QUARTZ (SiO ₂)	14808-60-7	NIOSH-IDLH	25 mg/m ³
QUARTZ (SiO ₂)	14808-60-7	NIOSH-IDLH	50 mg/m ³

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 :	6.0 - 7.0
Boiling Point:	not applicable
Freezing Point:	no data available



Melting Point:	no data available
Density:	not applicable
Bulk Density:	9.2610 kg/m ³
Vapor Pressure:	no data available
Vapor Density:	not applicable
Viscosity:	not applicable
Solubility in Water:	insoluble
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

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

11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

triclopyr, triethylamine salt	LD50	= 1,847 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
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
Bentonite	Respiratory irritant	
EDTA	no data available	
Citric Acid	no data available	

Product Animal Toxicity

Oral LD50 value: LD50 Believed to be > 5,000 mg/kg rat

Dermal LD50 value: LD50 Believed to be > 5,000 mg/kg rat

Inhalation LC50 value: LC50 4 h Believed to be > 2.0 mg/l rat

Skin Irritation: Not expected to be irritating to the skin.

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., A similar product was found to be a negative skin sensitizer in the Guinea pig Buehler method test.

Acute Toxicity: May cause eye irritation. Ingestion may cause mild gastrointestinal discomfort.

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.
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Citric Acid	This chemical has been tested in laboratory animals and there was no evidence of reproductive toxicity or teratogenicity.
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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.
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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.
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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.

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.
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.
Citric Acid	The carcinogenicity has been evaluated through animal study and it was found not to be carcinogenic.

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: 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

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,

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 product is regulated under the Federal Insecticide, Fungicide and Rodenticide Act. It must be used for purposes consistent with its labeling.

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	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
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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
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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	None established
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Clean Air Act VOC Section 111:

CAA 111	None established
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Clean Air Act Haz. Air Pollutants Section 112:

ZUS_CAAHAP	None established
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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:

Major References :

First formulated version in SAP.

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. .