



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: HTH® ULTRA 3" CHLORINATING TABLETS
EPA Registration Number: 1258-1341

1. PRODUCT AND COMPANY IDENTIFICATION

Arch Chemicals, Inc. 501 Merritt 7 PO Box 5204 Norwalk, CT 06856-5204	REVISION DATE:	02/21/2012
	SUPERCEDES:	06/09/2011
	MSDS Number:	000000013792
	SYNONYMS:	Trichloroisocyanuric Acid, TCCA, Trichlor
	CHEMICAL FAMILY:	Chloroisocyanurates
	DESCRIPTION / USE	Swimming pool water treatment
	FORMULA:	NOT APPLICABLE/MIXTURE

2. HAZARDS IDENTIFICATION

OSHA Hazard Classification:	Corrosive to eyes and skin, Lung toxin, Toxic by ingestion, Toxic by inhalation (dust), Oxidizer
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Routes of Entry:	Inhalation, skin, eyes, ingestion
Chemical Interactions:	No known or reported interactions.
Medical Conditions Aggravated:	Asthma, respiratory and cardiovascular 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	0	2	
NFPA	2	0	2	Oxidizer

Immediate (Acute) Health Effects

Inhalation Toxicity:	This product in the form of solid tablets is not an inhalation hazard. However, if dust is created and inhaled, inhalation of this material in dust or vapor form is irritating to the nose, mouth, throat and lungs. It may also cause burns to the respiratory tract with the production of lung edema which can result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function. Inhalation of high concentrations can result in permanent lung damage. Toxic by inhalation (dust).
Skin Toxicity:	DRY MATERIAL CAUSES MODERATE SKIN IRRITATION. WET MATERIAL CAUSES SKIN BURNS. Dermal exposure to dry material causes moderate skin irritation characterized by redness and swelling. Dermal exposure to wet material can cause severe irritation and/or burns characterized by redness, swelling and scab formation. Prolonged skin exposure may cause permanent damage.
Eye Toxicity:	CAUSES BURNS TO EYES. Severe irritation and/or burns can occur following eye exposure. Direct contact may cause impairment of vision and corneal damage.
Ingestion Toxicity:	Toxic if swallowed. CAUSES BURNS TO DIGESTIVE TRACT. 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., The dry material is irritating to the skin. However when wet, it will produce burns to the skin.

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:	Effects similar to those from acute exposure. In addition, chronic exposure to wet material may cause effects secondary to tissue destruction.



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.

Sensitization: This material tested negative for skin sensitization in animals.

Chronic Target Organ Toxicity: There are no known or reported target organ effects from chronic exposure., Toxicological investigation indicates it does not produce significant effects from chronic exposure.

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>
TRICHLORO-S-TRIAZINETRIONE	87-90-1	92.0
ZINC SULFATE	7446-19-7	3.5
Hexametaphosphate	68915-31-1	2.50
ALUMINUM SULFATE, ANHYDROUS	10043-01-3	1.50

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): Product is not known to be flammable, combustible or pyrophoric., NFPA Oxidizer Class: Meets the criteria of an NFPA Class 1 Oxidizer

Flammable Properties

Flash Point: Not applicable

Autoignition Temperature: Not applicable

Fire / Explosion Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Closed containers may explode (due to the build up of steam pressure) when exposed to extreme heat.

Extinguishing Media: Water only.

Fire Fighting Instructions: Use water to cool containers exposed to fire. On small fires, use water spray or fog. On large fires, use heavy deluge or fog streams. Flooding amounts of water may be required before extinguishment can be accomplished. Do not use dry extinguishers containing ammonium compounds.

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: Response to a large quantity spill (100 pounds or greater) or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied air respirator or self contained breathing apparatus (SCBA), chemical resistant gloves, coveralls and boots. In case of fire, this personal protective equipment should be used in addition to normal fire fighter equipment. Compatible materials for response to this material are: neoprene. Protection concerns must also address the following: If this material becomes damp/wet or contaminated in a container, the formation of nitrogen trichloride gas may occur and an explosive condition may exist.



Spill Mitigation Procedures

Air Release:

Vapors may be suppressed by the use of water fog.

Water Release:

This material is heavier than water. This material is soluble in water. Stop water flow or divert water flow around spill if possible and safe to do so. Begin monitoring for available chlorine and pH immediately.

Land Release:

Do not contaminate spill material with any organic materials, ammonia, ammonium salts or urea. Clean up all spill material with clean, dry dedicated equipment and place in a clean dry container.

Additional Spill Information :

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC: 1-800-424-9300 REPORTABLE QUANTITY: Not Applicable (Per 40 CFR 302.4) Hazardous concentrations in air may be found in local spill area and immediately downwind. If spill material is still dry, do not put water directly on this product as a gas evolution may occur. If material is wet, contact 1-800-654-6911 for proper stabilization procedures. Dispose of spill residues per guidelines under Section 13, Disposal Consideration. This material may be neutralized for disposal; you are requested to contact Arch Chemicals at 1-800-654-6911 before beginning any such procedure.

