PRODUCT NAME: HTH® GREEN TO BLUE SHOCK TREATMENT

1. PRODUCT AND COMPANY IDENTIFICATION

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

REVISION DATE: 04/21/2010
SUPERCEDES:

MSDS Number: 000000011265
SYNONYMS: None
CHEMICAL FAMILY: Inorganic mixture
DESCRIPTION / USE: Swimming pool water treatment
FORMULA: AL2CL(OH)5

2. HAZARDS IDENTIFICATION

OSHA Hazard Classification: Mild eye irritant, Mild skin irritant

Routes of Entry: Inhalation, 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

<table>
<thead>
<tr>
<th>Hazard Ratings</th>
<th>Health</th>
<th>Flammability</th>
<th>Physical / Instability</th>
<th>PPI / Special hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NFPA</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Immediate (Acute) Health Effects

Inhalation Toxicity: Inhalation of dust may cause irritation to the mucous membranes of the respiratory tract. Any irritation would be transient with no permanent damage expected.

Skin Toxicity: Skin contact may cause minor irritation consisting of transient redness and/or swelling. This irritant effect would not be expected to result in permanent damage.

Eye Toxicity: Contact would be expected to cause minor irritation, consisting of transient redness and swelling. No corneal involvement or visual impairment is expected.

Ingestion Toxicity: Ingestion may cause mild irritation of the gastrointestinal tract and may also cause gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting or diarrhea. Moderately toxic if swallowed.

Acute Target Organ Toxicity: May cause mild skin and 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.

Reproductive and Developmental Toxicity:
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: There are no known or reported target organ effects from chronic exposure.
Supplemental Health Hazard Information: No additional health information available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS OR CHEMICAL NAME</th>
<th>CAS #</th>
<th>% RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium chloride</td>
<td>1327-41-9</td>
<td>100 -</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Inhalation: IF INHALED: Remove individual to fresh air. Seek medical attention if breathing becomes difficult or if respiratory irritation develops.
Skin Contact: IF ON SKIN: Flush skin with water for 15 minutes. Take off all contaminated clothing. Seek medical attention if irritation develops.

Eye Contact: IF IN EYES: Flush eyes with plenty of water for at least 15 minutes. Seek medical attention if irritation develops.

Ingestion: IF SWALLOWED: Call a physician immediately. DO NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flammability Summary (OSHA): Product is not known to be flammable, combustible, pyrophoric or explosive.

Flammable Properties
Flash Point: Not applicable
Autoignition Temperature: Not applicable
Fire / Explosion Hazards: Material will not ignite or burn. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Not Applicable. - Choose extinguishing media suitable for surrounding materials.

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.

Hazardous Combustion Products: Hydrogen chloride
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: Use the personal protective equipment recommended in Section 8 and a NIOSH approved self-contained breathing apparatus.

Spill Mitigation Procedures
Air Release: Dusting from this product could occur. Contain all solids 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: Sweep up and place in suitable clean, dry containers for reclamation or later disposal. Avoid dust generation. Do not place spill materials back in their original containers. Contain all solids for treatment or disposal.
Additional Spill Information: 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 inhalation of dust and fumes.

Storage: Store in a cool, dry and well ventilated place. Isolate from incompatible materials. Keep containers tightly closed when not in use.

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

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Additional ventilation beyond that of general exhaust is not normally required. No exposure limits exist for the constituents of this product.

Protective Equipment for Routine Use of Product

Respiratory Protection: Respiratory protection not normally needed. If dusting occurs, wear a NIOSH approved respirator.

Respirator Type: Wear a NIOSH approved N95 respirator.

Skin Protection: Wear impervious gloves to avoid skin contact.

Eye Protection: Use safety glasses with side shields.

