PRODUCT NAME: HTH® SUPER SOCK IT® SHOCK 'N SWIM

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

REVISION DATE: 10-25-2004 SUPERCEDES: 10-25-2004
MSDS NO: 05126-0001 - 59406

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

SYNONYMS: None
CHEMICAL FAMILY: Hypochlorite
FORMULA: Not Applicable/Mixture
DESCRIPTION: Sanitizer and Oxidizer
OSHA HAZARD CLASSIFICATION: Oxidizer, toxic by inhalation, corrosive, skin and eye hazard, lung toxin

SECTION 2 COMPONENT DATA

PRODUCT COMPOSITION
CAS or CHEMICAL NAME: Calcium hypochlorite
CAS NUMBER: 7778-54-3
PERCENTAGE RANGE: 50-70%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARD: 3 mg/cubic meter (ceiling) as Chlorine: Internal Exposure Standard

CAS or CHEMICAL NAME: Magnesium sulfate heptahydrate
CAS NUMBER: 10034-99-8 (anhydrous 7487-88-9)
PERCENTAGE RANGE: 15-25%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS: None Established

CAS or CHEMICAL NAME: Sodium chloride
CAS NUMBER: 7647-14-5
PERCENTAGE RANGE: 0-3%
HAZARDOUS PER 29 CFR 1910.1200: No
EXPOSURE STANDARDS: None Established

CAS or CHEMICAL NAME: Calcium chlorate
CAS NUMBER: 10137-74-3
PERCENTAGE RANGE: 0-5%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS: None Established

CAS or CHEMICAL NAME: Calcium chloride
CAS NUMBER: 10043-52-4
PERCENTAGE RANGE: 0-5%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS: None Established

CAS or CHEMICAL NAME: Calcium hydroxide
CAS NUMBER: 1305-62-0
PERCENTAGE RANGE: 0-5%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS:

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<th>ACGIH(TLV)</th>
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CAS or CHEMICAL NAME: Calcium carbonate
CAS NUMBER: 471-34-1
PERCENTAGE RANGE: 0-4%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS:

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CAS or CHEMICAL NAME: Water
CAS NUMBER: 7732-18-5
PERCENTAGE RANGE: 17-22%
HAZARDOUS PER 29 CFR 1910.1200: No
EXPOSURE STANDARDS: None Established

SECTION 3 PRECAUTIONS FOR SAFE HANDLING AND STORAGE

DO NOT TAKE INTERNALLY. AVOID INHALATION OF DUST AND FUMES. AVOID CONTACT WITH EYES, SKIN OR CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER. REMOVE AND WASH CONTAMINATED CLOTHING BEFORE REUSE.

STORAGE CONDITIONS: Keep product tightly sealed in original containers. Store product in a cool, dry, well-ventilated area. Store away from combustible or flammable products. Keep product packaging clean and free of all contamination, including, e.g., other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc.

DO NOT STORE AT TEMPERATURES ABOVE: 52 Deg.C (125 Deg.F)

In the event that the calcium hypochlorite were to separate from the blend, storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. Also, the magnesium sulfate heptahydrate will begin to loose water of crystallization at approximately 150 Deg.C (302 Deg.F); Should all the water of crystallization be lost, the likelihood of rapid decomposition occurring, as above, would be increased.

PRODUCT STABILITY AND COMPATIBILITY

SHELF LIFE LIMITATIONS: Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage
time and temperatures. Do not store product at temperatures above 52 Deg.C (125 Deg.F). When stored under moderate temperature conditions, product will maintain stated label strength for approximately one year. Prolonged storage at 35 Deg.C (95 Deg.F) or above will significantly shorten the shelf life. Storage in a climate-controlled storage area or building is recommended in those areas where extremes of high temperature occur.

INCOMPATIBLE MATERIALS FOR PACKAGING: Product packaging must be clean and free of contamination by other materials, including, e.g., other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc.

INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT: Do not allow product to come in contact with other materials, including, e.g., other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc.

