



**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: POOLIFE® AUTOFEED A300 TABLETS

EPA Registration Number: 1258-1233

1. PRODUCT AND COMPANY IDENTIFICATION

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

REVISION DATE: 02/28/2008
SUPERCEDES: 09/19/2007

MSDS Number: 000000004629
SYNONYMS: None
CHEMICAL FAMILY: Hypochlorite
DESCRIPTION / USE: Sanitizer and Oxidizer
FORMULA: NOT APPLICABLE/MIXTURE

2. HAZARDS IDENTIFICATION

OSHA Hazard
Classification:

Toxic by inhalation., Corrosive to eyes and skin, Lung toxin, Oxidizer

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 Approximately 1.4 mg/m3 (based on odor threshold of chlorine)

Irritation Threshold Approximately 13-22 mg/m3 (based on irritation threshold of chlorine)

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	1	
NFPA	3	0	1	OX



Immediate (Acute) Health Effects

Inhalation Toxicity:	HARMFUL IF PRODUCT IS INHALED IN HIGH CONCENTRATIONS. CAUSES BURNS TO RESPIRATORY TRACT. 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 10) 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.
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:	MODERATELY 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 or perforation. Significant exposure to this material can lead to serious health effects and/or death.
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:	No reproductive or developmental risk to humans is expected from exposure to this product.
Inhalation:	Repeated inhalation exposure may cause impairment of lung function and permanent lung damage.
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 is not known or reported to be a skin or respiratory sensitizer.
Chronic Target Organ Toxicity:	There are no known or reported effects from repeated exposure except those secondary to burns.
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>
CALCIUM HYPOCHLORITE	7778-54-3	60 - 80
SODIUM CHLORIDE	7647-14-5	10 - 20
CALCIUM CHLORATE	10137-74-3	0 - 5
CALCIUM CHLORIDE	10043-52-4	0 - 5
CALCIUM HYDROXIDE	1305-62-0	0 - 6
CALCIUM CARBONATE	471-34-1	0 - 4
Sodium Tripolyphosphate	13573-18-7	0.5 - 1.0
Water	7732-18-5	5.5 - 8.5

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): 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., Product is not known to be flammable, combustible or pyrophoric.

Flammable Properties

Flash Point: Not applicable
Autoignition Temperature: Not applicable
Extinguishing Media: Water only. Do not use dry extinguishers containing ammonium compounds.
Fire Fighting Instructions: Use water to cool containers exposed to fire. See Section 6 for protective equipment for fire fighting.
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.

Spill Mitigation Procedures

Air Release: Vapors may be suppressed by the use of 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 product 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 Release: Contact 1-800-654-6911 immediately. DANGER: All spills of this product should be treated as contaminated. Contaminated product may initiate a chemical reaction that 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.



Additional Spill Information :

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. 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. FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC: 1-800-424-9300 REPORTABLE QUANTITY: 10 lbs. (as calcium hypochlorite) per 40 CFR 302.4.

7. HANDLING AND STORAGE

Handling:	Avoid inhalation of dust and fumes. Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Remove contaminated clothing and wash before reuse.
Storage:	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.
Shelf Life Limitations:	Do not store product where the average daily temperature exceeds 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperatures. Store in a cool, dry and well ventilated area. Prolonged storage at elevated temperatures 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 Storage:	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. A chemical reaction with such substances can cause a fire of great intensity.
Do Not Store At temperatures Above:	Average daily temperature of 35° C / 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products.

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. A safety shower should be provided in the immediate work area.

Eye Protection: Use chemical goggles. Emergency eyewash should be provided in the immediate work area.

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

Exposure Limit Data

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>Name of Limit</u>	<u>Exposure</u>
CALCIUM HYPOCHLORITE	7778-54-3	ARCH-ROEG*	1 mg/m3 TWA
CALCIUM HYPOCHLORITE	7778-54-3	NIOSH-IDLH	37 - 48 mg/m3 based on IDLH concentration of chlorine
CALCIUM HYDROXIDE	1305-62-0	ZUS_ACGIH	5 mg/m3 TWA
CALCIUM HYDROXIDE	1305-62-0	ZUS_OSHAPO	5 mg/m3 TWA
CALCIUM HYDROXIDE	1305-62-0	ZUS_OSHAP1	15 mg/m3 TWATotal dust
CALCIUM HYDROXIDE	1305-62-0	ZUS_OSHAP1	5 mg/m3 TWArespirable dust fraction
CALCIUM CARBONATE	471-34-1	ZUS_ACGIH	10 mg/m3 TWA
CALCIUM CARBONATE	471-34-1	ZUS_OSHAP1	15 mg/m3 TWATotal dust
CALCIUM CARBONATE	471-34-1	ZUS_OSHAP1	5 mg/m3 TWArespirable dust fraction

*ARCH-ROEG: Arch Recommended Occupational Exposure Guideline.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	solid
Form	Tablet
Color:	white
Odor:	Chlorine-like
Molecular Weight:	143.00
Specific Gravity :	Not applicable
pH :	10.4 - 10.8 (1% solution in neutral, distilled water) (@ 25 Deg. C)
Boiling Point:	Not applicable
Freezing Point:	Not applicable
Melting Point:	Not applicable



Density: 1.9000g/cc
Vapor Pressure: (@ 25 Deg. C) Not applicable
Vapor Density: Not applicable
Viscosity: Not applicable
Fat Solubility: No data
Solubility in Water: 18.00000 % (@ 25 Deg. C) Product also contains calcium hydroxide and calcium carbonate which will leave a residue.

Partition coefficient n-octanol/water: Not applicable
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: Product is not sensitive to mechanical shock or impact. Product is not sensitive to electrical static discharge. Product will not undergo hazardous polymerization. Product is an NFPA Class 3 oxidizer which can cause a severe increase in fire intensity. Not pyrophoric. Not an organic peroxide. If subjected to excessive temperatures, the product may undergo rapid decomposition, evolution of chlorine gas, and heat sufficient to ignite combustible substances. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter. Use copious amounts of water for fires involving this product.

Conditions to Avoid: Do not store next to heat source, in direct sunlight, or elevated storage temperature. Do not store where the daily average temperature exceeds 95 °F. Prevent ingress of humidity and moisture into container or package. Always close the lid.

Chemical Incompatibility: 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. Do not allow product to contact any foreign matter, including other water treatment products. Contamination or improper use may cause a fire of great intensity, explosion or the release of toxic gases. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter.

Hazardous Decomposition Products: Chlorine
Decomposition Temperature: 170 - 180 DEG°C - , 338 - 356 DEG°F-

11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

CALCIUM LD50 (65% calcium hypochlorite) 850 mg/kg Rat
HYPOCHLORITE



SODIUM CHLORIDE	LD50	= 3,000 mg/kg	Rat
CALCIUM CHLORIDE	LD50	= 1,000 mg/kg	Rat
CALCIUM HYDROXIDE	LD50	= 7,340 mg/kg	Rat
Sodium Tripolyphosphate	LD50	= 6,500 mg/kg	Rat

Dermal LD50 value:

CALCIUM HYPOCHLORITE	LD50 (65% calcium hypochlorite)	> 2,000 mg/kg	Rabbit
SODIUM CHLORIDE	LD50	> 10,000 mg/kg	Rabbit
CALCIUM CHLORIDE	LD50	= 2,630 mg/kg	Rat
CALCIUM HYDROXIDE		No data	
Sodium Tripolyphosphate		No data	

Inhalation LC50 value:

CALCIUM HYPOCHLORITE	Inhalation LC50 1 h (65% calcium hypochlorite), (Nose Only)	= 2.04 MG/L	Rat
CALCIUM HYPOCHLORITE	Inhalation LC50 4 h (65% calcium hypochlorite), (Nose Only)	= 0.51 MG/L	Rat
SODIUM CHLORIDE	Inhalation LC50 1 h	> 42 MG/L	Rat
CALCIUM CHLORIDE		No data	
CALCIUM HYDROXIDE		No data	
Sodium Tripolyphosphate	Inhalation LC50 4 h	> 0.39 MG/L	Rat

Product Animal Toxicity

Oral LD50 value: LD50 Approximately 800 mg/kg Rat

Dermal LD50 value: LD50 > 2,000 mg/kg Rabbit

Inhalation LC50 value: Inhalation LC50 1.00 h (Nose Only) > 2.04 MG/L Rat Inhalation LC50 4 h (Nose Only) > 0.51 MG/L Rat

Skin Irritation: DRY MATERIAL CAUSES MODERATE SKIN IRRITATION., WET MATERIAL CAUSES SKIN BURNS.

Eye Irritation: Corrosive to eyes.

Skin Sensitization: This material is not known or reported to be a skin or respiratory sensitizer.

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 except those secondary to burns.

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

CALCIUM CHLORIDE

Not known or reported to cause reproductive or developmental toxicity.

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.
CALCIUM CHLORIDE	This product was determined to be non-mutagenic in the Ames assay. It was also shown to be non-clastogenic in the chromosomal aberration test.
Sodium Tripolyphosphate	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. 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).
CALCIUM CHLORIDE	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 for: CALCIUM HYPOCHLORITE

Bluegill	-	(nominal, static). 96 h LC50 0.088 mg/l
Rainbow trout (<i>Salmo gairdneri</i>),	-	(nominal, static). 96 h LC50 0.16 mg/l
Daphnia magna,	-	(nominal, static). 48 h LC50 0.11 mg/l
Bobwhite quail	-	Dietary LC50 > 5,000 ppm
Mallard ducklings	-	Dietary LC50 > 5,000 ppm
Bobwhite quail	-	Oral LD50 3,474 mg/kg

Ecological Toxicity Values for: CALCIUM CHLORIDE

Bluegill	-	(nominal, static). 96 h LC50 = 10,650 mg/l
Mosquito fish	-	(nominal, static). 96 h LC50 = 13,400 mg/l
Fathead minnow (<i>Pimephales promelas</i>),	-	(nominal, static). 96 h LC50 = 4,630 mg/l
Daphnia magna,	-	(nominal, static). 48 h LC50= 2,770 mg/l
Ceriodaphnia dubia	-	(nominal, static). 48 h LC50= 1,830 mg/l
Nitzschia linearis (diatom)	-	(nominal, static). 5 day LC50 = 3,130 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 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.

Disposal Methods : As a hazardous 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): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE 5.1 III
Water (IMDG): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, 5.1 III

Flash Point: Not applicable
Air (IATA): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, 5.1 III
Emergency Response Guide Number: ERG # 140

Transportation Notes: Under specific circumstances, this product can ship under two transport exceptions, Limited Quantity or Consumer Commodity. See Bill of Lading for proper shipping description.
REPORTABLE QUANTITY: 10 lbs. (Per 49 CFR 172.101, Appendix)

EMS: F-H, S-Q

15. REGULATORY INFORMATION

UNITED STATES:

Toxic Substances Control Act (TSCA): This is an EPA registered pesticide.
EPA Pesticide Registration Number: 1258-1233

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

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 CALCIUM HYPOCHLORITE
Value: 10lbs

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:

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE
1305-62-0	CALCIUM HYDROXIDE
7778-54-3	CALCIUM HYPOCHLORITE

ZUSPA_RTK

US. Commonwealth of Pennsylvania - Department of Labor and Industry; Pennsylvania Code Title 34,
Labor and Industry Chapter 323
1990-01-01
CHLORIC ACID, CALCIUM SALT
hazardous substance

US. Commonwealth of Pennsylvania - Department of Labor and Industry; Pennsylvania Code Title 34,
Labor and Industry Chapter 323
1990-01-01
CALCIUM HYDROXIDE (CA(OH)2)



hazardous substance

US. Commonwealth of Pennsylvania - Department of Labor and Industry; Pennsylvania Code Title 34,
Labor and Industry Chapter 323

1990-01-01

HYPOCHLOROUS ACID, CALCIUM SALT

environmental hazard, hazardous substance

New Jersey:

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE
1305-62-0	CALCIUM HYDROXIDE
7778-54-3	CALCIUM HYPOCHLORITE

ZUSNJ_RTK

US. New Jersey Department of Environmental Protection -; Bureau of Hazardous Substances New Jersey
Right to Know Law, Hazardous Substance List [P.L. 1983, C. 315, NJSA 34:5A-1 et seq]

1989-12-01

CALCIUM CHLORATE

hazardous substance

US. New Jersey Department of Environmental Protection -; Bureau of Hazardous Substances New Jersey
Right to Know Law, Hazardous Substance List [P.L. 1983, C. 315, NJSA 34:5A-1 et seq]

1989-12-01

CALCIUM HYDROXIDE

hazardous substance

US. New Jersey Department of Environmental Protection -; Bureau of Hazardous Substances New Jersey
Right to Know Law, Hazardous Substance List [P.L. 1983, C. 315, NJSA 34:5A-1 et seq]

1989-12-01

CALCIUM HYPOCHLORITE

special health hazard substance, special health hazard, reactive - second degree

Massachusetts:

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE
1305-62-0	CALCIUM HYDROXIDE
7778-54-3	CALCIUM HYPOCHLORITE

ZUSMA_RTK

US. The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-know
law, The Massachusetts Substance List, 105 CMR 670.000

1991-07-01

CALCIUM CHLORATE

massachusetts hazardous substance

US. The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-know
law, The Massachusetts Substance List, 105 CMR 670.000

1991-07-01

CALCIUM HYDROXIDE

massachusetts hazardous substance

US. The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-know

POOLIFE® AUTOFEED A300 TABLETS

REVISION DATE : 02/28/2008



**Arch
Chemicals,
Inc.**

**MATERIAL SAFETY
DATA SHEET**

law, The Massachusetts Substance List, 105 CMR 670.000
1991-07-01
CALCIUM HYPOCHLORITE
massachusetts hazardous substance

California Proposition 65: CAS #	COMPONENT NAME
----------------------------------	----------------

ZUSCA_P65

None established

WHMIS Hazard Classification:

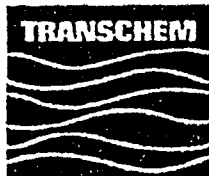
Canada. Canada Hazardous Products Act SOR/88-64
1988-01-20
Concentration by Weight: 1 percent by weight
302
CALCIUM HYDROXIDE

16. OTHER INFORMATION

MSDS REVISION STATUS : Revised to meet the ANSI standard of 16 sections
SECTIONS REVISED: 7, 14, 10
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. .

MATERIAL SAFETY DATA SHEET : HYDROCHLORIC ACID



5354 East 1st Street • P.O. Box 951 • Katy, Texas 77492 • 281/391-9133 • Fax 281/391-8537
1259 Safe Energy Dr. • Port Allen, Louisiana 70767 • 225/389-9133 Fax 225/389-9141

Date: 6/29/93
Reviewed/Revised: 12/31/98

SECTION 1 NAME & HAZARD SUMMARY

Material name: HYDROCHLORIC ACID

Common names: HCL, Hydrogen chloride, Muriatic acid

Hazard Summary (OSHA Hazard Communication Standard 29CFR1910.1200)

Physical hazards: None

Health hazards: Inhalation (TLV), Corrosive (skin, eye, respiratory passages), harmful (lung injury).

Read the entire MSDS for a more thorough evaluation of the hazards

SECTION 2 INGREDIENTS

CHEMICAL	CAS#	%	TLV(ACGIH)	PEL(OSHA)
Hydrogen chloride	7647-01-0	32.0 to 36.7	5ppm, Ceiling	5ppm, Ceiling
Water	Not listed	68.0 to 69.3	Not listed	Not listed

Ingredients not precisely identified are proprietary or non-hazardous. All ingredients appear on the EPA TSCA inventory. Values are not product specifications. ca = approximately, > = greater than, < = less than.

SECTION 3 PHYSICAL DATA

Boiling point: ca 230°F, 110°C

Vapor density (air = 1): 1.2

Solubility in water: Complete (in all proportions)

% Volatile by volume: 100

Appearance and odor: Clear, colorless, or slightly yellow, fuming liquid with sharp, irritating odor.

Vapor pressure (mmHg at 70°F): 25.8

Specific gravity: 1.1-1.2

pH: < 1

SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash point (and method): Does not flash.

Autoignition temperature: No data

Flammable limits (STP): Not applicable

LEL: None

UEL: None

Extinguishing media: Not applicable. Use media suitable for surrounding fire.

Special fire fighting protective equipment: Self-contained breathing apparatus with full face piece and protective clothing if involved in a fire of other materials.

Unusual fire and explosion hazards: Reacts with many metals to produce flammable hydrogen gas.

SECTION 5 REACTIVITY DATA

Stability: Stable under normal conditions.

Incompatibility (materials to avoid): Alkaline materials. Reacts with many metals to produce flammable hydrogen gas.

Hazardous decomposition products: Hydrogen.

Hazardous polymerization: Will not occur.

SECTION 6 HUMAN HEALTH HAZARD ASSESSMENT

General: The health hazard assessment is based on an evaluation of the chemical composition together with information from a search of the scientific literature and other commercial sources.

Carcinogenicity:

NTP: No

IARC: No

OSHA reg: No

Oral ingestion: Harmful and may be fatal. Causes severe irritation of the mouth, pharynx, esophagus, and stomach with consequent pain, nausea, and vomiting.

Eye contact: Liquid and vapor may cause severe burns to eyes.

Skin contact: Liquid and vapor may cause severe burns to exposed skin.

Skin absorption: Not a systemic poison. Skin absorption is not likely to occur.

MATERIAL SAFETY DATA SHEET : HYDROCHLORIC ACID

Inhalation: Warning properties are good. Inhalation of vapors may cause coughing and difficult breathing, resulting in inflammation, ulceration of nose, ulceration of throat.

Effects of overexposure: Inhalation of vapors may cause pulmonary edema, circulatory system collapse, damage to upper respiratory system. Inhalation of vapors may cause coughing and difficulty in breathing. Liquid may cause severe burns to eyes and skin. Ingestion is harmful and may be fatal. Will cause severe burns to mouth and stomach.

First aid procedures: CALL A PHYSICIAN !

Eyes: Immediately flush with plenty of water for at least 15 minutes and have eyes examined and treated by medical personnel.

Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and footwear. If redness, itching or a burning sensation develops, get medical attention.

Ingestion: DO NOT induce vomiting; if conscious, give water, milk, or milk of magnesia. (Never give anything by mouth to an unconscious person).

Inhalation: Remove victim to fresh air. If not breathing, clear airway and start mouth-to-mouth artificial respiration. If breathing is difficult give oxygen and get medical attention. If a cough or other respiratory symptoms develop, consult medical personnel.

Note to physician: Mucosal injury following ingestion of this potentially corrosive material may contraindicate the induction of vomiting in the treatment of possible intoxication. Similarly, if gastric lavage is performed, intubation should be done with great care. In cases of severe esophageal chemical corrosion, the use of therapeutic doses of steroids should be considered. General supportive measures with scrupulous monitoring of gas exchange, acid-base balance, electrolytes, and fluid intake are also of high importance. Pre-existing lung disease may be aggravated by exposure.