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 dust, mist, vapor or gas.

Storage:

Store in a cool dry ventilated location, away from sources of ignition or other incompatible conditions and chemicals. Keep container(s) closed. Avoid creating dusts.

Shelf Life Limitations:

Indefinite. Available chlorine loss can be as little as 0.1% per year at ambient temperatures.

Incompatible Materials for Storage:

organic materials Reducing agents nitrogen containing materials oxidizers acids Bases (Incompatible materials for packaging: paper, cardboard)

Do Not Store At temperatures Above: 60 DEG°C / 140 DEG°F

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 full-face air purifying respirator equipped with combination chlorine/P100 cartridges. 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 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.

Protective Clothing Type: Nitrile, Natural rubber, Neoprene (This includes: gloves, boots, apron, protective suit)

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>
TRICHLORO-S-TRIAZINETRIONE	87-90-1	ARCH-ROEG*	0.5 mg/m ³ TWA
ALUMINUM SULFATE, ANHYDROUS	10043-01-3	ACGIH	2 mg/m ³ Calculated as Al TWA soluble

*ARCH-ROEG: Arch Recommended Occupational Exposure Guideline.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: solid

Form: Tablet

Color: white

Odor: Strong chlorine

Molecular Weight: 232.41

Specific Gravity : >1 (@ 20 Deg. C)

pH : 2.6 - 3.2 solution

Boiling Point: Not applicable

Freezing Point: Not applicable

Melting Point: Not applicable

Density: 1.79g/cc

Vapor Pressure: Not available

Vapor Density: Not applicable

Viscosity: Not applicable

Fat Solubility: No data

Solubility in Water: 1.2 % (@ 25 Deg. C)

Partition coefficient n-octanol/water: Not available.



Evaporation Rate:	Not applicable
Oxidizing:	Oxidizer
Volatiles, % by vol.:	Not applicable
VOC Content	Not applicable
HAP Content	Not applicable

10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	May be unstable at temperatures above 225 Deg. C (437 Deg. F) Not sensitive to mechanical shock. Not sensitive to static discharge. Product will not undergo hazardous polymerization. Product is an oxidizer.
Conditions to Avoid:	Sparks, open flame, other ignition sources, and elevated temperatures., Contact with small amounts of water may result in an exothermic reaction with the liberation of toxic fumes., Damp or slightly wet product (will evolve nitrogen trichloride), May be unstable at temperatures above 225 Deg. C (437 Deg. F)
Chemical Incompatibility:	Organic materials, Oils, Grease, Sawdust, Reducing agents, nitrogen-containing compounds, oxidizers, acids, Bases, Dry fire extinguishers containing ammonium compounds
Hazardous Decomposition Products:	Nitrogen trichloride, Chlorine, nitrous oxides, cyanates, Carbon monoxide, Carbon dioxide
Decomposition Temperature:	225 DEG°C - , 437 DEG°F-

11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

TRICHLORO-S- TRIAZINETRIONE	LD50 = 490 mg/kg	Rat
ZINC SULFATE	LD50 > 2,949 mg/kg	rat
Hexametaphosphate	LD50 = 3,053 mg/kg	rat
ALUMINUM SULFATE, ANHYDROUS	LD50 = 1,930 mg/kg	Rat
ALUMINUM SULFATE, ANHYDROUS	LD50 = 6,207 mg/kg	Mouse

Component Animal Toxicology

Dermal LD50 value:

TRICHLORO-S- TRIAZINETRIONE	LD50 > 2,000 mg/kg	Rabbit
ZINC SULFATE	LD50 Believed to be > 2,000 mg/kg	rat
Hexametaphosphate	no data available	
ALUMINUM SULFATE, ANHYDROUS	LD50 No data	



Component Animal Toxicology

Inhalation LC50 value:

TRICHLORO-S-TRIAZINETRIONE	LC50 1 h (aerosol dust), (Nose Only)	Approximately 2.16 MG/L	Rat
TRICHLORO-S-TRIAZINETRIONE	LC50 4 h (aerosol dust), (Nose Only)	Approximately 0.54 MG/L	Rat
ZINC SULFATE	no data available		
Hexametaphosphate	LC50 4 h	> 3.69 MG/L	rat
ALUMINUM SULFATE, ANHYDROUS	Inhalation LC50	No data	

Product Animal Toxicity

Oral LD50 value:

LD50 490 mg/kg Rat

Dermal LD50 value:

LD50 > 2,000 mg/kg Rabbit

Inhalation LC50

value:

LC50 4 h (aerosol dust), (Nose Only) Approximately 0.54 MG/L Rat
LC50 1 h (aerosol dust), (Nose Only) Approximately 2.16 MG/L Rat

Skin Irritation:

DRY MATERIAL CAUSES MODERATE SKIN IRRITATION., WET MATERIAL CAUSES SKIN BURNS.