SECTION 4 PHYSICAL DATA

APPEARANCE: White, free flowing powder
FREEZING POINT: Not Applicable
BOILING POINT: Not Applicable
DECOMPOSITION TEMPERATURE: Onset - Approximately 170-180 Deg.C (338-356 Deg.F)
SPECIFIC GRAVITY: Not Applicable
BULK DENSITY: 0.8 g/cc, loose
pH @ 25 DEG.C: 10-11 (1% solution)
VAPOR PRESSURE @ 25 DEG.C: Not Applicable
SOLUBILITY IN WATER: Approximately 18% @ 25 Deg.C. Product also contains calcium hydroxide and calcium carbonate which will leave a residue.
VOLATILES, PERCENT BY VOLUME: Not Applicable
EVAPORATION RATE: Not Applicable
VAPOR DENSITY: Not Applicable
MOLECULAR WEIGHT: 143 (Active ingredient)
ODOR: Chlorine-like
COEFFICIENT OF OIL/WATER DISTRIBUTION: Not Applicable

SECTION 5 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

PERSONAL PROTECTION FOR ROUTINE USE OF PRODUCT:
RESPIRATORY PROTECTION: Wear NIOSH approved respirator if dusts are created.
VENTILATION: Use local exhaust ventilation to minimize dust and chlorine levels where industrial use occurs. Otherwise, ensure good general ventilation.
SKIN AND EYE PROTECTIVE EQUIPMENT: Wear gloves and safety glasses to avoid skin and eye contact. Where industrial use occurs, chemical goggles or full impermeable suit may be required.

EQUIPMENT SPECIFICATIONS:
RESPIRATOR TYPE: NIOSH approved full face piece air-purifying respirator with chlorine cartridges and dust/mist prefilter. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or in exposure levels which exceed 10X the PEL.

PROTECTIVE CLOTHING TYPE: Neoprene
(This includes: gloves, boots, apron, protective suit)
SECTION 6  FIRE AND EXPLOSION HAZARD INFORMATION

This product is chemically reactive with many substances. Any contamination of the product with other substances by spill or otherwise may result in a chemical reaction and fire. This product is a strong oxidizer which is capable of intensifying a fire once started.

FLAMMABILITY DATA:
  FLAMMABLE: No
  COMBUSTIBLE: No
  PYROPHORIC: No
  FLASH POINT: Not Applicable
  AUTOIGNITION TEMPERATURE: Not Applicable

NFPA RATINGS:
  NFPA OXIDIZER CLASS: Meets the criteria of an NFPA Class 1 Oxidizer

HMIS RATINGS:
  Health: 3
  Flammability: 0
  Reactivity: 1

EXTINGUISHING MEDIA:
  Water only

FIRE FIGHTING TECHNIQUES AND COMMENTS:
  Use water to cool containers exposed to fire. Also see Section 11.

OTHER: Do not use dry extinguishers containing ammonium compounds

SECTION 7  REACTIVITY INFORMATION

CONDITIONS UNDER WHICH THIS PRODUCT MAY BE UNSTABLE:
  TEMPERATURES ABOVE: 170 Deg.C (338 Deg.F)
  MECHANICAL SHOCK OR IMPACT: No
  ELECTRICAL (STATIC) DISCHARGE: No
  HAZARDOUS POLYMERIZATION: Will not occur
  INCOMPATIBLE MATERIALS: This product is chemically reactive with many substances, including, e.g., other pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, corrosive, flammable or combustible materials.
  HAZARDOUS DECOMPOSITION PRODUCTS: Chlorine gas
  OTHER CONDITIONS TO AVOID: Storage at temperatures >125 Deg.F (52 Deg.C) Prevent ingress of humidity and moisture into container or package. Always close the lid.

SUMMARY OF REACTIVITY: (See also Section 6)
  OXIDIZER: Yes
  PYROPHORIC: No
  ORGANIC PEROXIDE: No
  WATER REACTIVE: No
  OTHER: calcium hypochlorite products meet the specifications of ASTM method E-487-74 as set forth in 49 C. F. R. Sec. 173.21, Title 49-Code of Federal Regs.(DOT Regs.)

SECTION 8  FIRST AID

EYES: Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a
physician at once.

SKIN: Immediately flush with water for at least 15 minutes. Call a physician. If clothing comes in contact with the product, it should be removed immediately and laundered before reuse.

INGESTION: Immediately drink large quantities of water. DO NOT induce vomiting. Call a physician at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

INHALATION: Remove victim to fresh air. Support respiration if needed. Call a physician.