SECTION 7 SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: Wear skin, eye, and respiratory protection during clean-up. Stop leak if you can do without risk. Contain spill. Keep out of sewers and drains. Soak up and neutralize material with absorbent such as sodium bicarbonate, soda ash or lime. With clean shovel, carefully place material into clean, dry container and cover; remove from area. Wash residue from spill area with water and flush to a sewer serviced by a wastewater treatment facility. For transportation spill, call Chemtrec (Chemical Transportation Emergency Center), (800)424-9300.

Disposal method: Because its pH is 2 or below, discarded material is a hazardous waste. Dispose of in a facility permitted for hazardous waste.

EPA Hazardous Waste Number: D002 (CORROSIVE WASTE)

Container disposal: Empty container retains hazardous residue. Observe all hazard precautions. Do not distribute, make available, furnish or reuse empty container except for storage and shipment of original product. Remove hazardous residue and puncture or otherwise destroy empty container before disposal.

SECTION 8 SPECIAL PROTECTION INFORMATION

TLV or suggested control value: ACGIH TLV and OSHA PEL for hydrogen chloride is 5 ppm ceiling.

Ventilation: Use local exhaust to keep exposures to a minimum.

Respiratory protection (specify type): If needed, used MSHA/NIOSH respirator approved for acid gases.

Protective clothing: Take all precautions to avoid skin contact. Outside clothing of acid resistant fabrics are recommended. Rubber gloves and boots (rubbers over leather), aprons and arm covers should be worn for protection against accidental contact. Additional protection, such as full body suit, may be required depending on conditions.

Eye protection: Chemical tight goggles; full faceshield in addition if splashing is possible.

Other protective equipment: Safety shower and eyewash station in work area.

SECTION 9 SPECIAL PRECAUTIONS OR OTHER COMMENTS

Precautions to be taken in handling or storing: Prevent eye and skin contact. Observe TLV/PEL limitations. Avoid breathing vapors or aerosols.

SECTION 10 REGULATORY INFORMATION

TSCA (Toxic Substance Control Act) Regulations, 40CFR 710: All ingredients are on the TSCA Section 8(b) inventory.

CERCLA and SARA Regulations, 40CFR 355, 370, and 372: This product contains the following chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR 372:

Chemical	CAS #	%
Hydrochloric acid	7647-01-0	ca30

State Regulations: California Proposition 65: No warnings are necessary.

The information herein is given in good faith but no warranty, expressed or implied, is made.

Emergency Contact: Chemtrec 1/800/424-9300



MATERIAL SAFETY DATA SHEET

Robarb Robacide 60

1. Product And Company Identification

Supplier

Robarb
1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004 United States

Telephone Number: (770)521-5999

FAX Number: (770)521-5959

Web Site: www.poolspacare.com

Manufacturer

Advantis Technologies, Inc.
1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004 United States

Telephone Number: (770) 521-5999

FAX Number: (770) 521-5959

Web Site: www.poolspacare.com

Supplier Emergency Contacts & Phone Number

CHEMTREC - DAY OR NIGHT: (800) 424-9300

Manufacturer Emergency Contacts & Phone Number

CHEMTREC - DAY OR NIGHT: (800) 424-9300

Issue Date: 02/13/2006

Product Name: Robarb Robacide 60

Chemical Name: Poly(oxyethylene(Dimethyliminio)Ethylene(Dimethyliminio)Ethylene Dichloride)

CAS Number: Not Established

Chemical Family: Polymeric Quaternary Ammonium Compound

MSDS Number: 4

2. Composition/Information On Ingredients

Ingredient Name	CAS Number	Percent Of Total Weight
Poly{oxyethylene(dimethyliminio)Ethylene(dimethyliminio)ethylene dichloride}	31512-74-0	

Ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200. Materials determined to be health hazards are listed if they comprise 1% or more of the composition. Materials identified as carcinogens are listed if they comprise 0.1% or more of the composition. Information on proprietary materials is available in 29CFR 1910.1200(i)(1).

3. Hazards Identification

Primary Routes(s) Of Entry

Skin Contact, Eye Contact, Inhalation

Eye Hazards

Slightly hazardous in case of eye contact (irritant).

Skin Hazards

Slightly hazardous in case of skin contact (irritant). Non-sensitizer for skin. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Ingestion Hazards

Ingestion is not expected to be a primary route of exposure.

Inhalation Hazards

Slightly hazardous in case of inhalation. Effects will depend on concentration and length of time of exposure.

Subchronic (Target Organ Effects)

May cause damage to the following organs: upper respiratory tract, skin, eyes.

MATERIAL SAFETY DATA SHEET

Robarb Robacide 60

3. Hazards Identification - Continued

Chronic/Carcinogenicity Effects

Not tested by the manufacturer. Not shown as a carcinogen by OSHA, IARC, or NTP. A two year rat carcinogenicity study showed a slight increase in c-cell adenomas in female rats. Studies with male rats and male and female mice did not show any evidence of carcinogenic response. This product is not considered a carcinogen.

Signs And Symptoms

Irritation of Eyes and Respiratory Passages

Conditions Aggravated By Exposure

None Known

First Aid (Pictograms)



4. First Aid Measures

Eye

Flush immediately with copious amounts of tap water or normal saline (minimum of 15 minutes). Take exposed individual to a health care professional, preferably an ophthalmologist, for further evaluation.

Skin

Wash exposed area with plenty of soap and water. Repeat washing. Remove contaminated clothing and wash thoroughly before reuse. If irritation persists consult a health professional.

Ingestion

DO NOT INDUCE VOMITING. Rinse with copious amounts of water or milk, first. Irrigate the esophagus and dilute stomach contents by slowly giving one to two glasses of water or milk. Avoid giving alcohol or alcohol related products. In cases where the individual is semi-comatose, comatose, or is convulsing, DO NOT GIVE FLUIDS BY MOUTH. In case of intentional ingestion of the product, seek medical assistance immediately; take individual to nearest medical facility.

Inhalation

If exposure by inhalation is suspected, immediately move exposed individual to fresh air. If individual experiences nausea, headache, dizziness, has difficulty breathing or is cyanotic, seek a health care professional immediately.

Note To Physician

No Specific Antidote is known. Treat Symptoms.

Evaluate Principal Route of Entry, Seek appropriate medical attention. Never give anything by mouth to an unconscious person.

Fire Fighting (Pictograms)



5. Fire Fighting Measures

Flash Point: >212 °F

Flash Point Method: Closed Cup

Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

MATERIAL SAFETY DATA SHEET

Robarb Robacide 60

6. Accidental Release Measures

Contain and/or absorb spill with inert material (e.g. sand, vermiculite). Avoid release to the environment. Do not flush to sewer.

Handling & Storage (Pictograms)



7. Handling And Storage

Handling Precautions

Avoid contact with eyes. Wash thoroughly after handling. Wash hands before eating, drinking, or smoking.

Storage Precautions

Store in a cool dry place. Keep out of reach of children.

Work/Hygienic Practices

Use safe chemical handling procedures suitable for the hazards presented by this material. Do not contaminate Water Food or Feed by storage or cleaning equipment.

Protective Clothing (Pictograms)



8. Exposure Controls/Personal Protection

Engineering Controls

Local exhaust acceptable. Special exhaust not required

Eye/Face Protection

Safety glasses with side shields or goggles recommended.

Skin Protection

Chemical-resistant gloves.

Respiratory Protection

General room ventilation is normally adequate.

9. Physical And Chemical Properties

Appearance

Clear, pale yellow liquid

Odor

Mild

Chemical Type: Mixture

Physical State: Liquid

Melting Point: 32 °F <0 °C

Boiling Point: 212 °F >100 °C

Specific Gravity: 1.15 g/cm³

Percent Volatiles: Not established

Vapor Pressure: Not established

pH Factor: 6-8

MATERIAL SAFETY DATA SHEET

Robarb Robacide 60

9. Physical And Chemical Properties - Continued

Odor - Continued

Solubility: Easily soluble in cold/hot water

Viscosity: Kinetic: 125cS

Evaporation Rate: Not established

10. Stability And Reactivity

Stability: Stable under normal conditions of use and storage

Incompatible Materials

Anionic Polymers

Hazardous Decomposition Products

Carbon monoxide may be formed upon burning.

11. Toxicological Information

Skin Effects

Dermal LD50 = >2000 mg/kg Rabbit

Acute Oral Effects

Oral LD50 = 1951 mg/kg Male rat

Oral LD50 = 2587 mg/kg Female rat

Acute Inhalation Effects

Inhalation LD50 = 2.9ppm (4 hours) Rat

12. Ecological Information

Acute Toxicity - Fish And Invertebrates

LC50 = 0.37 mg/L 48 hours Invertebrate

LC50 = 0.26 mg/L 96 hours Fathead Minnow

LC50 = 0.21 mg/L 96 hours Bluegill sunfish

LC50 = 0.047 mg/L 96 hours Rainbow Trout

LC50 = >600 mg/L 96 hours Sheepshead minnow

LC50 = 13 mg/L 96 hours Mysid shrimp

13. Disposal Considerations

Refer to applicable local, state and federal regulations as well as industry standards.

14. Transport Information

Proper Shipping Name

Environmentally Hazardous Substance, Liquid, n.o.s.

(Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylene dichloride]), Marine Pollutant

Hazard Class

9, PGIII

DOT Identification Number

UN3082

Additional Shipping Paper Description

North American Emergency Response Guide No. 171

Not regulated by DOT for ground or air shipments [see exception for marine pollutants 49CFR171.4(c)].

MATERIAL SAFETY DATA SHEET

Robarb Robacide 60

15. Regulatory Information

State Regulations

California Proposition 65: This product had been reviewed for Prop 65 components and the following applies:
Warning: This product may contain substance(s) which are known to the State of California to cause cancer or reproductive harm. (Contents may contain trace levels of (<10 ppm) of Dichloroethyl ether, 1,4-Dioxane and (<20 ppb) N-nitrosodimethylamine). Trace contaminants from Poly[oxyethylene(diamethylimino)ethylene(diethylimino)ethylene dichloride)

NFPA



HMIS

HEALTH	1
FLAMMABILITY	1
REACTIVITY	1
PERSONAL PROTECTION	B

16. Other Information

Revision/Preparer Information

MSDS Preparer: JHW

Reference Documentation

Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purposes(s).

Robarb

Printed Using MSDS Generator™ 2000



MATERIAL SAFETY DATA SHEET

Robarb Back Wash

1. Product And Company Identification

Supplier

Robarb
1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004 United States

Telephone Number: (770)521-5999

FAX Number: (770)521-5959

Web Site: www.poolspacare.com

Manufacturer

Advantis Technologies, Inc.
1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004 United States

Telephone Number: (770) 521-5999

FAX Number: (770) 521-5959

Web Site: www.poolspacare.com

Supplier Emergency Contacts & Phone Number

CHEMTREC - DAY OR NIGHT: (800) 424-9300

Manufacturer Emergency Contacts & Phone Number

CHEMTREC - DAY OR NIGHT: (800) 424-9300

Issue Date: 02/10/2006

Product Name: Robarb Back Wash

Chemical Name: Proprietary Mixture

CAS Number: Not Established

Chemical Family: Filter Cleaner

Chemical Formula: Proprietary Mixture

MSDS Number: 38

2. Composition/Information On Ingredients

Ingredient Name	CAS Number		Percent Of Total Weight
1-Hydroxyethane-1,1-diphosphoric Acid	2809-21-4		
2-BUTOXYETHANOL	111-76-2		
CITRICACID	77-92-9		
Poly(oxy-1,2-ethanediyl), alpha-(nonlyphenyl-omega-hydroxy-	9016-45-9		

Ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200. Materials determined to be health hazards are listed if they comprise 1% or more of the composition. Materials identified as carcinogens are listed if they comprise 0.1% or more of the composition. Information on proprietary materials is available in 29CFR 1910.1200(i)(1).

3. Hazards Identification

Primary Routes(s) Of Entry

Skin Contact

Eye Hazards

May cause irreversible eye damage.

Skin Hazards

May cause permanent skin damage.

Ingestion Hazards

If ingested, get immediate medical attention

Inhalation Hazards

May be severely irritating to respiratory tract.

MATERIAL SAFETY DATA SHEET

Robarb Back Wash

3. Hazards Identification - Continued

Inhalation Hazards - Continued

Signs And Symptoms

Irritation of Eyes and Respiratory Passages

First Aid (Pictograms)



4. First Aid Measures

Eye

In case of contact, hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin

In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Get medical attention immediately if irritation (redness, rash, blistering) develops and persists.

Ingestion

Give Milk, Egg Whites or Baking Soda Immediately. Drink large amounts of water. Contact a physician or poison control.

Inhalation

If inhaled, remove to fresh air. Consult a physician. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

Fire Fighting (Pictograms)



5. Fire Fighting Measures

Flash Point: n/a °F

Fire And Explosion Hazards

Fumes released under fire conditions are toxic.

Extinguishing Media

In case of fire, use water spray (fog) foam, dry chemical, or CO2.

Fire Fighting Instructions

Firefighters should wear self-contained breathing apparatus and full protective gear.

6. Accidental Release Measures

Clean up spill immediately. Contain and/or absorb spill with inert material (e.g. sand, vermiculite). Flush spill area with water. Use appropriate containers to avoid environmental contamination.

MATERIAL SAFETY DATA SHEET

Robarb Back Wash

Handling & Storage (Pictograms)



7. Handling And Storage

Handling And Storage Precautions

Keep out of reach of children. Store material in a cool and dry place.

Work/Hygienic Practices

Use safe chemical handling procedures suitable for the hazards presented by this material.

Protective Clothing (Pictograms)



8. Exposure Controls/Personal Protection

Engineering Controls

Local exhaust acceptable. Special exhaust not required

Eye/Face Protection

Safety glasses with side shields or goggles.

Skin Protection

Chemical-resistant gloves.

Respiratory Protection

General room ventilation is normally adequate.

Ingredient(s) - Exposure Limits

2-BUTOXYETHANOL

ACGIH TLV-TWA 20 ppm (Skin)

OSHA PEL-TWA 50 ppm (Skin)

9. Physical And Chemical Properties

Appearance

Dark blue liquid

Odor

Detergent

Chemical Type: Mixture

Physical State: Liquid

Melting Point: n/a °F

Boiling Point: 215 °F

Specific Gravity: 1.138

Molecular Weight: NOT DETERMINED

Percent Volatiles: NOT DETERMINED

Vapor Pressure: 17

Vapor Density: 0.6

pH Factor: 1-3

Solubility: SOLUBLE IN WATER

Evaporation Rate: <1

Corrosive

MATERIAL SAFETY DATA SHEET

Robarb Back Wash

10. Stability And Reactivity

Stability: STABLE

Hazardous Polymerization: WILL NOT OCCUR

Conditions To Avoid (Stability)

Avoid contact with strong alkalis

Incompatible Materials

Alkalis

Hazardous Decomposition Products

Oxides of carbon, nitrogen, aldehydes, ketones

11. Toxicological Information

Acute Studies

Concentrated product may be corrosive to skin and mucous membranes.

12. Ecological Information

No Data Available...

13. Disposal Considerations

Refer to applicable local, state and federal regulations as well as industry standards.

14. Transport Information

Proper Shipping Name

CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Hydroxyethanediphosphonic Acid)

Hazard Class

8, PGIII (<=4L Consumer Commodity ORM-D)

DOT Identification Number

UN3265

Additional Shipping Paper Description

DOT (Pictograms)



15. Regulatory Information

Ingredient(s) - U.S. Regulatory Information

2-BUTOXYETHANOL

SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

SARA - Acute Health Hazard

SARA - Chronic Health Hazard

SARA - Fire Hazard

Ingredient(s) - State Regulations

2-BUTOXYETHANOL

New Jersey - Workplace Hazard

New Jersey - Environmental Hazard

Pennsylvania - Workplace Hazard

Massachusetts - Hazardous Substance

New York City - Hazardous Substance


M A T E R I A L S A F E T Y D A T A S H E E T

Robarb Back Wash

MATERIAL SAFETY DATA SHEET

Robarb Back Wash

15. Regulatory Information

NFPA	HMIS
	HEALTH <input type="text" value="3"/>
	FLAMMABILITY <input type="text" value="1"/>
	REACTIVITY <input type="text" value="1"/>
	PERSONAL PROTECTION <input type="text" value="D"/>

16. Other Information

Revision/Preparer Information

MSDS Preparer: JHW

This MSDS Superceeds A Previous MSDS Dated: 07/24/2000

Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purposes(s).

Robarb

Printed Using MSDS Generator™ 2000

Material Safety Data Sheet

Data Information as Required by OSHA Regulations

Product:

BIO-DEX

PROTECT-ALL SUPREME

**Swimming Pool, Spa and Fountain
Treatment for Hardwater Problems, Stain and Scale**



BIO-DEX LABORATORIES

**501 WEST LONE CACTUS DR.
PHOENIX, AZ 85027**



MATERIAL SAFETY DATA SHEET

Product:
PROTECT-ALL SUPREME
Swimming Pool, Spa and Fountain
Treatment for Hardwater Problems, Stain and Scale

Section 1.	CHEMICAL PRODUCT AND COMPANY IDENTIFICATION
-------------------	--

Product Name:
BIO-DEX PROTECT – ALL SUPREME
TREATMENT

General Use:
Swimming Pool Water

NFPA 704m/HMLS RATING:
Health: 2
Flammability: 0
Reactivity: 0

Company Identification:
Bio-Dex Laboratories
501 W Lone Cactus Dr
Phoenix, AZ 85027
(623) 582-2400 Fax: (623) 582-2405
Medical Emergency – 24 Hr:
(602) 253-3334
Samaritan Regional Poison
Center

Chemical Names:
Citric Acid – Corrosive
Bio-Degradable Surfactant
Color
Water

CARCINOGEN:
OSHA - NO
L.A.R.C. – NO
NTB - NO

HAZARD RATING SCALE:
0: Insignificant
1: Slight
2: Moderate
3: High
4: Extreme

Section 2.	SUMMARY OF HAZARDS
-------------------	---------------------------

As with all chemicals, use with safety in mind.

Inhalation: Not an expected hazard.

Ingestion: Do not take internally. May cause sore throat, abdominal pain and nausea.

Skin Contact: Wear protective rubber gloves and protective eye goggles when using this product.

Eye Contact: May cause redness, pain blurred vision and possible eye damage.

Chronic Exposure: No information found.

Aggravation of pre-existing skin disorders or eye problems, or impaired respiratory function may be more susceptible to the effects of this substance.



MATERIAL SAFETY DATA SHEET

Product:

PROTECT-ALL SUPREME
Swimming Pool, Spa and Fountain
Treatment for Hardwater Problems, Stain and Scale

Section 3. PHYSICAL PROPERTIES

Appearance:

Clear solution – red color added for aesthetic value.