Protective Clothing Type: Impervious

Exposure Limit Data

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS #</th>
<th>Name of Limit</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Data Found</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. PHYSICAL AND CHEMICAL PROPERTIES

| Physical State: | solid |
| Form:          | Powder |
| Color:         | Yellow |
| Odor:          | No data |
| Molecular Weight: | No data |
| Specific Gravity: | No data |
| pH:            | No data |
| Boiling Point: | Not applicable |
Freezing Point: Not applicable
Melting Point: No data
Density: 1.700g/cc
Vapor Pressure: Not applicable
Vapor Density: Not applicable
Viscosity: No data
Fat Solubility: No data
Solubility in Water: Soluble
Partition coefficient n-octanol/water: No data
Evaporation Rate: Not applicable
Oxidizing: No data
Volatile, % by vol.: No data
VOC Content: No data
HAP Content: No data

10. STABILITY AND REACTIVITY

Stability and Reactivity Summary: Stable under normal conditions. Product will not undergo hazardous polymerization.
Conditions to Avoid: High temperatures, Contact with incompatible substances
Chemical Incompatibility: Aluminium, brass, copper, iron, steel (corrosion will occur)
Hazardous Decomposition Products: Hydrogen chloride
Decomposition Temperature: No data

11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Component Animal Toxicology</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oral LD50 value:</strong></td>
<td></td>
</tr>
<tr>
<td>Aluminium chloride</td>
<td>LD50 = 681 mg/kg rat</td>
</tr>
<tr>
<td><strong>Dermal LD50 value:</strong></td>
<td></td>
</tr>
<tr>
<td>Aluminium chloride</td>
<td>no data available</td>
</tr>
<tr>
<td><strong>Inhalation LC50 value:</strong></td>
<td></td>
</tr>
<tr>
<td>Aluminium chloride</td>
<td>no data available</td>
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<td>no data available</td>
</tr>
<tr>
<td><strong>Inhalation LC50 value:</strong></td>
<td>no data available</td>
</tr>
<tr>
<td>Skin Irritation:</td>
<td>May cause mild skin irritation.</td>
</tr>
<tr>
<td>Eye Irritation:</td>
<td>May cause mild eye irritation.</td>
</tr>
<tr>
<td>Skin Sensitization:</td>
<td>This material is not known or reported to be a skin or respiratory sensitizer.</td>
</tr>
<tr>
<td>Acute Toxicity:</td>
<td>May cause mild skin and eye irritation. Ingestion may cause mild gastrointestinal discomfort.</td>
</tr>
</tbody>
</table>
Subchronic / Chronic Toxicity: Not known or reported to cause subchronic or chronic toxicity.

Reproductive and Developmental Toxicity: Not known or reported to cause reproductive or developmental toxicity.

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.

12. ECOLOGICAL INFORMATION

Overview: no data available

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: Not applicable

14. TRANSPORT INFORMATION

Land (US DOT): Not Regulated
Water (IMDG): NOT REGULATED AS A DOT HAZARDOUS MATERIAL, NOT REGULATED AS A HAZARDOUS MATERIAL,

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): The components of this product are listed on the TSCA Inventory of Existing Chemical Substances.
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

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:

HTH® GREEN TO BLUE SHOCK TREATMENT
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Pennsylvania: Hazardous substance list
1990-01-01
ALUMINUM SOLUBLE SALTS
hazardous substance

New Jersey:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>COMPONENT NAME</th>
</tr>
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<tbody>
<tr>
<td>ZUSNJ_RTK</td>
<td>None established</td>
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</table>

Massachusetts:

<table>
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<tr>
<th>CAS #</th>
<th>COMPONENT NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZUSMA_RTK</td>
<td>None established</td>
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</table>

California Proposition 65:

<table>
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<tr>
<th>CAS #</th>
<th>COMPONENT NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZUSCA_P65</td>
<td>None established</td>
</tr>
</tbody>
</table>

WHMIS Hazard Classification:

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 : Revised to meet the ANSI standard of 16 sections
Major References : Available upon request.