SECTION 9 TOXICOLOGY AND HEALTH INFORMATION

ROUTES OF ABSORPTION
Inhalation, skin and eye contact, ingestion

WARNING STATEMENT AND WARNING PROPERTIES
MODERATELY TOXIC IF SWALLOWED. AVOID BREATHING DUST OR FUMES. HARMFUL IF PRODUCT IS INHALED IN HIGH CONCENTRATIONS. CAUSES SKIN, EYE, DIGESTIVE TRACT AND RESPIRATORY TRACT BURNS.

HUMAN RESPONSE DATA
ODOR THRESHOLD: Approximately 2.0 mg/cubic-meter, based on odor threshold of chlorine.
IRRITATION THRESHOLD: Approximately 18-31 mg/cubic meter, based on the irritation threshold of chlorine.
IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: Approximately 63 mg/cubic-meter, based on IDLH concentration of chlorine.

SIGNS, SYMPTOMS, AND EFFECTS OF EXPOSURE

INHALATION
ACUTE:
Inhalation of dust or vapor from this product can be irritating to the nose, mouth, throat and lungs. In confined areas, mechanical agitation can result in high levels of dust, and reaction with incompatible materials (as listed in Section VII) can result in high concentrations of chlorine vapor, either of which may result in burns to the respiratory tract, producing lung edema, shortness of breath, wheezing, choking, chest pains, impairment of lung function and possible permanent lung damage.

CHRONIC:
Chronic (repeated) inhalation exposure may cause impairment of lung function and permanent lung damage.

EYE
Severe irritation and/or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage.

SKIN
ACUTE:
Dermal exposure can cause severe irritation and/or burns characterized by redness, swelling and scab formation. Prolonged skin exposure may cause permanent damage.

CHRONIC:
Effects from chronic skin exposure would be similar to those from single exposure except for effects secondary to tissue destruction.

INGESTION
ACUTE:
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. Significant exposure to this material can lead to serious health effects and/or death.

CHRONIC:
There are no known or reported effects from chronic exposure except for effects similar to those experienced from single exposure. The acute corrosivity of this product makes chronic ingestion of significant amounts unlikely

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Asthma, respiratory and cardiovascular disease

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY
None known or reported

ANIMAL TOXICOLOGY

ACUTE TOXICITY:
Inhalation LC 50: >2.04 mg/l (1 hr., rat); > 0.51 mg/l (4 hr., rat) – extrapolated from inhalation toxicity studies using calcium hypochlorite
Oral LD 50: Approximately 1200 mg/kg. (rat) based on extrapolation from oral toxicity studies using calcium hypochlorite
Dermal LD 50: > 2 g/kg. (rabbit)
Causes burns to eyes and skin

ACUTE TARGET ORGAN TOXICITY: This product is corrosive to all tissues contacted and upon inhalation may cause irritation to mucous membranes and respiratory tract.

CHRONIC TOXICITY:
There are no known or reported effects from repeated exposure except those secondary to burns.

REPRODUCTIVE TOXICITY:
Calcium hypochlorite has been tested for teratogenicity in laboratory animals. Results of this study have shown that calcium hypochlorite is not a teratogen.

CARCINOGENICITY:
This product is not known or reported to be carcinogenic by any reference source, including: IARC, OSHA, NTP or EPA.
One hundred mice were exposed dermally 3 times a week for 18 months to a solution of calcium hypochlorite. Histopathological examination failed to show an increased incidence of tumors.
IARC (International Agency for Research on Cancer) reviewed studies conducted with several hypochlorite salts. IARC has classified hypochlorite salts as having inadequate evidence for carcinogenicity to humans and animals. IARC therefore considers hypochlorite salts to be not classifiable as to their carcinogenicity to humans. (Group 3 substance).

MUTAGENICITY:
Calcium hypochlorite has been tested in the dominant lethal assay in male mice, and it did not induce a dominant lethal response. Calcium hypochlorite has been reported to produce mutagenic activity in two in vitro assays. It has, however, been shown to lack the capability to produce mutations in animals based on results from the micronucleus assay. In vitro assays frequently are inappropriate to judge the mutagenic potential of bactericidal chemicals due to a high degree of cellular toxicity. The concentration which produces mutations in these in vitro assays is significantly greater than the concentrations used for disinfection. Based on high cellular toxicity in in vitro assays and the lack of mutagenicity in animals, the risk of genetic damage to humans is judged not significant.
AQUATIC TOXICITY:
Bluegill, 96 hr. LC50: Approximately 0.12 mg/l (nominal, static) based on extrapolation from studies using calcium hypochlorite
Rainbow trout, 96 hr. LC50: 0.22 mg/l (nominal, static) based on extrapolation from studies using calcium hypochlorite
Daphnia magna, 48 hr. LC50: 0.15 mg/l (nominal, static) based on extrapolation from studies using calcium hypochlorite