Odor: Characteristic odor.

Solubility in Water: Complete

Flash Point: N/D

ph:<2 Viscosity: Slightly viscous.

Freezing Point: 32 deg. F

Note: These physical data are typical values based on material tested and may vary from sample to sample, and should not be construed as a guaranteed analysis of any specific lot or as a specification.

Section 4. FIRE AND EXPLOSION HAZARDS
--

The material does not meet the parameters for flammability, however it will burn in the presence of a strong ignition source after the water is removed.

Extinguishing Media: Water, carbon dioxide, foam, powder extinguisher.

Special Firefighting Procedures: Fire Fighters should wear full protective clothing and NIOSH approved respirator.

Materials to Avoid: Avoid contact with concentrated caustic. Also avoid contact with strong oxidizing agents.

Hazardous Polymerization: Does not occur.

Section 5. EMERGENCY FIRST AID PROCEDURES
--

Inhalation: If inhaled, remove to fresh air.

Eye Contact: Flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally, call a physician immediately.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes.



Product:

PROTECT-ALL SUPREME
Swimming Pool, Spa and Fountain
Treatment for Hardwater Problems, Stain and Scale

Section 6. ENVIRONMENTAL PROTECTION
--

Emergency Spill and Leak Information:

Protect-All Supreme may be absorbed with clay, sawdust, or other type of absorbent material. Place contaminated absorbent material in a container. Dispose of in accordance with all applicable local, state and federal regulations. To the best of Bio-Dex's knowledge, this product is not regulated by CERCLA/RCRA as a hazardous waste or material. However, this product has not been tested for the toxicity characteristic via the Toxicity Characteristic Leaching Procedure.

TSCA: Invertebrates: This product is practically non-toxic.

DOT DESCRIPTION/PROPER SHIPPING NAME:

Not regulated for transportation.

Address Contact Information:

MSDS Prepared by : OMNI RESEARCH CORPORATION
DBA: BIO-DEX LABORATORIES

**THIS MATERIAL SAFETY DATA SHEET CONTAINS AT LEAST THE INFORMATION
REQUIRED BY THE FEDERAL OSHA HAZARD COMMUNICATION RULE 29 CFR 1910
12300 (G) (2).**

The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and to develop work practice procedures for a safe environment.

The information contained herein is, to the best of our knowledge and belief, accurate. However, because the conditions of handling and use are beyond our control, we make not guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all federal, state, and local laws and regulations.

However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, Bio-Dex Laboratories makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Also, additional information may be necessary or helpful for specific conditions and circumstances of use. It is the user's responsibility to determine the suitability of this product and to evaluate risks prior to use, and then to exercise appropriate precautions for protection of employees and others.

MATERIAL SAFETY DATA SHEET

MSDS

Regal Brom-A-Gard Tablets 1" For Spas & Hot Tubs

Date-Issued: 12/10/2001
MSDS Ref. No: SREG32310
Date-Revised: 12/10/2001
Revision No: New MSDS

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Regal Brom-A-Gard Tablets 1" For Spas & Hot Tubs
GENERAL USE: Spa & hot tub sanitizer
CHEMICAL FAMILY: Halogenated hydantoin

MANUFACTURER

Alliance Packaging, Inc.
109 Northpark Blvd., Suite 400
Covington, LA 70433-5001
Customer SERVICE: (800) 959-7946

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (Transportation) (800) 424-9300
Medical (800) 255-3924

COMMENTS: EPA Registration Number: 5185-420-42177

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS#</u>	<u>Wt.%</u>
1-bromo-3-chloro-5,5-dimethylhydantoin	16079-88-2	96

COMMENTS: Available Bromine: 63.5% / Available Chlorine: 28.2%

3. HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

PHYSICAL APPEARANCE: White tablets with halogen odor.

IMMEDIATE CONCERNS: DANGER: Highly Corrosive: Causes skin and eye damage. May be fatal if swallowed. Do not get in eyes, on skin, or on clothing. Wear goggles or safety glasses and rubber gloves when handling this product. Irritating to nose and throat. Avoid breathing dust and fumes. Remove contaminated clothing and wash before reuse.

POTENTIAL HEALTH EFFECTS

EYES: DANGER: Highly Corrosive. Causes eye damage. Do not get in eyes.

SKIN: DANGER: Highly Corrosive. Causes skin damage. Do not get on skin.

INGESTION: May be fatal if swallowed.

INHALATION: Irritating to nose and throat. Avoid breathing dust or fumes.

MEDICAL CONDITIONS AGGRAVATED: Existing dermatitis may be aggravated by exposure.

ROUTES OF ENTRY: Skin Contact, Inhalation, Ingestion, Eye Contact.

COMMENTS HEALTH: There are no known chronic hazards.

4. FIRST AID MEASURES

EYES: If contact with eyes occurs: Immediately flush with cold water for at least 15 minutes. Then get immediate medical attention.

SKIN: If contact with skin: Brush off excess chemical and flush skin with cold water for at least 15 minutes. If irritation persists, get medical attention.

INGESTION: If swallowed: Drink large amounts of water. Do not induce vomiting. Avoid alcohol. NEVER GIVE ANYTHING BY

MOUTH TO AN UNCONSCIOUS PERSON. Call a physician or poison control center immediately.

INHALATION: If inhaled: Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If not breathing, give artificial respiration. Call a physician immediately.

NOTES TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE FIGHTING MEASURES

GENERAL HAZARD: In large fires fueled by other materials, this product may smolder for prolonged periods emitting a dense black smoke.

Any spilled material should be considered contaminated. Neutralize to a non-oxidizing material for safe disposal. Material which appears undamaged except for being damp on the outside, should be opened and inspected immediately. If the material is damp, it should be neutralized to a non-oxidizing material for safe disposal.

EXTINGUISHING MEDIA: In case of fire or smoke, call the fire department. Do not attempt to extinguish the fire without a self-contained breathing apparatus (SCBA). Do not let the fire burn. Flood with copious amounts of water. DO NOT use ABC or other dry chemical extinguishers since there is the potential for a violent reaction.

EXPLOSION HAZARDS: A dust explosion severity determination was performed using the Hartmann Dust Explosibility Bomb designed at the U.S. Bureau of Mines. The product was determined not to be ignitable.

FIRE FIGHTING PROCEDURES: Fires fueled by other materials may release hydrogen bromide, bromine, hydrogen chloride or chlorine. Wear self-contained breathing apparatus. Ammonium phosphate (ABC) fire extinguishers should not be used.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES: STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Using appropriate protective clothing and safety equipment, contain spilled material. Do not add water to spilled material. Using clean dedicated equipment, sweep and scoop all spilled material, contaminated soil, and other contaminated material and place into clean dry containers for disposal. Do not use floor sweeping compounds to clean up spills. Do not close containers containing wet or damp material. They should be left open to disperse any hazardous gases that may form. Do not transport wet or damp material. Keep product out of sewers, watersheds and water systems. Do not contaminate water, food, or feed by storage, disposal or cleaning of equipment. Dispose of according to local, state and federal regulations.

7. HANDLING AND STORAGE

HANDLING: STRONG OXIDIZING AGENT: Do not mix with other chemicals. Mix only with water. Never add water to product. Always add product to large quantities of water. Use clean dry utensils. Do not add this product to any dispensing device containing remnants of any other product. Such use may cause a violent reaction leading to fire or explosion. Contamination with moisture, organic matter or other chemicals will start a chemical reaction and generate heat, hazardous gas, possible fire and explosion. In case of contamination or decomposition, do not reseal container. If possible, isolate container in open air or well ventilated area. Flood area with large volumes of water.

STORAGE: Keep this product in original tightly closed container when not in use. Store in a cool, dry, well ventilated area away from heat or open flame. Moisture may decompose this product and cause a violent reaction leading to fire and explosion. In case of decomposition, isolate container if possible and flood area with large amounts of water to dissolve all materials before discarding this container. Do not contaminate food or feed by storage or disposal. Do not reuse container, but place in trash collection. Rinse thoroughly before discarding in trash.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

1-bromo-3-chloro-5,5-dimethylhydantoin

OSHA TABLE COMMENTS:

1. N/E = Not Established

EXPOSURE LIMITS

	OSHA PEL		ACGIH TLV		SUPPLIER OEL	
	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
TWA	N/E ^[1]		N/E			

ENGINEERING CONTROLS: General room ventilation plus local exhaust should be used to minimize exposure to dust/vapors.

PERSONAL PROTECTIVE EQUIPMENT:

EYES AND FACE: Wear goggles or safety glasses with side shields when handling this product.

SKIN: Wear rubber gloves when handling this product. Avoid contact with skin.

RESPIRATORY: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

WORK HYGIENIC PRACTICES: Remove and wash contaminated clothing before reuse.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid

ODOR: Faint halogen odor.

APPEARANCE: Tablet

COLOR: White

pH: 4.5(0.1% solution in DI water)

VAPOR PRESSURE: Not Applicable

VAPOR DENSITY: Not Determined

BOILING POINT: Not Applicable

MELTING POINT: With Decomposition

THERMAL DECOMPOSITION: 145°C to 150°C

SOLUBILITY IN WATER: 0.15g/100g water

DENSITY: 60.1 lb/ft³

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: High temperature. Poor ventilation. Contamination. Moisture/high humidity.

STABILITY: This product is stable under normal conditions.

POLYMERIZATION: Hazardous polymerization will not occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen bromide, bromine, hydrogen chloride, chlorine.

INCOMPATIBLE MATERIALS: Avoid contact with water on concentrated material in the container. Avoid contact with easily oxidizable material; ammonia, urea, or similar nitrogen containing compounds; inorganic reducing compounds; floor sweeping compounds; calcium hypochlorite; other swimming pool/spa chemicals in their concentrated form; alkalis. Avoid contact with all other chemicals.

11. TOXICOLOGICAL INFORMATION

ACUTE

EYES: Toxicological studies indicate this product to be corrosive to eyes.

DERMAL LD₅₀: The dermal LD₅₀ is greater than 2.0 g/kg (rabbit). The primary skin irritation index is 6.1 and the product is considered corrosive to skin.

ORAL LD₅₀: 578 mg/kg (rat).

CARCINOGENICITY:

This product is not listed as a carcinogen by IARC.

This product is not listed as a carcinogen by NTP.

This product is not listed as a carcinogen by OSHA.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or other waters unless in accordance with the

requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Pesticide wastes are toxic. Improper disposal of excess pesticide or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance. Do not contaminate water, food, or feed by storage or disposal or cleaning of equipment. Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. Contact with incompatible materials could cause a reaction or fire.

EMPTY CONTAINER: Do not reuse container. Rinse thoroughly before discarding in trash.

14. TRANSPORT INFORMATION**DOT (DEPARTMENT OF TRANSPORTATION)**

PROPER SHIPPING NAME: Oxidizing Solid, N.O.S. (Bromo-chloro-dimethylhydantoin)

PRIMARY HAZARD CLASS/DIVISION: 5.1

UN/NA NUMBER: 1479

PACKING GROUP: II

15. REGULATORY INFORMATION**UNITED STATES**

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

313 REPORTABLE INGREDIENTS: This product or its components are not listed.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: This product or its components are not listed.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: This product or its components are not subject to export notification.

TSCA STATUS: This product or its components are listed on the TSCA Inventory.

OSHA HAZARD COMM. RULE: Product is hazardous by definition of the Hazardous Communication Standard.

CLEAN WATER ACT: Not Listed.

FIFRA (FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT): This product is a registered pesticide.

SDWA (SAFE DRINKING WATER ACT): Not listed.

CLEAN AIR ACT

40 CFR PART 68---RISK MANAGEMENT FOR CHEMICAL ACCIDENT RELEASE PREVENTION: Not listed.

This product or its components are not listed on any Proposition 65 lists of carcinogens or reproductive toxicants.

16. OTHER INFORMATION

PREPARED BY: Regulatory Affairs Department

REVISION SUMMARY New MSDS

HMIS RATING

HEALTH:		3
FIRE:		1
REACTIVITY:		1
PROTECTION:		B

NFPA RATING

HEALTH:	3
FIRE:	1
REACTIVITY:	1

Key

4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

MANUFACTURER DISCLAIMER: IMPORTANT: This information is given without a warranty or guarantee. No suggestions for use are intended or shall be construed as a recommendation to infringe any existing patents or violate any Federal, State or local laws. Safe handling and use is the responsibility of the customer. Read the label before using this product. This information is true and accurate to the best of our knowledge.



MATERIAL SAFETY DATA SHEET

GLB Bug Out

1. Product And Company Identification

Supplier

GLB

**1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004 United States**

Telephone Number: (770)521-5999

FAX Number: (770)521-5959

Web Site: www.poolspacare.com

Manufacturer

Advantis Technologies Inc.

**1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004 United States**

Telephone Number: (770) 521-5999

FAX Number: (770) 521-5959

Web Site: www.poolspacare.com

Supplier Emergency Contacts & Phone Number

CHEMTREC - DAY OR NIGHT: (800) 424-9300

Manufacturer Emergency Contacts & Phone Number

CHEMTREC - DAY OR NIGHT: (800) 424-9300

Issue Date: 04/18/2001

Product Name: GLB Bug Out

CAS Number: Not Established

Chemical Family: Surfactant

Chemical Formula: Proprietary

MSDS Number: 68

2. Composition/Information On Ingredients

Ingredient Name	CAS Number	Percent Of Total Weight
CAPROAMPHOCARBOXYPROPIONATE	68815-45-2	
CAPRYLOAMPHOCARBOXYPROPIONATE	68815-55-4	
METHANOL	67-56-1	

Ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200. Materials determined to be health hazards are listed if they comprise 1% or more of the composition. Materials identified as carcinogens are listed if they comprise 0.1% or more of the composition. Information on proprietary materials is available in 29CFR 1910.1200(i)(1).

3. Hazards Identification

Primary Routes(s) Of Entry

Eye Contact Skin Contact

Eye Hazards

May cause eye irritation.

Skin Hazards

May cause skin irritation.

Ingestion Hazards

Harmful if swallowed.

Inhalation Hazards

May cause respiratory tract irritation.

Signs And Symptoms

Irritant to eyes and skin

MATERIAL SAFETY DATA SHEET

GLB Bug Out

First Aid (Pictograms)



4. First Aid Measures

Eye

In case of contact, hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Consult Physician

Skin

Get medical attention immediately if irritation (redness, rash, blistering) develops and persists. Wash affected areas with soap and water.

Ingestion

If swallowed, induce vomiting immediately. Drink large amounts of water. Contact a physician or poison control.

Inhalation

If inhaled, remove to fresh air.

Fire Fighting (Pictograms)



5. Fire Fighting Measures

Flash Point: 143 °F

Fire And Explosion Hazards

Excess heat with prolonged evaporation can result in emission of toxic fumes. material can burn to give off oxides of carbon, nitrogen and toxic fumes of ammonia.

Extinguishing Media

In case of fire, use water fog, dry chemical, CO2, or "alcohol" foam.

Fire Fighting Instructions

Firefighters should wear self-contained breathing apparatus and full protective gear.

6. Accidental Release Measures

Contain and/or absorb spill with inert material (e.g. sand, vermiculite).

Handling & Storage (Pictograms)



7. Handling And Storage

Handling And Storage Precautions

Keep out of reach of children.

Handling Precautions

Avoid contact with skin and clothing.

MATERIAL SAFETY DATA SHEET

GLB Bug Out

7. Handling And Storage - Continued

Storage Precautions

Keep away from excessive heat. Keep out of reach of children.

Work/Hygienic Practices

Use safe chemical handling procedures suitable for the hazards presented by this material.

Protective Clothing (Pictograms)



8. Exposure Controls/Personal Protection

Engineering Controls

Local exhaust acceptable. Special exhaust not required

Eye/Face Protection

Safety glasses with side shields or goggles recommended.

Skin Protection

Chemical-resistant gloves.

Respiratory Protection

None normally required.

Ingredient(s) - Exposure Limits

METHANOL

ACGIH TLV-STEL 250 ppm (Skin)

ACGIH TLV-TWA 200 ppm (Skin)

OSHA PEL-TWA 200 ppm

9. Physical And Chemical Properties

Appearance

Straw Colored Liquid

Odor

Mild

Chemical Type: Mixture

Physical State: Liquid

Melting Point: n/a °F

Boiling Point: 212 °F

Specific Gravity: 1.08

Molecular Weight: Proprietary

Percent Volatiles: Negligible

Packing Density: Not Determined

Vapor Pressure: Not Determined

Vapor Density: >1

pH Factor: 8-10

Solubility: Soluble in water

Viscosity: Not Determined

Evaporation Rate: <1

MATERIAL SAFETY DATA SHEET

GLB Bug Out

10. Stability And Reactivity

Stability: Stable

Hazardous Polymerization: will not occur

Conditions To Avoid (Stability)

High temperatures.

Incompatible Materials

None known

Hazardous Decomposition Products

This material can burn to give off oxides of carbon, hydrogen and fumes of Ammonia.

11. Toxicological Information

Acute Oral Effects

Raw material LD50 rat 22,600 mg/kg

12. Ecological Information

No Data Available...

13. Disposal Considerations

Refer to applicable local, state and federal regulations as well as industry standards.

14. Transport Information

Proper Shipping Name

NOT REGULATED

Hazard Class

NOT REGULATED

DOT Identification Number

NONE

15. Regulatory Information

Ingredient(s) - U.S. Regulatory Information

METHANOL

SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

SARA - Acute Health Hazard

SARA - Chronic Health Hazard

SARA - Fire Hazard

Ingredient(s) - State Regulations

METHANOL

New Jersey - Workplace Hazard

New Jersey - Environmental Hazard

New Jersey - Special Hazard

Pennsylvania - Workplace Hazard

Massachusetts - Hazardous Substance

New York City - Hazardous Substance

Canadian Regulatory Information

Class D, Div 2b - Poisonous or Infectious Material: other toxic effects

MATERIAL SAFETY DATA SHEET

GLB Bug Out

WHMIS - Canada (Pictograms)



NFPA



HMIS

HEALTH	2
FLAMMABILITY	2
REACTIVITY	0
PERSONAL PROTECTION	E

16. Other Information

Revision/Preparer Information

MSDS Preparer: JHW3

This MSDS Supercedes A Previous MSDS Dated: 08/30/2000

Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purposes(s).

GLB

Printed Using MSDS Generator™ 2000

OREQ CORPORATION
42306 Remington Avenue Temecula CA 92590

ClearView®
MATERIAL SAFETY DATA SHEET

INFORMATION ON THIS FORM IS FURNISHED SOLELY FOR THE PURPOSE OF COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND SHALL NOT BE USED FOR ANY OTHER PURPOSE USE OR DISSEMINATION OF ALL OR ANY PART OF THIS INFORMATION FOR ANY OTHER PURPOSE MAY RESULT IN A VIOLATION OF LAW OR CONSTITUTE GROUNDS FOR LEGAL ACTION

SECTION I

MANUFACTURER'S NAME
ARCH CHEMICALS, INC.

