



**Arch
Chemicals,
Inc.**

**MATERIAL SAFETY
DATA SHEET**

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

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:

FOR ALL MSDS QUESTIONS & REQUESTS, CALL:

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

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

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

PRODUCT NAME: HTH ALGAE GUARD 3X CONCENTRATE

EPA Registration Number: 1258-1288

1. PRODUCT AND COMPANY IDENTIFICATION

**Arch Chemicals, Inc.
501 Merritt 7 PO Box 5204
Norwalk, CT 06856-5204**

REVISION DATE: 03/18/2010

SUPERCEDES: 04/23/2009

MSDS Number: 000000003586

SYNONYMS: None

CHEMICAL FAMILY: Quaternary ammonium chloride

DESCRIPTION / USE: algaecide

FORMULA: NOT APPLICABLE/MIXTURE

2. HAZARDS IDENTIFICATION

OSHA Hazard
Classification:

Corrosive to eyes, skin and mucous membranes, Lung toxin

Routes of Entry:

Inhalation, skin, eyes, ingestion

Chemical Interactions:

No known or reported interactions.

Medical Conditions Aggravated:

None known or reported

Human Threshold Response Data

Odor Threshold Not established for product.

ALCOHOL DENAT.

84 ppm

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	1	0	
NFPA	3	1	0	



Immediate (Acute) Health Effects

Inhalation Toxicity:	Inhalation of this material in vapor form is irritating to the nose, mouth, throat and lungs. It may also cause burns to the respiratory tract which can result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function. Inhalation of high concentrations may result in permanent lung damage.
Skin Toxicity:	Slightly toxic by skin contact. Dermal exposure can cause severe irritation and/or burns characterized by redness, swelling, and scab formation. Prolonged skin exposure may cause permanent damage.
Eye Toxicity:	Severe irritation and/or burns can occur following eye exposure. Direct contact may cause impairment of vision and corneal damage.
Ingestion Toxicity:	Moderately toxic if swallowed. Irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, and/or tissue ulceration. Ingestion may cause severe damage to the gastrointestinal tract with the potential to cause perforation.
Acute Target Organ Toxicity:	This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and 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:	Repeated inhalation exposure may cause impairment of lung function and permanent lung damage.
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 permanent damage. Corneal involvement or visual impairment is expected.
Sensitization:	Not expected to be a skin sensitizer. A similar product was found to be a negative skin sensitizer in the Guinea pig Buehler method test.
Chronic Target Organ Toxicity:	This product is corrosive to all tissues contacted.
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>
QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-18-ALKY	68391-01-5	13 - 17
Alkyl dimethyl ethylbenzyl ammonium chloride (12-	68956-79-6	13 - 17
ALCOHOL DENAT.	64-17-5	3 - 4
Water	7732-18-5	60 - 70

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



5. FIRE FIGHTING MEASURES

Flammability Summary (OSHA):	Combustible above 93 deg. C / 200 deg. F.
<u>Flammable Properties</u>	
Flash Point:	> 93 DEG°C / 200 DEG°F
Autoignition Temperature:	No data
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:	Use dry chemical, water fog, carbon dioxide (CO ₂), 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:	Carbon monoxide, Carbon dioxide
Upper Flammable / Explosive Limit, % in air:	Not applicable
Lower Flammable / Explosive Limit, % in air:	Not applicable

6. ACCIDENTAL RELEASE MEASURES

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.
<u>Spill Mitigation Procedures</u>	
Air Release:	Hazardous concentrations in air may be found in local spill area and immediately downwind. Contain all liquids for treatment or disposal.
Water Release:	This material is soluble in water. Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so.
Land Release:	Create a dike or trench to contain materials. Absorb spill with inert material (e.g., dry sand, clay, earth or commercial absorbent), then place in a chemical waste container. Decontaminate all clothing and the spill area using a detergent and flush with large amounts of water. Contain all liquids for treatment or disposal.
Additional Spill Information :	Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Utilize emergency response personal protection equipment prior to the start of any response. Evacuate all non-essential personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration.



