



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 HARPOON 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: 04/19/2011
SUPERCEDES: 11/20/2009

MSDS Number: 000000012577
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:	Combustible
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Routes of Entry:	This product will not exert a significant adverse effect to health from any route of exposure.
Medical Conditions Aggravated:	None known.



Human Threshold Response Data

Odor Threshold Not established.

Irritation Threshold Not established.

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	1	2	0	
NFPA	1	2	0	

Immediate (Acute) Health Effects

Inhalation Toxicity: Not expected to cause irritation. Not expected to be toxic by inhalation.
 Skin Toxicity: This material is expected to be slightly irritating. Not expected to be absorbed through the skin.
 Eye Toxicity: Contact may cause mild irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva.
 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.

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: There are no known or reported effects on reproductive function or fetal development.
 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 exposure.
 Sensitization: Not expected to be a skin sensitizer.
 Chronic Target Organ Toxicity: None known
 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>
1,2-ETHANEDIAMINE	107-15-3	
Copper Sulfate pentahydrate	7758-99-8	

4. FIRST AID MEASURES

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):	Combustible above 93 deg. C / 200 deg. F.
<u>Flammable Properties</u>	
Flash Point:	100 °C closed cup
Fire / Explosion Hazards:	May be ignited by open flame.
Extinguishing Media:	Water Carbon dioxide (CO2) Dry powder 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.



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:

not applicable

Water Release:

soluble 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

Handling: Do not take internally. Avoid contact with skin, eyes and clothing. If in eyes or on skin, rinse well with water. Avoid breathing vapors, mist or gas.

Storage: Keep container tightly closed in a dry and well-ventilated place. Do not store near feed, food, or within the reach of children.

Shelf Life Limitations:

Maximum storage temperature:

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., A NIOSH approved air purifying respirator with organic vapor cartridge and P100 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 : Impervious gloves Butyl rubber Neoprene

Eye Protection: Use chemical goggles.

Protective Clothing Type: Impervious, Butyl rubber, Neoprene

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>
1,2-ETHANEDIAMINE	107-15-3	ACGIH	10 ppm TWA
1,2-ETHANEDIAMINE	107-15-3	OSHA Z1	10 ppm TWA 25 mg/m3 TWA
1,2-ETHANEDIAMINE	107-15-3	NIOSH-IDLH	1,000 ppm
Copper Sulfate pentahydrate	7758-99-8	OSHA Z1	1 mg/m3 TWA dusts and mists
Copper Sulfate pentahydrate	7758-99-8	NIOSH-IDLH	100 mg/m3

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: liquid

Form: No data.

Color: purple

Odor: Amine

Molecular Weight: None established

Specific Gravity : 1.221

pH : 20 °C
10.0 - 10.5

Boiling Point: 101.7 °C
215 °F

Freezing Point: no data available



Melting Point:	no data available
Density:	not applicable
Bulk Density:	no data available
Vapor Pressure:	no data available
Vapor Density:	no data available
Viscosity:	3.268 mPas 20 °C
Solubility in Water:	soluble
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:	Oxidizing agents
Hazardous Decomposition Products:	During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Decomposition Temperature:	>200 °C

11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

Copper Sulfate pentahydrate LD50 = 300 mg/kg rat

Component Animal Toxicology

Dermal LD50 value:

Copper Sulfate pentahydrate LD50 >= 1,000 mg/kg rabbit

Component Animal Toxicology

Inhalation LC50 value:

AB HARPOON AQUATIC HERBICIDE
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- Rainbow trout (*Oncorhynchus mykiss*) - (static). 96 h LC50 = 0.13 mg/l
- Blue crab (*Callinectes sapidus*) - (static). 96 h LC50= 28 mg/l
- Northern pink shrimp (*Penaeus duorarum*) - (static). 96 h LC50= 16 mg/l
- Marsh grass shrimp - (static). 96 h LC50= 17 mg/l
- Green algae (*Selenastrum capricornutum*), - (static). 5 day EC50 (population growth) = 0.0031 mg/l
- Anabaena flos-aquae (freshwater blue-green algae) - (static). 5 day EC50 (population growth) = 0.029 mg/l
- Skeletonema costatum (diatom) - (static). 5 day EC50 (population growth) = 0.25 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. As a nonhazardous liquid waste, it should be disposed of in accordance with local, state and federal regulations.

Potential US EPA Waste Codes : not applicable

14. TRANSPORT INFORMATION

Land (US DOT): UN3082 RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (COPPER SULFATE PENTAHYDRATE) 9 III

Water (IMDG): UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (COPPER SULFATE PENTAHYDRATE) 9 III MARINE POLLUTANT



Air (IATA): UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.,
(COPPER SULFATE PENTAHYDRATE) 9 III
Emergency Response Guide Number: ERG # 171

Transportation Notes: Material is not regulated as a marine pollutant for ground, rail car, or aircraft transportation within the USA if shipped in non bulk packages per marine pollutant exception 49 CFR 171.4(c). Hazardous Substance as defined in 49 CFR 172.101, Appendix A: Yes Product is not regulated for transport if the package does not meet the RQ Limit as prescribed in 49 CFR Appendix A to 172.101 and is shipped as a non-bulk package domestically.

EMS: F-A, S-F

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	None
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	Ethylenediamine Value: 5,000lbs COPPER AND COMPOUNDS Value:
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ZUS_SAR302	Reportable quantity	Ethylenediamine Value: 5,000lbs
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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

US. EPA Hazardous Organic NESHAP (HON) Synthetic Organic Chemicals (40 CFR 63.100-.106, Table 1)

07 1999

Group II

ETHYLENEDIAMINE

Clean Air Act VOC Section 111:

CAA 111

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

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ETHYLENEDIAMINE

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
107-15-3	1,2-ETHANEDIAMINE
7758-99-8	Copper Sulfate pentahydrate

ZUSPA_RTK

Pennsylvania: Hazardous substance list

1989-08-11

1,2-ETHANEDIAMINE

Environmental hazard



2007-08-24
Threshold limits: 0.1 Weight percent
859
Ethylene diamine

Ingredient Disclosure List (WHMIS)
1988-01-20
Threshold limits: 1 Weight percent
431
COPPER COMPOUNDS, N.O.S.

16. OTHER INFORMATION

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. .