EMERGENCY TELEPHONE
CHEMTREC 1-800-424-9300

TRADE NAME AND SYNONYMS
ClearView® INSTA-CHLOR

CHEMICAL NAME AND SYNONYMS
CALCIUM HYPOCHLORITE

CHEMICAL FAMILY
INORGANIC CHLORINE

FORMULA
Ca(OC1)₂

SECTION II – HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

COMPONENT

CALCIUM HYPOCHLORITE 68%
INERT 32%

HAZARD DATA - Oxidizer

(PEL OSHA PPM) –3 mg/Meter³(ceiling) as chlorine:
Manufacturer's internal exposure standard

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT
N/A

SPECIFIC GRAVITY (H20-1)
N/A

BULK DENSITY
.08 g/cc, loose

VAPOR PRESSURE (MM Hg.)
N/A

VAPOR DENSITY (AIR=1)
N/A

SOLUBILITY IN WATER
Approx. 18% @25 Deg. C

MELTING POINT
NOT ESTABLISHED

pH
@25 Deg. C 10.4-10.8 (1% solution)

APPEARANCE AND ODOR
WHITE POWDER WITH CHLORINE LIKE ODOR

EVAPORATION RATE
N/A

SECTION IV – FIRE AND EXPLOSION HAZARDS

FLASH POINT (METHOD USED)
NONE

FLAMMABLE LIMITS
N/A

EXTINGUISHING MEDIA – WATER ONLY! SMOTHERING IS INEFFECTIVE, PRODUCT SUPPLIES OWN OXYGEN

SPECIAL FIRE FIGHTING PROCEDURES – FIRE FIGHTERS MUST WEAR NIOSH/MSHA APPROVED PRESSURE DEMAND SELF CONTAINED BREATHING APPARATUS WITH FULL FACE PIECE FOR POSSIBLE EXPOSURE TO HAZARDOUS GASES.

UNUSUAL FIRE AND EXPLOSION HAZARDS – DECOMPOSES AT 180°C RELEASING OXYGEN GAS: CONTAINER MAY RUPTURE.

SECTION V – HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE – NOT DETERMINED

TOXICITY – LC50 INHALATION-(RAT) NO MORTALITY @ 3.5MG/L (1HR) LD50 DERMAL (RABBIT) >1000MG/KG FISH, LC50 (LETHAL CONCENTRATION) TLM 96HR: 10-1 PPM. IT IS NOT LISTED BY NTP,IARC, OR OSHA AS A CARCINOGEN

ROUTES OF ENTRY – INHALATION, EYE CONTACT, SKIN CONTACT, INGESTION

EFFECTS OF OVER-EXPOSURE – INHALATION: INHALATION OF DUST AND DEPOSITION OF PARTICLES IN RESPIRATORY TRACT CAN LEAD TO IRRITATION – EFFECTS DEPENDENT UPON CONCENTRATION – UPPER RESPIRATORY TRACT IRRITATION, NASAL CONGESTION, COUGHING, SORE THROAT, LARYNGITIS AND SHORTNESS OF BREATH. IN HIGH CONCENTRATIONS OF RESPIRABLE PARTICULATE, FLUID IN THE LUNGS MAY BE PRODUCED. **EYES/SKIN:** CORROSIVE TO EYES, EVEN MINUTE AMOUNTS CAN CAUSE SEVERE IRRITATION, EVEN BLINDNESS. CONTACT WITH SKIN MAY CAUSE SEVERE IRRITATION, BURNS OR TISSUE DESTRUCTION. **INGESTION:** IF SWALLOWED, CAUSES SEVERE BURNS TO THE DIGESTIVE TRACT AND CAN BE FATAL.

EMERGENCY AND FIRST AID PROCEDURES – INHALATION: MOVE PERSON TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH TO MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN AND CALL A PHYSICIAN. **EYE/SKIN CONTACT:** IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES AND SKIN WITH PLENTY OF WATER (SOAP AND WATER FOR SKIN) FOR AT LEAST 15 MINUTES, WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. FOR EYE CONTACT, GET IMMEDIATE MEDICAL ATTENTION. IF SKIN IRRITATION OCCURS, GET MEDICAL ATTENTION. **INGESTION:** IF SWALLOWED, GIVE AT LEAST 3-4 GLASSES OF WATER, BUT DO NOT INDUCE VOMITING. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. GET MEDICAL ATTENTION. NOTES TO PHYSICIAN – TREAT SYMPTOMATICALLY.

SECTION VI – REACTIVITY DATA

STABILITY

UNSTABLE ABOVE 170°C (338 Deg. F)

CONDITIONS TO AVOID

CONTAMINATION OR EXCESSIVE HEAT ABOVE 170°C (338 Deg. F)

INCOMPATIBILITY

AVOID CONTACT WITH ACIDS, FLAMMABLE OR COMBUSTIBLE MATERIALS, ORGANICS, NITROGEN CONTAINING COMPOUNDS AND REDUCING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS – ACIDS OR AMMONIA CONTAMINATION WILL RELEASE TOXIC GASES. EXCESSIVE HEAT WILL CAUSE DECOMPOSITION AND THE RELEASE OF OXYGEN AND CHLORINE GAS.

HAZARDOUS POLYMERIZATION

WILL NOT OCCUR

SECTION VII – PRECAUTIONS FOR SAFE HANDLING

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED – NOTE: USE EXTREME CAUTION IN HANDLING. 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 LABELLED. 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 LABELLED.

WASTE DISPOSAL METHOD – DISPOSE OF IN ACCORDANCE WITH THE CLEAN AIR ACT, CLEAN WATER ACT, THE RESOURCE CONSERVATION AND RECOVERY ACT, AS WELL AS ANY STATE, LOCAL, OR FEDERAL REGULATIONS FOR A HAZARDOUS WASTE.

SECTION VIII – CONTROL MEASURES

RESPIRATORY PROTECTION – IF DUST CONDITIONS ARE ENCOUNTERED, USE NIOSHA/MSHA APPROVED RESPIRATORS WITH ACID GAS CARTRIDGE AND DUST PREFILTER. THE RESPIRATOR USE LIMITATIONS MUST BE OBSERVED. RESPIRATORY PROTECTION PROGRAMS MUST BE IN ACCORDANCE WITH 29 CFR 1910.134.

PROTECTIVE GLOVES

WEAR NATURAL OR SYNTHETIC RUBBER GLOVES.

EYE PROTECTION

CHEMICAL SAFETY GOGGLES

OTHER PROTECTIVE EQUIPMENT – BOOTS, APRONS, OR CHEMICAL SUITS SHOULD BE USED TO PREVENT SKIN CONTACT. PERSONAL PROTECTIVE CLOTHING AND USE OF EQUIPMENT MUST BE IN ACCORDANCE WITH 29 CFR 1910.132 & 29 CFR 1910.133.

SECTION IX – SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING – DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. KEEP IN ORIGINAL CONTAINER IN A COOL DRY PLACE. KEEP CONTAINER CLOSED WHEN NOT IN USE. KEEP AWAY FROM HEAT SOURCES, SPARKS, OPEN FLAMES AND LIGHTED TOBACCO PRODUCTS. USE ONLY A CLEAN DRY SCOOP MADE OF METAL OR PLASTIC EACH TIME THIS PRODUCT IS TAKEN FROM CONTAINER. DO NOT ADD THIS PRODUCT TO ANY DISPENSING DEVICE CONTAINING REMNANTS OF ANY OTHER PRODUCT, THIS MAY CAUSE VIOLENT REACTIONS OF FIRE OR EXPLOSION. ADD THIS PRODUCT ONLY TO WATER. IT MAY CAUSE FIRE OR EXPLOSION IF MIXED WITH MATERIALS SUCH AS OIL, KEROSENE, GASOLINE, PAINT PRODUCTS AND MOST OTHER ORGANIC MATERIALS. WASH HANDS AFTER HANDLING. STORE OUT OF REACH OF CHILDREN.

THE INFORMATION SUPPLIED ABOVE IS PRESENTED IN GOOD FAITH AND HAS BEEN DERIVED FROM SOURCES BELIEVED TO BE RELIABLE, HOWEVER, NO WARRANTY EXPRESSED OR IMPLIED IS EXTENDED REGARDING ITS ACCURACY OR THE RESULTS TO BE OBTAINED FROM ITS USE SINCE CONDITIONS OF USE ARE BEYOND OUR CONTROL. ALL RISKS ARE ASSUMED BY THE USER

MATERIAL SAFETY DATA SHEET

CALCIUM CHLORIDE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: CALCIUM CHLORIDE

CHEMICAL CLASS: Inorganic salts.

APPLICATIONS: Oil well drilling fluid additive. Oil well completion fluid additive. Weighting agent.

EMERGENCY TELEPHONE: 281-561-1600

SUPPLIER: Supplied by a Business Unit of
M-I L.L.C.
P.O. Box 42842, Houston, Texas 77242-2842
See cover sheet for local supplier.

TELEPHONE: 281-561-1509

FAX: 281-561-7240

CONTACT PERSON: Sam Hoskin - Manager, Occupational Health

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME:	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
Calcium chloride	10043-52-4	60-100 %		

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION! MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. Avoid contact with eyes, skin and clothing. Avoid breathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

This product is a/an white powder. A nuisance dust. Dike and contain spills. Keep out of sewers and waterways. No significant immediate hazards for emergency response personnel are known.

ACUTE EFFECTS:

HEALTH HAZARDS, GENERAL:

Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may lead to pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma. Dermatitis and asthma may result from short contact periods.

INHALATION: Irritating to the respiratory tract if inhaled.

INGESTION: Harmful if swallowed. May cause gastric distress, nausea and vomiting if ingested.

SKIN: Irritating to the skin.

EYES: Irritating to the eyes.

CHRONIC EFFECTS:

CARCINOGENICITY:

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

ROUTE OF ENTRY:

Inhalation. Skin and/or eye contact.

TARGET ORGANS:

Respiratory system, lungs. Skin. Eyes.

4. FIRST AID MEASURES

GENERAL: Persons seeking medical attention should carry a copy of this MSDS with them.

INHALATION: Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.

INGESTION: Drink a couple of glasses water or milk. Do not give victim anything to drink of he is unconscious. Get medical attention.

SKIN: Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYES: Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5. FIRE FIGHTING MEASURES

FLAMMABILITY LIMIT - LOWER(%): N/D

FLAMMABILITY LIMIT - UPPER(%): N/D

EXTINGUISHING MEDIA:

Use extinguishing media appropriate for surrounding fire. Carbon dioxide (CO₂). Dry chemicals. Foam. Water spray, fog or mist.

SPECIAL FIRE FIGHTING PROCEDURES:

No specific fire fighting procedure given.

UNUSUAL FIRE & EXPLOSION HAZARDS:

No unusual fire or explosion hazards noted.

HAZARDOUS COMBUSTION PRODUCTS:

This material is not combustible. No specific hazardous combustion products noted.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Wear proper personal protective equipment (see MSDS Section 8).

SPILL CLEAN-UP PROCEDURES:

Avoid generating and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Do not contaminate drainage or waterways. Repackage or recycle if possible.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS:

Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation. Mechanical ventilation or local exhaust ventilation is required.

STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

INGREDIENT NAME:	CAS No.:	OSHA PEL:		ACGIH TLV:		OTHER:		UNITS:
		TWA:	STEL:	TWA:	STEL:	TWA:	STEL:	
Calcium chloride	10043-52-4	5		3				mg/m ³ resp.dus

INGREDIENT COMMENTS:

No exposure limits noted for ingredient(s). Exposure limits are for Particulates Not Otherwise Classified (PNOC).

PROTECTIVE EQUIPMENT:**ENGINEERING CONTROLS:**

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

VENTILATION: Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.

RESPIRATORS: Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

PROTECTIVE GLOVES:

Use suitable protective gloves if risk of skin contact.

EYE PROTECTION:

Wear dust resistant safety goggles where there is danger of eye contact.

PROTECTIVE CLOTHING:

Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES:

Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE:	Powder, dust.
COLOR:	White.
ODOR:	Odorless or no characteristic odor.
SOLUBILITY DESCRIPTION:	Very soluble in water.

SOLUBILITY VALUE (g/100g H₂O 68°F):	75	
DENSITY/SPECIFIC GRAVITY (g/ml):	2.2	TEMPERATURE (°F): 68
VAPOR DENSITY (air=1):	N/D	
VAPOR PRESSURE:	N/D	TEMPERATURE (°F):
pH-VALUE, DILUTED SOLUTION:	N/D	CONCENTRATION (% ,M):

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID:
Avoid contact with water.

HAZARDOUS POLYMERIZATION:
Will not polymerize.

POLYMERIZATION DESCRIPTION:
Not relevant.

MATERIALS TO AVOID:
Sulfuric acid

HAZARDOUS DECOMPOSITION PRODUCTS:
No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

TOXIC DOSE - LD 50: 1000 mg/kg (oral rat)

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:
Contact M-I Environmental Affairs for ecological information.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT:
This product, should it become a waste, is not hazardous by U.S. RCRA criteria.

DISPOSAL METHODS:
Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

PRODUCT RQ: N/A

U.S. DOT:
U.S. DOT CLASS: Not regulated.

CANADIAN TRANSPORT:
TDGR CLASS: Not regulated.

SEA TRANSPORT:**IMDG CLASS:** Not regulated.**AIR TRANSPORT:****ICAO CLASS:** Not regulated.

15. REGULATORY INFORMATION

REGULATORY STATUS OF INGREDIENTS:

NAME:	CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
Calcium chloride	10043-52-4	Yes	No	No	No	Yes

US FEDERAL REGULATIONS:**WASTE CLASSIFICATION:** Not a hazardous waste by U.S. RCRA criteria. See Section 13.**REGULATORY STATUS:**

This Product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

SARA 311 Categories:

1: Immediate (Acute) Health Effects.

The components of this product are listed on or are exempt from the following international chemical registries:

TSCA (U.S.)

DSL (Canada)

EINECS (Europe)

STATE REGULATIONS:**STATE REGULATORY STATUS:**

This product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

None.

PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

CANADIAN REGULATIONS:**LABELS FOR SUPPLY:****REGULATORY STATUS:**

This Material Safety Data Sheet has been prepared in compliance with the Controlled Product Regulations.

Canadian WHMIS Classification: D2B - Other Toxic Effects: Toxic Material

16. OTHER INFORMATION

NPCA HMIS HAZARD INDEX:

1 Slight Hazard

FLAMMABILITY:

0 Minimal Hazard

REACTIVITY: 1 Slight Hazard
NPCA HMIS PERS. PROTECT. INDEX: E - Safety Glasses, Gloves, Dust Respirator

USER NOTES: N/A = Not applicable N/D = Not determined

INFORMATION SOURCES: OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants.

ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition).

Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997).
Product information provided by the commercial vendor(s).

PREPARED BY: Sam Hoskin

REVISION No./Repl. MSDS of: 1 / September 7, 1995

MSDS STATUS: Approved.

DATE: August 19, 1998

DISCLAIMER:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

OREQ CORPORATION
42306 Remington Avenue Temecula CA 92590

ClearView®
MATERIAL SAFETY DATA SHEET

INFORMATION ON THIS FORM IS FURNISHED SOLELY FOR THE PURPOSE OF COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND SHALL NOT BE USED FOR ANY OTHER PURPOSE USE OR DISSEMINATION OF ALL OR ANY PART OF THIS INFORMATION FOR ANY OTHER PURPOSE MAY RESULT IN A VIOLATION OF LAW OR CONSTITUTE GROUNDS FOR LEGAL ACTION

SECTION I

MANUFACTURER'S NAME
SHIKOKU CHEMICALS CORPORATION

EMERGENCY TELEPHONE
CHEMTREC 1-800-424-9300

TRADE NAME AND SYNONYMS
ClearView® 3" JUMBO TABS

CHEMICAL NAME AND SYNONYMS
TRICHLOROISOCYANURIC ACID

CHEMICAL FAMILY
ORGANIC CHLORINE MIXTURE

FORMULA
1,3,5 – TRICHLORO-5-TRIAZINE - 2,4,6 - TRIONE

SECTION II – HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

COMPONENT
TRICHLORO-S-TRIAZINETRIONE

99.0%

HAZARD DATA
CORROSIVE (SKIN, EYES, MUCOUS MEMBRANE)
(PEL OSHA PPM) – NOT ESTABLISHED

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT
N/A

SPECIFIC GRAVITY (H20-1)
2.07

VAPOR PRESSURE (MM Hg.)
N/A

VAPOR DENSITY (AIR=1)
IS HEAVIER THAN AIR

SOLUBILITY IN WATER
1.28G/100ML WATER AT 25°C

MELTING POINT
226°C

pH
2.8

APPEARANCE AND ODOR
WHITE SOLID WITH CHLORINE ODOR

EVAPORATION RATE
(BUTYL ACETATE=1) – NOT ESTABLISHED

SECTION IV – FIRE AND EXPLOSION HAZARDS

FLASH POINT (METHOD USED)
NONE

FLAMMABLE LIMITS
NONE

EXTINGUISHING MEDIA
MASSIVE AMOUNTS OF WATER.

SPECIAL FIRE FIGHTING PROCEDURES – FIREFIGHTERS SHOULD WEAR FULL PROTECTIVE CLOTHING AND SELF-CONTAINED BREATHING APPARATUS. THOROUGHLY DECONTAMINATE EQUIPMENT, INCLUDING ALL CLOTHING AFTER THE INCIDENT.

UNUSUAL FIRE AND EXPLOSION HAZARDS HIGHLY REACTIVE OXIDIZING AND CHLORINATING AGENT. CONTACT WITH ORGANIC MATTER, EASILY CHLORINATED, OR OXIDIZING MATERIALS MAY RESULT IN FIRE. QUENCH WITH MASSIVE QUANTITIES OF WATER TO EXTINGUISH THERMAL DECOMPOSING PRODUCTS. IF POSSIBLE, ISOLATE THEM TO AN OPEN AREA WEARING SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE AND PROTECTIVE CLOTHING.

SECTION V – HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE – NOT ESTABLISHED
TOXICITY – ORAL LD50 (RAT) (MG/KG): 1.060 (MALE) AND 1.010 (FEMALE)

ROUTES OF ENTRY – INHALATION, EYE CONTACT, SKIN CONTACT, INGESTION

EFFECTS OF OVER-EXPOSURE – THIS PRODUCT CAN INDUCE CHEMICAL BURNS AFTER CONTACT IS MADE WITH HUMAN EYES AND SKIN. THE DUST OF THIS PRODUCT CAN IRRITATE RESPIRATORY PASSAGES.