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."

Empty Container Warning: Empty containers retain product residue (liquid and/or vapor) and can be dangerous.

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.

Respirator Type : A NIOSH approved air purifying respirator with organic vapor cartridge and N95 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 : Wear impervious gloves, boots and apron to avoid skin contact. A full impervious suit is recommended if exposure is possible to a large portion of the body.

Eye Protection: Use chemical goggles and a faceshield.

Protective Clothing Type: Impervious

General Protective Measures: An eye wash and safety shower 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>
ALCOHOL DENAT.	64-17-5	ZUS_ACGIH	1,000 ppm TWA
ALCOHOL DENAT.	64-17-5	ZUS_OSHAP1	1,000 ppm TWA 1,900 mg/m3 TWA
ALCOHOL DENAT.	64-17-5	NIOSH-IDLH	3,300 ppm



9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	liquid
Form	Hazy
Color:	Blue
Odor:	Mild - quaternary ammonium chloride odor
Molecular Weight:	Not applicable/Mixture
Specific Gravity :	No data
pH :	Approximately 7.5 10% solution
Boiling Point:	No data
Freezing Point:	No data
Melting Point:	No data
Density:	No data
Vapor Pressure:	No data (@ 25 Deg. C)
Vapor Density:	No data
Viscosity:	No data
Fat Solubility:	No data
Solubility in Water:	soluble
Partition coefficient n-octanol/water:	No data
Evaporation Rate:	No data
Oxidizing:	No data
Volatiles, % by vol.:	60.000 - 70.000%
VOC Content	No data
HAP Content	No data

10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Stable under normal conditions. Not sensitive to mechanical shock. Not sensitive to static discharge. Product will not undergo hazardous polymerization.
Conditions to Avoid:	Sparks, open flame, other ignition sources, and elevated temperatures., Contact with incompatible substances
Chemical Incompatibility:	oxidizers
Hazardous Decomposition Products:	Carbon monoxide, Carbon dioxide, ammonium compounds, Oxides of nitrogen
Decomposition Temperature:	No data

11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-18-ALKY	No data
Alkyl dimethyl ethylbenzyl ammonium chloride (12-ALCOHOL DENAT.	No data
LD50	= 7,060 mg/kg Rat



Dermal LD50 value:

QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-18-ALKY	No data
Alkyl dimethyl ethylbenzyl ammonium chloride (12-ALCOHOL DENAT.	No data
	LD50 Believed to be > 2,000 mg/kg Rabbit

Inhalation LC50 value:

QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-18-ALKY	No data
Alkyl dimethyl ethylbenzyl ammonium chloride (12-ALCOHOL DENAT.	No data
	Inhalation LC50 10 h = 20,000 ppm Rat

Product Animal Toxicity

<u>Oral LD50 value:</u>	LD50 Believed to be > 500 but < 5,000 mg/kg. Rat
<u>Dermal LD50 value:</u>	LD50 Believed to be approximately 2,000 mg/kg Rabbit
<u>Inhalation LC50 value:</u>	No data

Skin Irritation:	Expected to be corrosive.
Eye Irritation:	Corrosive to eyes.
Skin Sensitization:	Not expected to be a skin sensitizer., A similar product was found to be a negative skin sensitizer in the Guinea pig Buehler method test.

Acute Toxicity:	This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract.
Subchronic / Chronic Toxicity:	There are no known or reported effects from repeated exposure except those secondary to burns.

QUATERNARY AMMONIUM
COMPOUNDS, BENZYL-C12-18-ALKY

This product has been tested for Subchronic toxicity in laboratory animals and no systemic toxicity or target organ effects occurred in the test animals.

ALCOHOL DENAT.

Prolonged or repeated ingestion may cause liver damage.

Reproductive and Developmental Toxicity:	Not known or reported to cause reproductive or developmental toxicity.
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QUATERNARY AMMONIUM
COMPOUNDS, BENZYL-C12-18-ALKY

At high doses, maternal toxicity was observed. However, no developmental effects were observed.