TOXICITY TO WILDLIFE:
Bobwhite quail, dietary LC50: > 7,000 ppm based on extrapolation from studies using calcium hypochlorite
Mallard ducklings, dietary LC50: > 7,000 ppm based on extrapolation from studies using calcium hypochlorite
Bobwhite quail, oral LD50: Approximately 4800 mg/kg. based on extrapolation from studies using calcium hypochlorite

SECTION 10 TRANSPORTATION INFORMATION
This product is regulated as a hazardous material under U.S. DOT 49 CFR 172.101
Owing to package capacity, product is packaged, described and marked to ship under Consumer Commodity Exception as outlined in 49 CFR 173.152 – Exemption for Division 5.1 (Oxidizes)


ICAO/IATA Air: Oxidizing Solid, N.O.S. (Calcium Hypochloite), 5.1, UN 1479, II

IMDG Ocean: Same as IARC/iaata Air Marine Pollutant: Not Listed Label/Placards: Hazard Division 5.1 Oxidizer

SECTION 11 SPILL AND LEAKAGE PROCEDURES
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

REPORTABLE QUANTITY: 10 lbs. (as Calcium hypochlorite) Per 40 CFR 302.4

SPILL MITIGATION PROCEDURES:
Hazardous concentrations in air may be found in local spill area and immediately downwind. Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel.

AIR RELEASE: Vapors may be suppressed by the use of a water fog. All water utilized to assist in fume suppression, decontamination or fire suppression may be contaminated and must be contained before disposal and/or treatment.

WATER RELEASE: This material is heavier than water. This material is soluble in water. Monitor all exit water for available chlorine and pH. Advise local authorities of any contaminated water release.

LAND SPILL: Contact at 1-800-6546-911 immediately. DANGER: All spills of this product should be treated as contaminated. Contaminated product may initiate a chemical reaction which may spontaneously ignite any combustible...
material present, resulting in a fire of great intensity. In case of a spill, separate all spilled product from packaging, debris and other material. Using a clean broom or shovel, place all spilled product into plastic bags, and place those bags into a clean, dry disposal container, properly marked and labeled. Disposal containers made of plastic or metal are recommended. Do not seal disposal containers tightly. Immediately remove all product in disposal containers to an isolated area outdoors. Place all damaged packaging material in a disposal container of water to assure decontamination (i.e. removal of all product) before disposal. Place all undamaged packaging in a clean, dry container properly marked and labeled. Call for disposal procedures.

SPILL RESIDUES:
Dispose of per guidelines under Section 12, WASTE DISPOSAL. This material may be neutralized for disposal; you are requested to contact at 800-6546-911 before beginning any such operation.

PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING 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.

SECTION 12 WASTE DISPOSAL
If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001.

If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly.

As a hazardous solid waste, it must be disposed of in accordance with local, state and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by treatment.

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS 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.

SECTION 13 ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT:
The components of this product are listed on the Toxic Substances Control Act inventory, or are exempt as an impurity.

SUPERFUND AMENDMENT AND REAUTHORIZATION ACT TITLE 3:
HAZARD CATEGORIES, PER 40 CFR 370.2:
HEALTH:
   Immediate (Acute)
PHYSICAL:
   Fire
   Reactivity
EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW, PER 40 CFR 355, APP.A
EXTREME HAZARDOUS SUBSTANCE - THRESHOLD PLANNING QUANTITY:
None Established
SUPPLIER NOTIFICATION REQUIREMENTS, PER 40 CFR 372.45:
None Established

SECTION 14 ADDITIONAL INFORMATION

REGULATED UNDER FIFRA, USDA & FDA

MSDS REVISION STATUS: Section 11 revised

SECTION 15 MAJOR REFERENCES


16. Amoore, John E. and Earl Hautala, Odor as an Aid to Chemical Safety: Odor Thresholds Compared with Threshold Limit Values and


Additional references are available upon request.

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