EMERGENCY AND FIRST AID PROCEDURES – EYES: FLUSH IMMEDIATELY WITH COLD WATER FOR AT LEAST 15 MINUTES, SEEK MEDICAL ATTENTION. SKIN: BRUSH OFF EXCESS CHEMICAL AND FLUSH SKIN WITH COLD WATER FOR AT LEAST 15 MINUTES, IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION. INHALATION: REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, HAVE TRAINED PERSON TO ADMINISTER OXYGEN. IF NOT BREATHING, ADMINISTER CPR, CALL DOCTOR IMMEDIATELY. INGESTION: DO NOT INDUCE VOMITING. CALL A DOCTOR OR POISON CONTROL CENTER IMMEDIATELY.

SECTION VI – REACTIVITY DATA

STABILITY

STABLE UNDER DRY AND NORMAL CONDITIONS.

CONDITIONS TO AVOID

HIGH TEMPERATURE, POOR VENTILATION, MOISTURE, HIGH HUMIDITY, CONTAMINATION.

INCOMPATIBILITY – CONTACT WITH MOST ORGANIC MATTER OR EASILY CHLORINATED OR OXIDIZED MATERIALS MAY RESULT IN FIRE. CONTACT WITH AMMONIA, AMONIUM SALTS, UREA OR SIMILAR COMPOUNDS WHICH CONTAIN NITROGEN MAY FORM NITROGEN TRICHLORIDE, A HIGHLY EXPLOSIVE COMPOUND. THIS PRODUCT MAY FORM AN EXPLOSIVE MIXTURE WITH CALCIUM HYPOCHLORITE.

HAZARDOUS DECOMPOSITION PRODUCTS – NITROGEN TRICHLORIDE, CHLORINE, CYANURIC ACID.

HAZARDOUS POLYMERIZATION

WILL NOT OCCUR UNDER NORMAL CONDITIONS.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED – SWEEP UP LEAKS OR SPILLS OF THIS PRODUCT WITH DRY BROOM AND DISSOLVE THEM IN WATER. NEUTRALIZE THIS SOLUTION WITH SODIUM THIOSULFATE OR SODIUM SULFITE AND DISCARD IT WHILE CONTROLLING TEMPERATURE AND pH.

WASTE DISPOSAL METHOD

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

SECTION VIII – CONTROL MEASURES

RESPIRATORY PROTECTION – IF NEEDED, USE MSHA/NIOSH APPROVED RESPIRATOR FOR DUSTS, MISTS, AND FUMES.

VENTILATION

LOCAL EXHAUST – NEED IN AREAS WHERE
DUST OR MIST PREVAIL

SPECIAL - NONE

MECHANICAL – USE FOR GENERAL CONTROL

OTHER - NONE

PROTECTIVE GLOVES

WEAR RUBBER GLOVES, AVOID SKIN CONTACT

EYE PROTECTION

WEAR SAFETY GOGGLES OR GLASSES WITH SIDE SHIELDS

OTHER PROTECTIVE EQUIPMENT – FACILITIES STORING OR UTILIZING THIS MATERIAL SHOULD BE EQUIPPED WITH AN EYE WASH AND SAFETY SHOWER.

SECTION IX – SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING – DO NOT MIX WITH OTHER CHEMICALS, NEVER ADD WATER TO THE PRODUCT, ALWAYS ADD PRODUCT TO LARGE QUANTITIES OF WATER. USE DRY CLEAN UTENSILS. DO NOT ADD TO DISPENSING DEVICE CONTAINING REMNANTS OF ANY OTHER PRODUCT. THIS MAY CAUSE A VIOLENT REACTION. CONTAMINATION WITH MOISTURE, ORGANIC MATTER, OR OTHER CHEMICALS WILL START A REACTION AND GENERATE HEAT, HAZARDOUS GASES, POSSIBLE FIRE AND EXPLOSION. IF CONTAMINATED, DO NOT RESEAL CONTAINER. IF POSSIBLE, PUT CONTAINER IN OPEN AIR, FLOOD AREA WITH LOTS OF WATER.

OTHER PRECAUTIONS

NONE

THE INFORMATION SUPPLIED ABOVE IS PRESENTED IN GOOD FAITH AND HAS BEEN DERIVED FROM SOURCES BELIEVED TO BE RELIABLE, HOWEVER, NO WARRANTY EXPRESSED OR IMPLIED IS EXTENDED REGARDING ITS ACCURACY OR THE RESULTS TO BE OBTAINED FROM ITS USE SINCE CONDITIONS OF USE ARE BEYOND OUR CONTROL. ALL RISKS ARE ASSUMED BY THE USER



MATERIAL SAFETY DATA SHEET NATURAL DIATOMACEOUS EARTH (DE)

1. PRODUCT AND COMPANY INFORMATION

DICALITE MINERALS CORP. 1 Bala Avenue, Suite 310, Bala Cynwyd, PA 19004

Trade Name(s): Dicalite (All Natural DE Products) Dicalite
104,183,BP-3,BP-5,CA-3,CA-5,D4A,D4C,D4R 677,
677S,SA3,
Generic Name: Natural Diatomaceous Earth
CAS #: 61790-53-2
EINECS: 310-127-6
Formula: Predominantly SiO₂
Chemical Name: Silica
Manufacturer: DICALITE MINERALS CORP.
Address: 1 Bala Ave, Suite 310
Telephone: (610)660-8840 (530)-335-5451
City: Bala Cynwyd **State:** PA **Zip:** 19004
Primary Material Use: Natural Filler
Date of Preparation: 11/05/08 **by:** Dicalite Minerals Corp./Dicaperl Minerals Inc.

2. COMPOSITION-INGREDIENT INFORMATION

INGREDIENT NAME	CAS NUMBER	%	PEL/TLV
Calcined Diatomaceous Earth (DE)	61790-53-2	100	See Below
Quartz Respirable Quartz, ACGIH	14808-60-7	(< 2%)	0.025mg/M ³

3. HAZARDS IDENTIFICATION

Appearance: White to off-white, no specific odor.
OSHA Regulations Status: OSHA 29CFR 1910.1200
Potential Health Effects: See section 11 Toxicological information.
Primary Entry Routes: See below
Eyes: Temporary irritation or inflammation
Skin: May cause dryness with continued exposure.
Ingestion: Not considered harmful in small amounts, but mouth,throat and stomach irritation may occur.
Chronic Health Effects: This product may contain crystalline silica (CS), which is classified as a hazard by inhalation.Long term inhalation of respirable crystalline silica dusts in excess of the TLV (threshold limit value), over a prolonged period may cause a non-cancerous lung disease (silicosis). Inhalation of respirable crystalline silica has been classified as carcinogenic (Group1) byIARC, a unit of the World Health Organization. Respirable crystalline silica is listed by the NTP as a known human carcinogen.
Conditions aggravated by pre-existing conditions: Upper respiratory and lung disease such as bronchitis, emphysema,and exposure asthma.

4. FIRST AID MEASURES

Eyes: Do not rub eyes. Flush eyes with copious amounts of water to remove any dust particles.Consult a physician if irritation persists.
Inhalation: Remove from dusty area; drink water to clear throat; blow nose to evacuate dust.
Skin Contact: Use moisturizing lotions if dryness occurs.
Skin Absorption: NA
Ingestion: Drink copious amounts of water to reduce bulk and dryness effects.

5. FIRE FIGHTING MEASURES

Flash Point(Method):	Nonflammable
NFPA Flammable/Combustible	N/A
Flammable Limits:	N/A
Liquid Classification:	N/A
Extinguishing Media:	N/A
Auto-Ignition Temperature:	N/A
Unusual Fire or Explosion Hazards :	None
Special FireFightingProcedures:	None

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use proper PPE (See section 8)
Environmental Precautions	No significant environmental impact
Containment and Cleanup	Clean up material with vacuum equipped with HEPA filter. Use water as dust suppressant if necessary.

7. HANDLING AND STORAGE

Handling	Minimize dust generation and accumulation. Avoid contact with eyes. Avoid breathing dust. Repair or dispose of broken bags immediately.
Storage	Keep away from hydrofluoric acid. Keep dry, and away from odors.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Goggles:	The use safety eyewear to protect from dusts is recommended.
Gloves:	May use gloves to protect overly-sensitive skin.
Respirator:	Use NIOSH approved respirators to protect against silicosis producing dusts. For dust concentrations:<10x PEL, use an N95 quarter or half mask respirator; <50X PEL, use a full face respirator equipped with N95 filters; <200X PEL, use a powered air purifying respirator (positive pressure) with N95 filters; for dust concentrations >200X the PEL use a type C, supplied air respirator (continuous flow, positive pressure), with a full face piece.
Ventilation:	Use adequate exhaust ventilation and/or dust collection to keep dust levels below TLV.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor:	White to off white powder; odorless.		
Boiling Point:	N/A	Evaporation Rate (= 1):	N/A
Vapor Pressure:	N/A	Specific Gravity (water = 1):	2.3
Water Solubility (%):	Negligible	Melting Point:	N/A
Vapor Density:(Air=1):	N/A	% Volatile by Volume:	NONE
pH (10% solution)	5-10		

10. STABILITY AND REACTIVITY

Material is an inorganic mineral. Material is stable. Hazardous polymerization cannot occur.

Physical Hazards:	Material not reactive
Conditions to Avoid:	None in prescribed use.
Incompatibilities:	Hydrofluoric Acid (HF).
Hazardous Decomposition Products:	None

11.TOXOCOLOGICAL INFORMATION

Summary: This product may contain crystalline silica (CS), which is classified as a hazard by inhalation.. Long term inhalation of respirable crystalline silica dusts in excess of the TLV (threshold limit value), over a prolonged period may cause a non-cancerous lung disease (silicosis). Inhalation of respirable crystalline silica has been classified as carcinogenic (Group1) by IARC, a unit of the World Health Organization. Respirable crystalline silica is listed by the NTP as a known human carcinogen.

12. ECOLOGICAL INFORMATION

Naturally occurring mineral. Normally considered inert in the environment. If contaminated, evaluate according to all applicable Federal, State, and Local laws and regulations.

Will not biodegrade, bioaccumulation unlikely.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Material is non-hazardous by RCRA definition (40 CFR 61)
Dispose of in accordance with applicable, Federal, State and Local laws and regulations.

Packaging Disposal: Dispose of in accordance with applicable, Federal, State and Local laws and regulations.

14. TRANSPORTATION INFORMATION

U.S.D.O.T. Proper Shipping Name: Earth, Diatomaceous, crude or ground
Shipping class 55 (no restrictions).
Hazard Classification: Not Classified
Reportable Quantities: N/A
UN (United Nations), NA (North American) Number: N/A

15. REGULATORY INFORMATION

D.O.T. Proper Shipping Name: Earth, Diatomaceous Earth, crude or ground
D.O.T. Hazard Classification: Not Classified
UN, NA Number: Not Applicable
RCRA: This material (as a product) is not defined as a hazardous waste under RCRA 40CFR Part 261.
TSCA: This material is listed in the TSCA inventory but is not otherwise regulated by TSCA
CERCLA: Material not reportable under CERCLA. Comply with Local Requirements.
RQ=Not Applicable
California Proposition 65: This product contains chemicals known to the State of California to cause cancer.
SARA Title III: Not Listed
NTP: Crystalline silica in respirable size, in industrial and occupational settings is classified by the NTP as a carcinogen.

16. OTHER INFORMATION

NFPA		4-Extreme
		3-High
		2-Moderate
		1-Slight
		0-Insignificant

HMIS	* Health
	0 Flammability
	0 Reactivity
	E Protective Equipment

As of the date of preparation and or revision of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable Federal and State law(s). However, no warranty, representation, or guaranty, express or implied with respect to this information or its completeness is intended or given. Customer users of silica must comply with all applicable health and safety laws, regulations and orders, including OSHA hazardous Communication standards.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 1 of 8
Date-Issued: 09/26/1997
MSDS Ref. No: SREG21021
Date-Revised: 11/01/2000
Revision No: 3

Regal Dy-Chlor II

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Regal Dy-Chlor II
GENERAL USE: Swimming pool sanitizer.
CHEMICAL FAMILY: Chlorinated Isocyanurates

MANUFACTURER

Alliance Packaging, Inc.
109 Northpark Blvd., Suite 400
Covington, LA 70433-5001
Customer SERVICE: (800) 959-7946

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (Transportation) (800) 424-9300
Medical (800) 255-3924

COMMENTS:

EPA Registration Number: 5185-54-42177

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS#</u>	<u>Wt.%</u>
Sodium dichloro-s-triazinetriene	2893-78-9	97

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE:
White, granular material

IMMEDIATE CONCERNS:

DANGER: Highly Corrosive: Causes skin and eye damage. May be fatal if swallowed. Do not get in eyes, on skin, or on clothing. Wear goggles or safety glasses and rubber gloves when handling this product. Irritating to nose and throat. Avoid breathing dust and fumes. Remove contaminated clothing and wash before reuse.

POTENTIAL HEALTH EFFECTS

EYES:

Corrosive. Contact with dust or vapors can cause irritation, tearing, redness and pain, which may lead to blurred vision, severe tissue burns and even blindness. Avoid contact with eyes.

SKIN:

Corrosive. Contact with skin can cause skin irritation which may result in tissue burns if not removed promptly. Avoid contact with skin.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 2 of 8
Date-Issued: 09/26/1997
MSDS Ref. No: SREG21021
Date-Revised: 11/01/2000
Revision No: 3

Regal Dy-Chlor II

INGESTION:

May cause burning of mouth, throat and esophagus, abdominal distress and severe irritation, possibly leading to corrosion of the digestive tract.

INHALATION:

Breathing dust or fumes may produce throat and respiratory tract irritation. Avoid breathing dust or fumes.

CHRONIC:

There are no known chronic hazards.

ROUTES OF ENTRY:

Skin Contact, Inhalation, Ingestion, Eye Contact.

4. FIRST AID MEASURES

EYES:

If in eyes: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

SKIN:

If on skin: Wash with plenty of soap and water. Get medical attention if irritation persists.

INGESTION:

If swallowed: Drink promptly large quantities of water. Avoid alcohol. Call a physician or poison control center immediately.

INHALATION:

If inhaled: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.

NOTES TO PHYSICIAN:

Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: Not Applicable

AUTOIGNITION TEMPERATURE: Not Applicable

GENERAL HAZARD:

This product, if heated by an outside source to temperatures above 240 C (464 F), will undergo vigorous self-sustaining decomposition with the evolution of heat and dense noxious gases. In addition, when in contact with another combustible material, this product will increase the burning rate of the combustible material. When ignited, will burn with the evolution of noxious chlorine containing gases.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 3 of 8

Date-Issued: 09/26/1997

MSDS Ref. No: SREG21021

Date-Revised: 11/01/2000

Revision No: 3

Regal Dy-Chlor II

EXTINGUISHING MEDIA:

In case of fire or smoke, call the fire department. Do not attempt to extinguish the fire without a self-contained breathing apparatus (SCBA). Do not let the fire burn. Flood with copious amounts of water. DO NOT use ABC or other dry chemical extinguishers since there is the potential for a violent reaction.

EXPLOSION HAZARDS:

Nitrogen trichloride can be generated slowly by the reaction of small quantities of water with a high concentration of this product. Nitrogen trichloride can present an explosion hazard.

Immediately after a fire has been extinguished, check for wet or damp material. Any spilled material from burned or broken containers should be assumed contaminated. Neutralize to a non-oxidizing material for safe disposal. Do not attempt to re-close broken containers, even for movement to the disposal area. They should be left open to disperse any nitrogen trichloride that may form.

Material which appears undamaged except for being damp on the outside, should be opened and inspected immediately. If the plastic liner (where applicable) of the container is damaged or the material is damp, the material should be chemically treated if allowable, to a non-oxidizing material for safe disposal.

Bulging containers require extreme care. Contact the fire department.

FIRE FIGHTING PROCEDURES:

Firefighters should wear full protective clothing and self-contained breathing apparatus (SCBA). Using a 10% solution of sodium carbonate, thoroughly decontaminate fire fighting equipment including all fire fighting wearing apparel after the incident.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES:

Using appropriate protective clothing and safety equipment, contain spilled material. Do not add water to spilled material. Using clean dedicated equipment, sweep and scoop all spilled material, contaminated soil, and other contaminated material and place into clean dry containers for disposal. Do not use floor sweeping compounds to clean up spills. Do not close containers containing wet or damp material. They should be left open to disperse any hazardous gases that may form. Do not transport wet or damp material. Keep product out of sewers, watersheds and water systems. Do not contaminate water, food, or feed by storage or disposal or cleaning of equipment. Dispose of according to local, state and federal regulations.

7. HANDLING AND STORAGE

HANDLING:

MATERIAL SAFETY DATA SHEET

MSDS

Page: 4 of 8
Date-Issued: 09/26/1997
MSDS Ref. No: SREG21021
Date-Revised: 11/01/2000
Revision No: 3

Regal Dy-Chlor II

STRONG OXIDIZING AGENT: Do not mix with other chemicals. Mix only with water. Never add water to product. Always add product to large quantities of water. Use clean dry utensils. Do not add this product to any dispensing device containing remnants of any other product. Such use may cause a violent reaction leading to fire or explosion. Contamination with moisture, organic matter or other chemicals will start a chemical reaction and generate heat, hazardous gas, possible fire and explosion. In case of contamination or decomposition, do not reseal container. If possible, isolate container in open air or well ventilated area. Flood area with large volumes of water.

STORAGE:

Keep this product in original closed container when not in use. Store in a cool, dry, well ventilated area away from heat or open flame. Do not contaminate water, food or feed by storage or disposal or cleaning of equipment. Do not store above 125 F (52 C).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		SUPPLIER OEL	
		ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
Sodium dichloro-s-triazinetriene	TWA	N/E ^[1]		N/E			

OSHA TABLE COMMENTS:

1. N/E = Not Established

ENGINEERING CONTROLS:

General room ventilation plus local exhaust should be used to minimize exposure to dust/vapors.

PERSONAL PROTECTIVE EQUIPMENT:

EYES AND FACE:

Wear goggles or safety glasses with side shields when handling this product.

SKIN:

Wear rubber gloves when handling this product. Avoid contact with skin.

RESPIRATORY:

A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

WORK HYGIENIC PRACTICES:

Remove and wash contaminated clothing before reuse.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 5 of 8
Date-Issued: 09/26/1997
MSDS Ref. No: SREG21021
Date-Revised: 11/01/2000
Revision No: 3

Regal Dy-Chlor II

OTHER USE PRECAUTIONS:

Facilities storing or utilizing this material should be equipped with an eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid
ODOR: Chlorine
APPEARANCE: Granules
COLOR: White
pH: 6 to 7(1% solution @ 25 C)
VAPOR PRESSURE: Not Available
VAPOR DENSITY: Not Determined
BOILING POINT: Not Applicable
FREEZING POINT: Not Applicable
MELTING POINT: 240°C (464°F) to 250°C (480°F)
SOLUBILITY IN WATER: 24g / 100g water
DENSITY: 56 - 60 lb / cu. ft.