ALCOHOL DENAT.

This chemical has been tested in laboratory animals and developmental and/or teratogenic effects were seen following ingestion.



Mutagenicity: Not known or reported to be mutagenic.
QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-18-ALKY ALCOHOL DENAT. This chemical has been tested and was shown to be non-mutagenic. This product has been tested for mutagenicity. Tests revealed both positive and negative results. Based on the weight of evidence, we judge this product NOT to be a mutagenic hazard.

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.
QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-18-ALKY ALCOHOL DENAT. The carcinogenicity has been evaluated through animal study and it was found not to be carcinogenic. 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. The FDA determined that this product is not carcinogenic in laboratory animals.

12. ECOLOGICAL INFORMATION

Overview: No data for product. Individual constituents are as follows:

Ecological Toxicity Values for: QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-18-ALKY

Bluegill sunfish	- (static). 96 h LC50 = 0.52 mg/l
Rainbow trout (Salmo gairdneri),	- (static). 96 h LC50 = 0.93 mg/l
Sheepshead minnow	- (static). 96 h LC50 = 0.86 mg/l
Daphnia magna,	- (static). 48 h EC50= 0.058 mg/l
Mysid shrimp	- (static). 96 h LC50= 0.092 mg/l

Ecological Toxicity Values for: ALCOHOL DENAT.

Fathead minnow (Pimephales promelas),	- (nominal, static). 96 h LC50 = 14,700 mg/l
Rainbow trout (Salmo gairdneri),	- (nominal, static). 96 h LC50 = 13,000 mg/l
Brine shrimp	- (nominal, static). 48 h LC50= 25.5 mg/l
Daphnia pulex	- (nominal, static). 18 h LC50= 12,100 mg/l
Daphnia magna,	- (nominal, static). 48 h EC50> 10,000 mg/l
Daphnia magna,	- (nominal, static). 48 h LC50= 9,248 mg/l
Ceriodaphnia dubia	- (nominal, static). 48 h LC50= 8,808 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 will be a nonhazardous waste according to U.S. RCRA regulations. Dispose of in accordance with all Local, State, Federal, and Provincial Environmental Regulations.

Disposal Methods : As a nonhazardous 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): UN1760 CORROSIVE LIQUID, N.O.S. (QUATERNARY AMMONIUM COMPOUND) 8 II

Water (IMDG): UN1760 CORROSIVE LIQUID, N.O.S., (QUATERNARY AMMONIUM COMPOUND) 8 II MARINE POLLUTANT

Air (IATA): Flash Point: 93.33 DEG°C >
UN1760 CORROSIVE LIQUID, N.O.S., (QUATERNARY AMMONIUM COMPOUND) 8 II

Emergency Response Guide Number: ERG # 154

Transportation Notes: This product is regulated as a hazardous material under U.S. DOT's 49 CFR 172.101 and is packaged, described and marked for shipment under Limited Quantity Exception in 49 CFR 173.154. 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).

EMS: F-A, S-B

15. REGULATORY INFORMATION

UNITED STATES:

Toxic Substances Control Act (TSCA): This is an EPA registered pesticide.
EPA Pesticide Registration Number: 1258-1288

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

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

01 1996

ETHYL ALCOHOL

Clean Air Act Haz. Air Pollutants Section 112:

ZUS_CAAHAP	None established
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ZUS_CAAHRP	None established
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CAA AP	None established
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State Right-to-Know Regulations Status of Ingredients

Pennsylvania:

CAS #	COMPONENT NAME
ZUSPA_RTK	None established



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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:

Ingredient Disclosure List (WHMIS)

2007-08-24

Threshold limits: 0.1 Weight percent

805

Ethanol

16. OTHER INFORMATION

MSDS REVISION STATUS : Revised to meet the ANSI standard of 16 sections
SECTIONS REVISED: 14
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. .