Eye Irritation:

Corrosive to eyes.

Skin Sensitization:

Negative skin sensitizer, guinea pig - Buehler Method

Acute Toxicity:

This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract. The dry material is irritating to the skin. However when wet, it will produce burns to the skin.

Subchronic / Chronic Toxicity:

There are no known or reported effects from repeated exposure., Toxicological investigation indicates it does not produce significant effects from chronic exposure.

Reproductive and Developmental Toxicity:

Not known or reported to cause reproductive or developmental toxicity.

TRICHLORO-S-TRIAZINETRIONE

Not known or reported to cause reproductive or developmental toxicity. A similar product has been tested and it did not produce teratogenic or fetotoxic effects in laboratory animals.

Mutagenicity:

Not known or reported to be mutagenic.

TRICHLORO-S-TRIAZINETRIONE

This product was determined to be non-mutagenic in the Ames assay.

Carcinogenicity:

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



TRICHLORO-S-TRIAZINETRIONE

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

12. ECOLOGICAL INFORMATION

Overview: Highly toxic to fish and other aquatic organisms.

Ecological Toxicity Values - Product:

Rainbow trout (<i>Salmo gairdneri</i>),	-	96 h LC50	0.32 mg/l
Bluegill sunfish	-	96 h LC50	0.30 mg/l
Daphnia magna,	-	48 h LC50	0.21 mg/l
Mallard duck	-	8 DAYS Dietary LC50	> 10,000 ppm
Mallard duck	-	Acute Oral LD50	1,600 mg/kg
Bobwhite quail	-	8 DAYS Dietary LC50	7,422 ppm

Ecological Toxicity Values for: TRICHLORO-S-TRIAZINETRIONE

Rainbow trout (<i>Salmo gairdneri</i>),	-	96 h LC50	0.32 mg/l
Bluegill sunfish	-	96 h LC50	0.30 mg/l
Daphnia magna,	-	48 h LC50	0.21 mg/l
Mallard duck	-	8 DAYS Dietary LC50	> 10,000 ppm
Mallard duck	-	Acute Oral LD50	1,600 mg/kg
Bobwhite quail	-	8 DAYS Dietary LC50	7,422 ppm

Ecological Toxicity Values for: ZINC SULFATE

Rainbow trout (<i>Oncorhynchus mykiss</i>)	-	96 h LC50	= 2.4 mg/l
Fathead minnow (<i>Pimephales promelas</i>),	-	(static). 96 h LC50	= 3.1 mg/l
Daphnia magna,	-	(static). 48 h LC50	= 0.690 mg/l

Ecological Toxicity Values for: ALUMINUM SULFATE, ANHYDROUS

Largemouth bass	-	96 h LC50	= 250 mg/l
Mosquito fish	-	96 h LC50	= 235 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.

Potential US EPA Waste Codes : D001

14. TRANSPORT INFORMATION

Land (US DOT): UN3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (TRICHLORO-S-TRIAZINETRIONE, ZINC SULFATE) 9 III

Water (IMDG): UN3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (TRICHLORO-S-TRIAZINETRIONE, ZINC SULFATE) 9 III MARINE POLLUTANT

Air (IATA): Flash Point: Not applicable
UN3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (TRICHLORO-S-TRIAZINETRIONE, ZINC SULFATE) 9 III

Emergency Response Guide Number: ERG # 171



Transportation Notes: Material is not regulated for ground transportation within the US if shipped in non-bulk packages. 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-F

15. REGULATORY INFORMATION

UNITED STATES:

Toxic Substances Control Act (TSCA): This is an EPA registered pesticide.
EPA Pesticide Registration Number: 1258-1341

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 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

Reportable Quantity (49 CFR 172.101, Appendix):

ZUS_CERCLA Reportable quantity Aluminum sulfate
Value: 5,000lbs
ZINC AND COMPOUNDS
Value:

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



Ingredient Disclosure List (WHMIS)
2007-08-24
Threshold limits: 1 Weight percent
148
Trichloroisocyanuric acid

Ingredient Disclosure List (WHMIS)
2007-08-24
Threshold limits: 1 Weight percent
67
Boric acid

Ingredient Disclosure List (WHMIS)
1988-01-20
Threshold limits: 1 Weight percent
53
ALUMINUM, WATER-SOLUBLE SALTS, N.O.S.

16. OTHER INFORMATION

MSDS REVISION STATUS :
SECTIONS REVISED: 1
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. .