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:

High temperature. Poor ventilation. Contamination. Moisture/high humidity.

STABILITY:

This product is stable under normal conditions.

POLYMERIZATION:

Hazardous polymerization will not occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS:

Chlorine containing gases can be produced.

INCOMPATIBLE MATERIALS:

This material is a strong oxidizing agent. Avoid contact with water on concentrated material in the container. Also avoid contact with easily oxidizable organic material; ammonia, urea, or similar nitrogen containing compounds; inorganic reducing compounds; floor sweeping compounds; calcium hypochlorite; alkalis; other swimming pool/spa chemicals in their concentrated forms.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 6 of 8
Date-Issued: 09/26/1997
MSDS Ref. No: SREG21021
Date-Revised: 11/01/2000
Revision No: 3

Regal Dy-Chlor II

11. TOXICOLOGICAL INFORMATION

ACUTE

DERMAL LD₅₀: 6000 mg/kg of body weight in rabbits.

ORAL LD₅₀: 700 mg/kg of body weight in rats

On contact with moisture, this material readily hydrolyzes to hypochlorous acid and cyanuric acid. The tissue damage resulting from contact is considered to result, in part, from its hypochlorous acid decomposition products. May cause gastrointestinal and respiratory tract irritation. May be severely irritating or corrosive to eyes and skin.

EYE EFFECTS:

This product is corrosive to eyes.

SKIN EFFECTS:

This product is corrosive to skin.

CHRONIC / SUBCHRONIC:

Chronic exposure to large amounts of this compound has not been characterized and the irritating properties of the compound make such an exposure highly unlikely.

CARCINOGENICITY:

This product is not listed as a carcinogen by IARC.

This product is not listed as a carcinogen by NTP.

This product is not listed as a carcinogen by OSHA.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:

Pesticide wastes are toxic. Improper disposal of excess pesticide or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance. Do not contaminate water, food, or feed by storage or disposal or cleaning of equipment. Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. Contact with incompatible materials could cause a reaction or fire.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 7 of 8
Date-Issued: 09/26/1997
MSDS Ref. No: SREG21021
Date-Revised: 11/01/2000
Revision No: 3

Regal Dy-Chlor II

EMPTY CONTAINER:

Do not reuse container. Rinse thoroughly before discarding in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Dichloroisocyanuric Acid, Dry

PRIMARY HAZARD CLASS/DIVISION: 5.1

UN/NA NUMBER: 2465

PACKING GROUP: II

CANADA TRANSPORT OF DANGEROUS GOODS

PROPER SHIPPING NAME: Dichloroisocyanuric Acid, Dry

PRIMARY HAZARD CLASS/DIVISION: 5.1

UN/NA NUMBER: 2465

PACKING GROUP: II

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES:

FIRE: YES PRESSURE GENERATING: NO REACTIVITY: YES ACUTE: YES CHRONIC: NO

313 REPORTABLE INGREDIENTS: This product or its components are not listed.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: This product or its components are not listed.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: This product or its components are not subject to export notification.

TSCA STATUS: This product or its components are listed on the TSCA Inventory.

OSHA HAZARD COMM. RULE:

Product is hazardous by definition of the Hazardous Communication Standard.

FIFRA (FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT):

This product is a registered pesticide.

16. OTHER INFORMATION

MATERIAL SAFETY DATA SHEET

MSDS

Page: 8 of 8

Date-Issued: 09/26/1997

MSDS Ref. No: SREG21021

Date-Revised: 11/01/2000

Revision No: 3

Regal Dy-Chlor II

REVISION SUMMARY

Revision #: 3

This MSDS replaces the November 05, 1999 MSDS. Any changes in information are as follows:
In Section 14

TDG Primary Hazard Class/Division TDG Packing Group TDG UN/NA Number TDG Proper Shipping Name

NFPA CODES

HEALTH: 3 FIRE: 1 REACTIVITY: 1

NFPA STORAGE CLASSIFICATION:

NFPA Oxidizer Class 3

HMIS CODES

HEALTH: 3 FIRE: 1 REACTIVITY: 1 PROTECTION: B

MANUFACTURER DISCLAIMER:

IMPORTANT: This information is given without a warranty or guarantee. No suggestions for use are intended or shall be construed as a recommendation to infringe any existing patents or violate any Federal, State or local laws. Safe handling and use is the responsibility of the customer. Read the label before using this product. This information is true and accurate to the best of our knowledge.

MATERIAL SAFETY DATA SHEET

MSDS

Regal Filter Cleaner & Degreaser

Date-Issued: 09/27/1997
MSDS Ref. No: SREG23746
Date-Revised: 07/16/2002
Revision No: 3

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Regal Filter Cleaner & Degreaser
GENERAL USE: Degreaser for cleaning filters.
CHEMICAL FAMILY: Mixture

MANUFACTURER

Alliance Packaging, Inc.
109 Northpark Blvd., Suite 400
Covington, LA 70433-5001
Customer SERVICE: (800) 959-7946

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (Transportation) (800) 424-9300
Medical (800) 255-3924

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS#</u>	<u>Wt.%</u>
Dipropylene glycol monomethyl ether	34590-94-8	6
Sodium hydroxide	1310-73-2	8
Nonylphenol ethoxylated phosphate ether	51811-79-1	4
Benzenesulfonic acid, dodecyl(sulfophenoxy)-, diammonium salt (DDBSA)	67968-24-5	1.5

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Purple liquid

IMMEDIATE CONCERNS: DANGER: Corrosive. Causes skin and eye burns. Causes digestive tract burns. Do not taste or swallow. Do not get in eyes, on skin, or on clothing. Wear safety glasses and rubber gloves when handling this product. May be irritating to nose and throat. Avoid breathing vapors. If product gets on clothing, remove and wash before reuse. Do not mix with other chemicals.

POTENTIAL HEALTH EFFECTS

EYES: Causes eye burns. Do not get in eyes.

SKIN: Causes skin burns. Do not get on skin.

INGESTION: Ingestion causes digestive tract burns.

INHALATION: May be irritating to nose and throat. Avoid breathing vapors.

CHRONIC: There are no known chronic hazards.

ROUTES OF ENTRY: Skin Contact, Inhalation, Ingestion, Eye Contact.

4. FIRST AID MEASURES

EYES: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

SKIN: If contact with skin: Rinse skin immediately with plenty of water for 15-20 minutes. Get medical attention if irritation persists.

INGESTION: If swallowed: Call 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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.

INHALATION: If inhaled: Remove to fresh air. Get medical attention if breathing is difficult.

NOTES TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: >(200°F)

GENERAL HAZARD: There are no unusual fire and explosion hazards known.

EXTINGUISHING MEDIA: Water Fog

FIRE FIGHTING EQUIPMENT: Firefighters should wear full protective clothing and self contained breathing apparatus (SCBA). Thoroughly decontaminate fire fighting equipment including all fire fighting wearing apparel after the incident.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES: STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Utilizing appropriate clothing and safety equipment, contain spill material. Cover the liquid with an inert absorbent. Using clean, dedicated equipment, sweep and scoop all spilled material, contaminated soil, and other contaminated material and place into clean dry plastic containers for disposal. Dispose of according to local, state and federal regulations.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Avoid contact with eyes, skin or clothing. Avoid breathing vapors.

HANDLING: Mix only with water. Do not mix with other chemicals.

STORAGE: Keep this product dry in original tightly closed container when not in use. Store in a cool, dry, well ventilated area. Do not reuse container, but place in trash collection.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		SUPPLIER OEL	
		ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
Dipropylene glycol monomethyl ether	TWA	100	600	100	606		
	STEL			150	909		
Sodium hydroxide	TWA		2		2		
Nonylphenol ethoxylated phosphate ether	TWA			[1]			
Benzenesulfonic acid, dodecyl(sulfophenoxy)-, diammonium salt (DDBSA)							

OSHA TABLE COMMENTS:

1. N/E = Not Established

ENGINEERING CONTROLS: General room ventilation plus local exhaust should be used to maintain exposure below TLV.

PERSONAL PROTECTIVE EQUIPMENT:

EYES AND FACE: Wear goggles or safety glasses with side shields when handling this product.

SKIN: Wear rubber gloves when handling this product. Avoid contact with skin.

RESPIRATORY: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

WORK HYGIENIC PRACTICES: If product gets on clothing, remove and wash before reuse.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Odorless

APPEARANCE: Clear

COLOR: Purple

pH: >11.9

VAPOR PRESSURE: Not Established

VAPOR DENSITY: Not Established

BOILING POINT: Not Established

FREEZING POINT: Not Established

SOLUBILITY IN WATER: Miscible in Water

DENSITY: 8.76 lbs/gal

SPECIFIC GRAVITY: 1.05 g/ml

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: High temperature. Poor ventilation. Contamination.

STABILITY: This product is stable under normal conditions.

POLYMERIZATION: Hazardous polymerization will not occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Vapors/fumes of organic/inorganic materials plus oxides of carbon may be emitted.

INCOMPATIBLE MATERIALS: Other swimming pool/spa chemicals in their concentrated forms. Strong mineral and organic acids. Strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: This product is corrosive to eyes.

SKIN EFFECTS: This product is corrosive to skin.

CARCINOGENICITY:

This product is not listed as a carcinogen by IARC.

This product is not listed as a carcinogen by NTP.

This product is not listed as a carcinogen by OSHA.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: This product may be toxic to fish and aquatic organisms. Keep product from entering waterways and watersheds.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. Contact with incompatible materials could cause a reaction or fire.

PRODUCT DISPOSAL: Dispose of unused, uncontaminated product in compliance with local, state and federal regulations.

EMPTY CONTAINER: Do not reuse container. Rinse thoroughly before discarding in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Corrosive Liquids, N.O.S. (Contains Sodium Hydroxide Solution)

PRIMARY HAZARD CLASS/DIVISION: 8
UN/NA NUMBER: 1760
PACKING GROUP: III
OTHER SHIPPING INFORMATION: Limited Quantity

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES:

FIRE: YES **PRESSURE GENERATING:** NO **REACTIVITY:** NO **ACUTE:** YES **CHRONIC:** NO

313 REPORTABLE INGREDIENTS: This product or its components are not listed.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: Sodium hydroxide (CAS# 1310-73-2), a component of this product has a CERCLA RQ of 1000 lbs.
Dodecylbenzene sulfonic acid (CAS# 27176-87-0), a component of this product, has a CERCLA RQ of 1000 lbs.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: This product or its components are not subject to export notification.

TSCA STATUS: This product or its components are listed on the TSCA Inventory.

OSHA HAZARD COMM. RULE: Product is hazardous by definition of the Hazardous Communication Standard.

CLEAN WATER ACT: Dodecylbenzene sulfonic acid is listed as a Clean Water Act Section 311 Hazardous Substance. Sodium hydroxide is listed as a Clean Water Act Section 311 Hazardous Substance.

FIFRA (FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT): This product is not a registered pesticide.

16. OTHER INFORMATION

REVISION SUMMARY Revision #: 3

This MSDS replaces the June 17, 2002 MSDS. Any changes in information are as follows:
In Section 5
(Group Field) for Flash Point Flash Point (Operator) Flash Point °F (From)

HMIS RATING		
HEALTH:		3
FLAMMABILITY:		2
PHYSICAL HAZARD:		0
PERSONAL PROTECTION:		B

NFPA RATING	
HEALTH:	3
FIRE:	2
REACTIVITY:	0

Key
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

MANUFACTURER DISCLAIMER: IMPORTANT: This information is given without a warranty or guarantee. No suggestions for use are intended or shall be construed as a recommendation to infringe any existing patents or violate any Federal, State or local laws. Safe handling and use is the responsibility of the customer. Read the label before using this product. This information is true and accurate to the best of our knowledge.



MATERIAL SAFETY DATA SHEET

SECTION 1 – PRODUCT IDENTIFICATION AND COMPANY IDENTIFICATION

Trade Name: Trademarks and product names include Red Flint Sand and Gravel, Silica, Flint, Sand, Silica Sand, Industrial Sand, and Quartz
Common Name: **This product is not to be used for abrasive blasting. This material safety data sheet and the information contained herein were not developed for abrasive blasting.**

Manufacturer's Name: Red Flint Sand and Gravel
Manufacturer's Address: 717 Short Street
P.O. Box 688
Eau Claire, WI 54702-0688

Manufacturer's Number: (800) 238-9139 (8:00 am-5:00 pm Central Time Monday-Friday)
Manufacturer's Fax: (715) 835-0662
Emergency Contact: Industrial Sales or Safety Department
(800) 238-9139 (8:00 am-5:00 pm Central Time Monday-Friday)

SECTION 2 – COMPOSITION AND INFORMATION ON INGREDIENTS

Hazardous Ingredient

Name: Silica Quartz, SiO₂
Case Number: 14808-60-7
Concentration (%): > 89%

Exposure Limits (respirable fraction) in Air:

OSHA & MSHA – PEL	<u>10mg/m³</u>	
	% SiO ₂ + 2	(8-Hour TWA)
ACGIH – TLV	0.05 mg/cubic meter	(8-Hour TWA)
NIOSH	0.05mg/cubic meter	(10-Hour TWA, 40-hour work week)

Exposure Limits refer to the respirable fraction.

PEL means OSHA Permissible Exposure Limit.

TLV means American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value.

MSHA means Mine Safety and Health Administration Exposure Limit.

TWA means 8 hour Time Weighted Average.

CAUTION:

Silica is classified as hazardous under Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1910.1200). The Permissible Exposure Limits (PEL) reported above are the pre-1989 limits that were reinstated by OSHA June 30, 1993 following a decision by the 11th Circuit Court of Appeals. There PELs are now being enforced by the Federal OSHA. Be aware that more restrictive exposure limits may be enforced by some states, agencies, or other authorities. Crystalline silica exists in several forms, the most common of which is quartz. If crystalline silica (quartz) is heated to more than 870° C it can change to a form of crystalline silica known as trydimite, and if crystalline silica (quartz) is heated to more than 1470° C, it can change to a form of crystalline silica known as cristobalite. Crystalline silica as trydimite and cristobalite are more fibrogenic than crystalline silica as quartz. The OSHA PEL for crystalline silica as trydimite and cristobalite is one-half the PEL for crystalline silica (quartz); the ACGIH TLV for crystalline silica as trydimite and cristobalite is one-half the TLV for crystalline silica as quartz.

SECTION 3 – HAZARDS IDENTIFICATION

Emergency Overview

Red Flint Sand and Gravel silica sand is a light buff, tan, and gravel-multicolored with no odor. It is not flammable, combustible, or explosive. It can cause irritation to the eyes. A single exposure will not result in serious adverse health effects. Crystalline silica is not known to be an environmental hazard.

Potential Health Effects

Inhalation:

- a. *Silicosis*: Respirable crystalline silica (quartz) can cause chronic silicosis, a fibrosis (scarring) of the lungs. Silicosis may be progressive; it may lead to disability and death. Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.
- b. *Cancer*: Crystalline silica (quartz) inhaled from occupational sources in sufficient concentrations is classified as carcinogenic to humans. In its Ninth Annual Report on Carcinogens, the National Toxicology Program (NTP) listed crystalline silica as a known human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans indicating a casual relationship between exposure to respirable crystalline silica and increased lung cancer rates in workers exposed to crystalline silica and determined that “crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1).”
- c. *Autoimmune Diseases*: There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders, -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys.
- d. *Tuberculosis*: Silicosis increases the risk of tuberculosis.
- e. *Nephrotoxicity*: There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis is associated with the increased incidence of kidney diseases, including end stage renal disease.

Eye Contact: Crystalline silica (quartz) may cause abrasion of the cornea.

Skin Contact: May cause abrasion to skin.

Ingestion: No known health effect.

Acute Effects: One form of silicosis, Acute Silicosis, can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.

Chronic Effects: The adverse health effects -- lung disease, silicosis, cancer, autoimmune disease, tuberculosis, and nephrotoxicity -- are chronic effects.

Signs and Symptoms of Exposure: There are generally no signs or symptoms of exposure to crystalline silica (quartz). Often, chronic silicosis has no symptoms. The symptoms of chronic silicosis, if present, are shortness of breath, wheezing, cough and sputum production. The symptoms of acute silicosis are the same as those associated with chronic silicosis; additionally, weight loss and fever may also occur. The symptoms of scleroderma include thickening and stiffness of the skin, particularly in the fingers, shortness of breath, difficulty swallowing and joint problems.

Medical Conditions Generally Aggravated by Exposure: The condition of individuals with lung disease (e.g., bronchitis, emphysema, chronic obstructive pulmonary disease) can be aggravated by exposure.

See Section 11, Toxicological Information, for additional detail on potential adverse health effects.

SECTION 4 – FIRST AID PROCEDURES

Symptoms of Overexposure:

Inhaled – Shortness of breath, coughing, reduced pulmonary function. Prolonged inhalation of respirable silica may result in permanent lung damage, silicosis. No specific first aid is necessary since the adverse health effects associated with exposure to crystalline silica (quartz) result from chronic exposures. If there is a gross inhalation of crystalline silica (quartz), remove the person immediately to fresh air, give artificial respiration as needed, seek medical attention as needed.

Swallowed – May cause gastrointestinal discomfort. Give one or two glasses of water. If discomfort persists, see a physician.

First Aid – Emergency procedures.

Eye Contact – Wash with water for at least fifteen (15) minutes. If irritation or redness persists see a physician.

Skin Contact – Wash with soap and water. If irritation persists see a physician.

Ingestion – Not applicable.

Suspected Cancer Agent: Yes **Federal OSHA:** No **NTP:** Yes **IARC:** Yes

NTP: Respirable crystalline silica has been listed in the Sixth Annual Report on Carcinogens.

IARC: Monographs on the Evaluation of the Carcinogenic Risk of Chemical to Humans (vol. 68, 1997) concludes that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the forms of quartz and cristobalite (Group 1) in certain industrial circumstances, but that carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs.

SECTION 5 – FIRE FIGHTING MEASURES

Flashpoint:	None
Upper/Lower Explosive Limit:	Not Combustible
Autoignition Temperature:	None
Unusual Fire and Explosion Habits:	None
Extinguishing Media:	Compatible with all media; use the medium appropriate to the surrounding fire.
Special Fire Fighting Procedures:	None with respect to this product. Fire fighters should always wear self-contained breathing apparatus for fires indoors or in confined areas.
Hazardous Combustion Products:	None

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Wear appropriate personal protective equipment as described in Section 8 of this document. If uncontaminated, collect the material using a method which does not produce dust [High-Efficiency Particulate Air (HEPA) vacuum or thoroughly wetting down the silica]. Place the silica in a covered container appropriate for disposal. If contaminated: a) use appropriate method for the nature of the contamination, b) consider possible toxic or fire hazards associated with the contaminating substances. Dispose of the silica according to federal, state, and local regulations.

SECTION 7 – HANDLING AND STORAGE

This product is **not** to be used for abrasive blasting. Do not breathe dust which may be created during the handling of this product. Do not rely on vision to determine whether respirable silica is present in the air, as it may be present without a visible cloud. Use good housekeeping procedures to prevent the accumulation of silica dust in the workplace. Avoid the creation of respirable dust.

Use adequate ventilation and dust collection equipment. Ensure that the dust collection system is adequate to reduce dust levels to below the appropriate occupational health limit. Maintain and use proper, clean respiratory equipment (see Section 8). Launder clothing that has become dusty. Empty containers (bags, bulk containers, storage tanks, etc.) retain silica residue and must be handled in accordance with the provisions of this Material Safety Data Sheet.

In accordance with the U.S. Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (29 CFR 1910.1200, 1915.99, 1917.28, 1918.90, 1926.59, 1928.21), state, and/or local right-to-know laws and regulations, familiarize your employees with this MSDS and the information contained herein. Warn your employees (and your customers in case of resale) of the potential health risks associated with the use of this product and train them in the appropriate use of personal protective equipment and engineering controls which will reduce their risks of exposure.

See also American Society for Testing and Materials (ASTM) standard practice E 1132-99a, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica."

*****Warn your employees (and your customers - users in case of resale) by posting and other means of the hazards and OSHA precautions to be used. Provide training for your employees about OSHA precautions.**

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Use sufficient local exhaust to reduce the level of respirable crystalline silica to below the PEL. See ACGIH "Industrial Ventilation, A Manual of Recommended Practice" (latest edition).

Gloves: Recommended in situations where abrasion from sand may occur.

Eye: Use safety glasses and protection as appropriate for the task at hand.

Other: Use protective clothing as appropriate for the work environment. Dusty clothing should be laundered before reuse. Make sure to always wash hands after handling the material.

Respiratory Protection: This product is **not** to be used for abrasive blasting. Consult with OSHA regulations and NIOSH recommendations to determine the appropriate respiratory protection during use of this product. Use only NIOSH-approved or MSHA-approved respiratory protection equipment. Avoid breathing dust produced during the use and handling of this product. If the workplace airborne crystalline silica concentration is unknown for a given task, conduct air monitoring to determine the appropriate level of respiratory protection. Consult with a certified industrial hygienist, your insurance risk manager, or the OSHA Consultative Services group for detailed information. Ensure appropriate respirators are worn during and following the task, including clean-up or whenever airborne dust is present, to insure ambient dust levels are below occupational health limits. Provisions should be made for a respiratory protection training program (see 29 CFR 1910.134 – Respiratory Protection for minimum program requirements).

See also ANSI standard Z88.2 (latest revision) "American National Standard for Respiratory Protection," 29 CFR 1910.134 and 1926.103, and 42 CFR 84. Positive pressure supplied air-type respiratory protection recommended.

The following chart specifies the types of respirators, which may provide respiratory protection for crystalline silica.

PARTICULATE CONCENTRATION	MINIMUM RESPIRATORY PROTECTION*
10 X PEL or Less	Any particular respirator, except single-use or quarter-mask respirator. Any fume respirator or high efficiency particulate filter respirator. Any supplied-air respirator. Any self-contained breathing apparatus.
50 x PEL or Less	A high efficiency particulate filter respirator with a full-face piece. Any supplied-air respirator with a full-face piece, helmet, or hood. Any self-contained breathing apparatus with a full-face piece.
500 x PEL or Less	A Type C supplied-air respirator operated in pressure-demand or other positive pressure or continuous-flow mode.
Greater than 500 x PEL or Entry and Escape from Unknown Concentrations	Self-contained breathing apparatus with a full-face piece operated in pressure-demand mode. A combination respirator which includes a Type C supplied-air respirator with a full-face piece operated in pressure-demand or other positive pressure continuous-flow mode and an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive pressure mode.

Component	CAS No.	Percentage (by wt.)	OSHA (TWA)	OSHA (STEL)	ACGIH (TWA)	ACGIH (STEL)	NIOSH (TWA)	NIOSH (STEL)	Unit
Crystalline Silica (Quartz)	14808-60-7	87.0-99.9%	$\frac{10}{\% \text{ SiO}_2+2}$	None	.05	None	.05	None	mg/m ³

Crystalline silica is listed by the Governor of the State of California, under Proposition 65, as requiring the following warning: "Detectable amounts of chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm may be found in this product."

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light buff, tan, gravel-multicolored
Odor:	None
Physical State:	Granular Solid
pH:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density:	10mm @ 3146°F
Boiling Point or Range, °F:	4046°F (Quartz)
Melting Point or Range, °F:	3110°F (Quartz)
Solubility In Water:	Insoluble
Specific Gravity:	2.65 (Quartz)
Evaporation Rate:	None

SECTION 10 – STABILITY AND REACTIVITY

Stability:	Stable.
Materials to Avoid:	Strong Oxidizing Agents, such as fluorine, chlorine trifluoride, hydrogen fluoride, and oxygen trifluoride.
Hazardous Decomposition Products:	Silica will dissolve in hydrofluoric acid and produce a corrosive gas – silicon tetrafluoride.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	None.

SECTION 11 – TOXICOLOGICAL INFORMATION

A. SILICOSIS

The major concern is silicosis (lung disease), caused by the inhalation and retention of respirable crystalline silica dust. Silicosis can exist in several forms, chronic (or ordinary), accelerated, or acute.

Chronic or Ordinary Silicosis is the most common form of silicosis, and can occur after many years of exposure to levels above the occupational exposure limits for airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis.

Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present, are shortness of breath, wheezing, cough and sputum production. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease (cor pulmonale) secondary to the lung disease. Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of the initial exposure. The progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that the lung lesions appear earlier and the progression is more rapid. Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.

B. CANCER

IARC - The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz and cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans (Group 1)*." The IARC evaluation noted that not all industrial circumstances studied showed evidence of carcinogenicity. The monograph also stated that "[C]arcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates..." (1997).

SECTION 11 – TOXICOLOGICAL INFORMATION Continued...

NTP - The National Toxicology Program, in its Ninth Annual Report on Carcinogens, concluded that respirable crystalline silica is known to be a human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to respirable crystalline silica and increased lung cancer rates in workers exposed to crystalline silica dust.

There have been many articles published on the carcinogenicity of crystalline silica, which the reader should consult for additional information; the following are examples of recently published articles: (1) "Lung cancer among industrial sand workers exposed to crystalline silica", Am J Epidemiol, Volume 153, pp. 695-703 (2001); (2) "Crystalline Silica and the risk of lung cancer in the potteries", Occup. Environ. Med., Volume 55, pp. 779-785 (1998); (3) "Is Silicosis Required for Silica-Associated Lung Cancer," American Journal of Industrial Medicine, Volume 37, pp. 252- 259 (2000); (4) " Silica, Silicosis, and Lung Cancer: A Risk Assessment", American Journal of Industrial Medicine, Volume 38, pp. 8-18 (2000); (5) "Silica, Silicosis, and Lung Cancer: A Response to a Recent Working Group Report", Journal of Occupational and Environmental Medicine, Volume 42, pp. 704-720 (2000).

C. AUTOIMMUNE DISEASES

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders, -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. For a review of the subject, the following may be consulted: "Occupational Exposure to Crystalline Silica and Autoimmune Disease", Environmental Health Perspectives, Volume 107, Supplement 5, pp. 793-802 (1999); "Occupational Scleroderma", Current Opinion in Rheumatology, Volume 11, pp. 490-494 (1999); "Connective tissue disease and silicosis", Am J Ind Med, Volume 35, pp. 375-381 (1999).

D. TUBERCULOSIS

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to persons with tuberculosis. The following may be consulted for further information: Occupational Lung Disorders, Third Edition, Chapter 12, entitled "Silicosis and Related Diseases", Parkes, W. Raymond (1994); "Risk of pulmonary tuberculosis relative to silicosis and exposure to silica dust in South African gold miners," Occup Environ Med., Volume 55, pp.496- 502 (1998); "Occupational risk factors for developing tuberculosis", Am J Ind Med, Volume 30, pp. 148-154 (1996).

E. KIDNEY DISEASE

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis is associated with the increased incidence of kidney diseases, including end stage renal disease. For additional information on the subject, the following may be consulted: "Kidney Disease and Silicosis", Nephron, Volume 85, pp. 14-19 (2000); "End stage renal disease among ceramic workers exposed to silica", Occup Environ Med, Volume 56, pp. 559-561 (1999); "Kidney disease and arthritis in a cohort study of workers exposed to silica", Epidemiology, Volume 12, pp. 405-412 (2001).

SECTION 12 – ECOLOGICAL INFORMATION

Crystalline silica (quartz) is not known to be ecotoxic; i.e., there is no data that suggests that crystalline silica (quartz) is toxic to birds, fish, invertebrates, microorganisms, or plants. For additional information on crystalline silica (quartz), see Section 9 (physical and chemical properties) and Section 10 (stability and reactivity) of this MSDS.

SECTION 13 – DISPOSAL CONSIDERATIONS

- General:** Crystalline silica may be landfilled. Material should be placed in covered containers to minimize generation of airborne dust.
- RCRA:** Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

The above information applies to Red Flint Sand and Gravel silica sand only as sold. The product may be contaminated during use, and it is the responsibility of the user to assess the appropriate disposal method in this situation.

SECTION 14 – TRANSPORT INFORMATION

Crystalline silica (quartz) is not a hazardous material for purposes of transportation under the U. S. Department of Transportation Table of Hazardous Materials, 49 CFR §172.101.

SECTION 15 – REGULATORY INFORMATION

UNITED STATES (FEDERAL AND STATE)

TSCA No.: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7.

RCRA: Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

SARA 311/312: Hazard categories for SARA Section 311/312 Reporting: Chronic Health

CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

Emergency Planning and Community Right to Know Act: Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.

Clean Air Act: Crystalline silica (quartz) mined and processed by Red Flint Sand and Gravel was not processed with or does not contain any Class I or Class II ozone depleting substances.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b) (3) (xxvi).

NTP: Respirable crystalline silica (quartz) is classified as a known human carcinogen.

OSHA Carcinogen: Crystalline silica (quartz) is not listed.

California Proposition 65: Crystalline silica (quartz) is classified as a substance known to the state of California to be a carcinogen.

CANADA

Domestic Substances List: Red Flint Sand and Gravel products, as naturally occurring substances, are on the Canadian DSL.

WHMIS Classification: D-2A

OTHER

EINECS No.: 231-545-4

EEC Label (Risk/Safety Phrases): R 48/20, R 40/20, S22, S38

IARC: Crystalline silica (quartz) is classified in IARC Group 1. National, state, provincial or local emergency planning, community right to know or other laws, regulations or ordinances may be applicable--consult applicable national, state, provincial or local laws.

Japan MITI: All of the components of this product are existing chemical substances as defined in the Chemical Substance Control Law.

SECTION 16 – OTHER INFORMATION

More information on the effects of crystalline silica exposure may be obtained from the Occupational Safety and Health Administration (OSHA) (phone number: 1-800-321-OSHA; website: <http://www.osha.gov>) or from the National Institute for Occupational Safety and Health (NIOSH) (phone number: 1-800-35-NIOSH; website: <http://www.cdc.gov/niosh>).

The data in this Material Safety Data Sheet (MSDS) relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information set forth herein is based on technical data the Red Flint Sand and Gravel believes reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside the control of Red Flint Sand and Gravel, no warranties, expressed or implied, are made and no liability is assumed in connection with any use of this information. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 1 of 6

Date-Issued: 09/27/1997

MSDS Ref. No: SREG23743

Date-Revised: 12/16/1997

Revision No: 2

Regal Super Floc

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Regal Super Floc
GENERAL USE: Water clarifier
CHEMICAL FAMILY: Mixture

MANUFACTURER

Alliance Packaging, Inc.
109 Northpark Blvd., Suite 400
Covington, LA 70433-5001
Customer SERVICE: (800) 959-7946

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (Transportation) (800) 424-9300
Medical (800) 255-3924

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS#</u>	<u>Wt.%</u>
Cationic polymer blend (Proprietary)		~29

COMMENTS:

Ingredients listed in this section have been determined to be hazardous as defined in 29 CFR 1910.1200. Materials determined to be health hazards are listed if they comprise 1% of more of the composition. Materials identified as carcinogens are listed if they comprise 0.1% of more of the composition. Information on proprietary materials is available as provided in 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE:
Purple liquid

IMMEDIATE CONCERNS:

CAUTION: Irritant. Causes eye irritation. Harmful if swallowed. Avoid contact with eyes, skin or clothing. Wear goggles or safety glasses and rubber gloves when handling this product. May be irritating to nose and throat. Avoid breathing vapors. If product gets on clothing, remove and wash before reuse. Do not mix with other chemicals.

POTENTIAL HEALTH EFFECTS

EYES:

CAUTION: Causes eye irritation. Avoid contact with eyes.

SKIN:

The product is not expected to cause skin irritation upon contact or to be hazardous through dermal absorption. No cases of skin sensitization have been reported.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 2 of 6

Date-Issued: 09/27/1997

MSDS Ref. No: SREG23743

Date-Revised: 12/16/1997

Revision No: 2

Regal Super Floc

INGESTION:

Harmful if swallowed.

INHALATION:

May be irritating to nose and throat. Avoid breathing vapors.

CHRONIC:

There are no known chronic hazards.

ROUTES OF ENTRY:

Eye Contact, Inhalation, Ingestion.

4. FIRST AID MEASURES

EYES:

If contact with eyes occurs: Immediately flush with cold water for at least 15 minutes. Then get immediate medical attention.

SKIN:

If on skin: Wash with plenty of soap and water. Get medical attention if irritation persists.

INGESTION:

If swallowed: Drink large amounts of water. Do not induce vomiting. Avoid alcohol. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Call a physician or poison control center immediately.

INHALATION:

If inhaled: Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If not breathing, give artificial respiration. Call a physician immediately.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: None to 212 F

GENERAL HAZARD:

There are no unusual fire and explosion hazards known.

EXTINGUISHING MEDIA:

Water fog, carbon dioxide, dry chemical, or foam.

FIRE FIGHTING EQUIPMENT:

Firefighters should wear full protective clothing and self contained breathing apparatus (SCBA). Thoroughly decontaminate fire fighting equipment including all fire fighting wearing apparel after the incident.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 3 of 6
Date-Issued: 09/27/1997
MSDS Ref. No: SREG23743
Date-Revised: 12/16/1997
Revision No: 2

Regal Super Floc

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL:

For small spills, dilute with copious amounts of water and flush to sewer.

7. HANDLING AND STORAGE

GENERAL PROCEDURES:

Avoid contact with eyes, skin or clothing. Avoid breathing vapors.

HANDLING:

Mix only with water. Never add water to product. Always add product to large quantities of water. Do not mix with other chemicals. Use clean dry utensils. Do not add this product to any dispensing device containing remnants of any other product. Such use may cause a violent reaction leading to fire or explosion.

STORAGE:

Keep this product in its original container when not in use. Store in cool, dry, well-ventilated area. Keep this product and all other chemicals out of children's reach.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		SUPPLIER OEL	
		ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
Cationic polymer blend (Proprietary)	TWA	N/E ^[1]		N/E			

OSHA TABLE COMMENTS:

1. N/E = Not Established

ENGINEERING CONTROLS:

General room ventilation plus local exhaust should be used to minimize exposure to vapors.

PERSONAL PROTECTIVE EQUIPMENT:

EYES AND FACE:

Wear goggles or safety glasses with side shields when handling this product.

SKIN:

Wear rubber gloves when handling this product. Avoid contact with skin.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 4 of 6
Date-Issued: 09/27/1997
MSDS Ref. No: SREG23743
Date-Revised: 12/16/1997
Revision No: 2

Regal Super Floc

RESPIRATORY:

A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

WORK HYGIENIC PRACTICES:

If product gets on clothing, remove and wash before reuse.

OTHER USE PRECAUTIONS:

Facilities storing or utilizing this material should be equipped with an eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Odorless

APPEARANCE: Clear

COLOR: Purple

pH: 3.5 to 4.0

SOLUBILITY IN WATER: Miscible in Water

SPECIFIC GRAVITY: 1.18 g/ml

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:

High temperature. Poor ventilation. Contamination.

STABILITY:

This product is stable under normal conditions.

POLYMERIZATION:

Hazardous polymerization will not occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS:

None known.

INCOMPATIBLE MATERIALS:

Other swimming pool/spa chemicals in their concentrated forms. Strong oxidizing agents. This material may react slowly with iron, copper or aluminum resulting in corrosion and/or product degradation.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:

This product is an eye irritant.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 5 of 6
Date-Issued: 09/27/1997
MSDS Ref. No: SREG23743
Date-Revised: 12/16/1997
Revision No: 2

Regal Super Flocc

SKIN EFFECTS:

Non-irritating to skin.

CARCINOGENICITY:

This product is not listed as a carcinogen by IARC.
This product is not listed as a carcinogen by NTP.
This product is not listed as a carcinogen by OSHA.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

This product may be toxic to fish and aquatic organisms. Keep product from entering waterways and watersheds.

13. DISPOSAL CONSIDERATIONS

PRODUCT DISPOSAL:

Wash down drain with excess water. Dispose in accordance with federal, state and local regulations.

EMPTY CONTAINER:

Do not reuse container. Rinse thoroughly before discarding in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Corrosive Liquids, N.O.S. (Contains hydroxychloride complex)

PRIMARY HAZARD CLASS/DIVISION: 8

UN/NA NUMBER: 1760

PACKING GROUP: III

OTHER SHIPPING INFORMATION: Limited Quantity

15. REGULATORY INFORMATION

UNITED STATES

OSHA HAZARD COMM. RULE:

Product is hazardous by definition of the Hazardous Communication Standard.

FIFRA (FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT):

This product is not a registered pesticide.

MATERIAL SAFETY DATA SHEET

MSDS

Page: 6 of 6
Date-Issued: 09/27/1997
MSDS Ref. No: SREG23743
Date-Revised: 12/16/1997
Revision No: 2

Regal Super Floc

16. OTHER INFORMATION

REVISION SUMMARY

Revision #: 2

This MSDS replaces the November 19, 1997 MSDS. Any changes in information are as follows:
In Section 14
DOT Proper Shipping Name

NFPA CODES

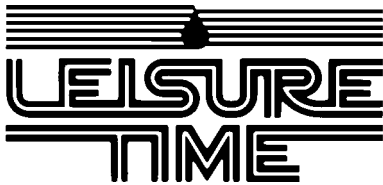
HEALTH: 1 FIRE: 0 REACTIVITY: 0

HMIS CODES

HEALTH: 1 FIRE: 0 REACTIVITY: 0 PROTECTION: B

MANUFACTURER DISCLAIMER:

IMPORTANT: This information is given without a warranty or guarantee. No suggestions for use are intended or shall be construed as a recommendation to infringe any existing patents or violate any Federal, State or local laws. Safe handling and use is the responsibility of the customer. Read the label before using this product. This information is true and accurate to the best of our knowledge.



MATERIAL SAFETY DATA SHEET

Leisure Time Spa Foam Down

1. Product And Company Identification

Supplier

Leisure Time
1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004 United States

Telephone Number: (770) 521-5999

FAX Number: (770) 521-5959

Web Site: www.poolspacare.com

Manufacturer

Advantis Technologies Inc.
1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004 United States

Telephone Number: (770) 521-5999

FAX Number: (770) 521-5959

Web Site: www.poolspacare.com

Supplier Emergency Contacts & Phone Number

CHEMTREC - DAY OR NIGHT: (800) 424-9300

Manufacturer Emergency Contacts & Phone Number

CHEMTREC - DAY OR NIGHT: (800) 424-9300

Issue Date: 04/18/2001

Product Name: Leisure Time Spa Foam Down

CAS Number: Not Established

Chemical Family: Silicone Emulsion

Chemical Formula: Proprietary

MSDS Number: 25

2. Composition/Information On Ingredients

Ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200. Materials determined to be health hazards are listed if they comprise 1% or more of the composition. Materials identified as carcinogens are listed if they comprise 0.1% or more of the composition. Information on proprietary materials is available in 29CFR 1910.1200(i)(1).

3. Hazards Identification

Primary Routes(s) Of Entry

Skin Contact

Eye Hazards

Causes eye irritation.

Skin Hazards

May cause skin irritation.

Ingestion Hazards

May be harmful if swallowed.

Inhalation Hazards

None normally associated with this product

First Aid (Pictograms)



4. First Aid Measures

No Data Available...

MATERIAL SAFETY DATA SHEET

Leisure Time Spa Foam Down

4. First Aid Measures - Continued

Eye

In case of contact, hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes.

Skin

In case of contact, immediately flush skin with soap and plenty of water.

Ingestion

If swallowed, induce vomiting immediately. Call a physician or a poison control center immediately.

Inhalation

If inhaled, remove to fresh air. If breathing is difficult, give oxygen.

Fire Fighting (Pictograms)



5. Fire Fighting Measures

Flash Point: n/a °F

Fire And Explosion Hazards

Burning causes oxides of carbon and silicone

Extinguishing Media

Use the appropriate extinguishing media for the surrounding fire.

Fire Fighting Instructions

Firefighters should wear self-contained breathing apparatus and full protective gear.

6. Accidental Release Measures

Contain and/or absorb spill with inert material (e.g. sand, vermiculite). Collect and dispose. Flush spill area with water.

7. Handling And Storage

Handling And Storage Precautions

Keep out of reach of children. Store material in a cool and dry place.

Work/Hygienic Practices

Use safe chemical handling procedures suitable for the hazards presented by this material.

Protective Clothing (Pictograms)



8. Exposure Controls/Personal Protection

Engineering Controls

Local exhaust acceptable. Special exhaust not required

Eye/Face Protection

Safety glasses with side shields or goggles.

Skin Protection

Chemical-resistant gloves.

MATERIAL SAFETY DATA SHEET

Leisure Time Spa Foam Down

8. Exposure Controls/Personal Protection - Continued

Respiratory Protection

None normally required.

9. Physical And Chemical Properties

Appearance

Creamy white liquid

Odor

Mild

Chemical Type: Mixture

Physical State: Liquid

Melting Point: n/a °F

Boiling Point: 212 °F

Specific Gravity: 1.0

Percent Volitales: NOT ESTABLISHED

Vapor Pressure: NOT ESTABLISHED

Vapor Density: NOT ESTABLISHED

pH Factor: 6-7

Solubility: SOLUBLE IN WATER

Viscosity: NOT ESTABLISHED

Evaporation Rate: NOT ESTABLISHED

10. Stability And Reactivity

Stability: Stable

Hazardous Polymerization: Will not occur

Incompatible Materials

Strong Oxidants

Hazardous Decomposition Products

Burning causes oxides of carbon and silicone

11. Toxicological Information

No Data Available...

12. Ecological Information

No Data Available...

13. Disposal Considerations

Dispose in accordance with applicable federal, state and local government regulations.

14. Transport Information

Proper Shipping Name

NOT REGULATED

Hazard Class

NOT REGULATED

DOT Identification Number

NONE

MATERIAL SAFETY DATA SHEET

Leisure Time Spa Foam Down

14. Transport Information - Continued

DOT Shipping Label

NOT ASSIGNED

15. Regulatory Information

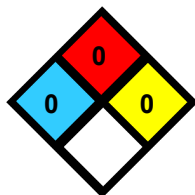
Canadian Regulatory Information

Class D, Div 2b - Poisonous or Infectious Material: other toxic effects

WHMIS - Canada (Pictograms)



NFPA



HMIS

HEALTH	0
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	B

16. Other Information

Revision/Preparer Information

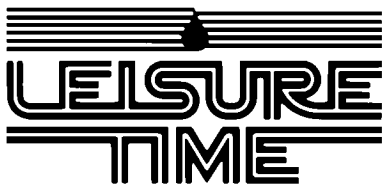
MSDS Preparer: JHW3

Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purposes(s).

Leisure Time

Printed Using MSDS Generator™ 2000



MATERIAL SAFETY DATA SHEET

Leisure Time Sodium Bromide

1. Product And Company Identification			
Supplier Leisure Time 1400 Bluegrass Lakes Parkway Alpharetta, GA 30004 United States Telephone Number: (770) 521-5999 FAX Number: (770) 521-5959 Web Site: www.poolspacare.com		Manufacturer Advantis Technologies Inc. 1400 Bluegrass Lakes Parkway Alpharetta, GA 30004 United States Telephone Number: (770) 521-5999 FAX Number: (770) 521-5959 Web Site: www.poolspacare.com	
Supplier Emergency Contacts & Phone Number CHEMTREC - DAY OR NIGHT: (800) 424-9300		Manufacturer Emergency Contacts & Phone Number CHEMTREC - DAY OR NIGHT: (800) 424-9300	
Issue Date: 08/20/2002 Product Name: Leisure Time Sodium Bromide CAS Number: Not Established Chemical Family: Bromide Salt Chemical Formula: Proprietary Mixture MSDS Number: 45			
2. Composition/Information On Ingredients			
Ingredient Name		CAS Number	Percent Of Total Weight
SODIUMBROMIDE		7647-15-6	
Ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200. Materials determined to be health hazards are listed if they comprise 1% or more of the composition. Materials identified as carcinogens are listed if they comprise 0.1% or more of the composition. Information on proprietary materials is available in 29CFR 1910.1200(i)(1).			
3. Hazards Identification			
Primary Routes(s) Of Entry Skin contact.			
Eye Hazards May cause eye irritation.			
Skin Hazards May cause skin irritation.			
Ingestion Hazards Not expected to be acutely toxic.			
Inhalation Hazards Can cause respiratory tract irritation.			
Signs And Symptoms Irritation of eyes, skin, and/or respiratory passages.			

MATERIAL SAFETY DATA SHEET

Leisure Time Sodium Bromide

First Aid (Pictograms)



4. First Aid Measures

Eye

In case of contact, hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin

In case of contact, immediately flush skin with soap and plenty of water.

Ingestion

Drink large amounts of water. Contact a physician or poison control.

Inhalation

If inhaled, remove to fresh air.

Fire Fighting (Pictograms)



5. Fire Fighting Measures

Flash Point: n/a °F

Extinguishing Media

Use the appropriate extinguishing media for the surrounding fire.

Fire Fighting Instructions

Firefighters should wear self-contained breathing apparatus and full protective gear.

6. Accidental Release Measures

Clean up spill immediately. Contain and/or absorb spill with inert material (e.g. sand, vermiculite). Flush spill area with water. Use appropriate containers to avoid environmental contamination.

7. Handling And Storage

Handling Precautions

Do not get in eyes or on skin.

Storage Precautions

Do not reuse container. Store in a cool dry place. Store away from strong acids, oxidizing agents, bromine trifluoride and salts of heavy metals. Keep away from children.

Work/Hygienic Practices

Use safe chemical handling procedures suitable for the hazards presented by this material.

Protective Clothing (Pictograms)



MATERIAL SAFETY DATA SHEET

Leisure Time Sodium Bromide

8. Exposure Controls/Personal Protection

Engineering Controls

Local exhaust acceptable. Special exhaust not required

Eye/Face Protection

Safety glasses with side shields or goggles.

Skin Protection

Chemical-resistant gloves.

Respiratory Protection

General room ventilation is normally adequate.

9. Physical And Chemical Properties

Appearance

White crystalline solid

Odor

None

Chemical Type: Mixture

Physical State: Solid

Melting Point: 755 °C

Boiling Point: 1390 °C

Specific Gravity: 3.21

Molecular Weight: NOT DETERMINED

Percent Volatiles: NOT DETERMINED

Vapor Pressure: 1mm hg @ 806C

Solubility: 95g/100g @25C

Evaporation Rate: n/a

10. Stability And Reactivity

Stability: STABLE

Hazardous Polymerization: WILL NOT OCCUR

Incompatible Materials

Acids, oxidizers, bromine trifluoride and salts of heavy metals

Hazardous Decomposition Products

Bromine gas

11. Toxicological Information

Skin Effects

Dermal LD50 (Rabbit) >2g/kg

Acute Oral Effects

LD50 mg/kg Rat >= 4.2gr/kg

12. Ecological Information

No Data Available...

13. Disposal Considerations

Refer to applicable local, state and federal regulations as well as industry standards.

14. Transport Information

No Data Available...

MATERIAL SAFETY DATA SHEET

Leisure Time Sodium Bromide

14. Transport Information - Continued

Proper Shipping Name

NOT REGULATED

Hazard Class

NOT REGULATED

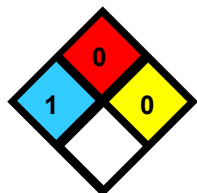
DOT Identification Number

NONE

15. Regulatory Information

Canadian Regulatory Information

Class D, Div 2b - Poisonous or Infectious Material: other toxic effects,

WHMIS - Canada (Pictograms)**NFPA****HMIS**

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	B

16. Other Information

Revision/Preparer Information

MSDS Preparer: JHW

This MSDS Supersedes A Previous MSDS Dated: 07/26/2000

Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purposes(s).

Leisure Time

Printed Using MSDS Generator™ 2000



MATERIAL SAFETY DATA SHEET

Leisure Time Brom Tabs

1. Product And Company Identification	
Supplier Leisure Time 1400 Bluegrass Lakes Parkway Alpharetta, GA 30004 United States Telephone Number: (770) 521-5999 FAX Number: (770) 521-5959 Web Site: www.poolspacare.com	Manufacturer Advantis Technologies, Inc. 1400 Bluegrass Lakes Parkway Alpharetta, GA 30004 United States Telephone Number: (770) 521-5999 FAX Number: (770) 521-5959 Web Site: www.poolspacare.com
Supplier Emergency Contacts & Phone Number CHEMTREC - DAY OR NIGHT: (800) 424-9300	Manufacturer Emergency Contacts & Phone Number CHEMTREC - DAY OR NIGHT: (800) 424-9300
Issue Date: 07/24/2006 Product Name: Leisure Time Brom Tabs Chemical Name: Bromine Tablets BCDMH CAS Number: Not Established Chemical Family: Brominating disinfecting tablets, Active Halogen Chemical Formula: $\text{BrCl}(\text{CH}_3)_2 \text{C}_3\text{N}_2\text{O}_2$ MSDS Number: 50	

2. Composition/Information On Ingredients			
Ingredient Name	CAS Number		Percent Of Total Weight
1,3 DICHLORO-5, 5-DIMETHYL-HYDANTOIN	118-52-5		
1,3 DICHLORO-5, ETHYL-5-METHYL HYDANTOIN	89415-87-2		
1-BROMO-3-CHLORO-5, 5-DIMETHYLHYDANTOIN	16079-88-2		
SODIUMCHLORIDE	7647-14-5		
Ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200. Materials determined to be health hazards are listed if they comprise 1% or more of the composition. Materials identified as carcinogens are listed if they comprise 0.1% or more of the composition. Information on proprietary materials is available in 29CFR 1910.1200(i)(1).			

Hazards Identification (Pictograms) 

3. Hazards Identification Primary Routes(s) Of Entry Skin Contact, Inhalation Eye Hazards Causes irreversible eye damage. Skin Hazards May cause severe skin irritation.
--

MATERIAL SAFETY DATA SHEET

Leisure Time Brom Tabs

3. Hazards Identification - Continued

Ingestion Hazards

Aspiration hazard if swallowed. Can enter lungs and cause damage.

Inhalation Hazards

Causes severe respiratory tract irritation.

Signs And Symptoms

Irritation of Skin, Eyes and Respiratory Passages

Conditions Aggravated By Exposure

None Known

First Aid (Pictograms)



4. First Aid Measures

Eye

Flush eyes with large amounts of running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eye and lids with water. Get medical attention. If physician not available, flush for additional 15 minutes and then transport victim to medical care.

Skin

Immediately wipe away excess material with a dry cloth while removing contaminated clothing and shoes. Under safety shower, wash affected areas thoroughly with large amounts of water, and soap if available, for at least 15 minutes. Get immediate medical attention. Discard or decontaminate clothing and shoes.

Ingestion

If swallowed, immediately give 3-4 glasses of water. DO NOT INDUCE VOMITING. If vomiting occurs, give fluids again. Get immediate medical attention. Have physician determine if patient's condition allows induction of vomiting or evacuation of stomach. Do not give anything by mouth to an unconscious or convulsing person.

Inhalation

Remove from area to fresh air. If not breathing, clear airway and start artificial respiration. If victim is having trouble breathing, give supplemental oxygen, if available. Get immediate medical attention.

Fire Fighting (Pictograms)



5. Fire Fighting Measures

Flash Point: n/a °F

Flammability Class: Not Flammable

Fire And Explosion Hazards

Material is combustible in a fire and produces gases of hydrogen bromide, bromine gas-nitrogen oxides, and hydrogen chloride.

Extinguishing Media

Use CO2 (Carbon Dioxide), dry chemical, or water spray

Fire Fighting Instructions

Firefighters should wear self-contained breathing apparatus and full protective gear.

MATERIAL SAFETY DATA SHEET

Leisure Time Brom Tabs

6. Accidental Release Measures

Clean up spill immediately. Carefully sweep up material and place in a compatible container for reclamation. Use appropriate containers to avoid environmental contamination.

7. Handling And Storage

Handling And Storage Precautions

Keep out of reach of children. Store material in a cool and dry place away from oxidizers. Use only with adequate ventilation. Avoid breathing dust.

Handling Precautions

Avoid breathing dust or vapor. Avoid contact with skin and clothing. Avoid contact with eyes. Avoid creating dust. Long sleeves and pants required to prevent prolonged or repeated skin contact.

Storage Precautions

Do not reuse container. Store in a cool dry place. Store away from Oxidizing agents.

Work/Hygienic Practices

Use safe chemical handling procedures suitable for the hazards presented by this material.

Protective Clothing (Pictograms)



8. Exposure Controls/Personal Protection

Engineering Controls

Use with adequate general and local exhaust ventilation.

Eye/Face Protection

Safety glasses with side shields or goggles.

Skin Protection

Chemical-resistant gloves.

Respiratory Protection

General room ventilation is normally adequate. The level of respiratory protection needed should be based on the required protection factor after evaluating chemical exposures using appropriate industrial hygiene monitoring and/or OSHA guidance.

9. Physical And Chemical Properties

Appearance

White tablet

Odor

Halogen

Chemical Type: Mixture

Physical State: Solid

Melting Point: DECOMPOSES °F

Boiling Point: n/a °F

Specific Gravity: 1.8-2.0

Molecular Weight: NOT DETERMINED

Percent Volatiles: NOT DETERMINED

Vapor Pressure: NOT APPLICABLE

Vapor Density: NOT VOLATILE

Solubility: 0.2% @ 25C

MATERIAL SAFETY DATA SHEET

Leisure Time Brom Tabs

9. Physical And Chemical Properties - Continued

Odor - Continued

Evaporation Rate: n/a

10. Stability And Reactivity

Stability: STABLE

Hazardous Polymerization: WILL NOT OCCUR

Incompatible Materials

Acids/Bases and Oxidizers/Reducing agents Organic chemicals

Hazardous Decomposition Products

Bromine gas, Hydrogen Bromide, Hydrogen Chloride

11. Toxicological Information

Eye Effects

eye irritation (rabbit) : Severe irritant and corrosive

Skin Effects

skin irritation (rabbit - Draize test) : Corrosive to both abraded and unabraded skin

skin corrosivity (rabbit - US DOT test) : Not corrosive

Acute Oral Effects

oral LD50 (rat) : 468-477 mg/kg

Chronic/Carcinogenicity

Direct skin and/or eye contact can result in severe skin and eye irritation that may produce irreversable damage.

Inhalation can cause severe irritation of nose, throat, and lungs

12. Ecological Information

Acute Toxicity - Fish And Invertebrates

LC50 (rainbow trout - 96 hours) : 0.5 mg/L

LC50 (bluegill sunfish - 96 hours) : 1.2 mg/L

LC50 (Daphnia magna - 48 hours) : 0.4 mg/L

LC50 (mysid shrimp - 96 hours) : 0.93 mg/L

LC50 (sheepshead minnow - 96 hours) : 1.4 mg/L (as Br₂)

LC50 (eastern oysters - 96 hours) : 0.84 mg/L (as Br₂)

13. Disposal Considerations

Refer to applicable local, state and federal regulations as well as industry standards.

14. Transport Information

Proper Shipping Name

OXIDIZING SOLID, N.O.S. (BROMO CHLORO-5, 5-DIMETHYLHYDANTOIN)

Hazard Class

5.1, PGII (<= 1kg Consumer Commodity ORM-D)

DOT Identification Number

UN1479

MATERIAL SAFETY DATA SHEET

Leisure Time Brom Tabs

DOT (Pictograms)



15. Regulatory Information

Canadian Regulatory Information

Class C - Oxidizing Material

Class D, Div 2b - Poisonous or Infectious Material: other toxic effects,

WHMIS - Canada (Pictograms)



NFPA



HMIS

HEALTH	3
FLAMMABILITY	1
REACTIVITY	1
PERSONAL PROTECTION	B

16. Other Information

Revision/Preparer Information

MSDS Preparer: JHW

This MSDS Supersedes A Previous MSDS Dated: 07/26/2000

Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purposes(s).

Leisure Time

Printed Using MSDS Generator™ 2000



Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name/Trade Name	10% Bleach
Manufacturer:	KIK CUSTOM PRODUCTS 2921 Corder Street Houston Texas, 77054
Contact Number:	Tel: 905-660-0444
24 Hour Emergency Contact:	Tel: 1-800-255-3924
Prepared By:	KIK CUSTOM PRODUCTS Laboratory
Replaces Date:	August 16, 2006
Date Last Revised:	November 10, 2006

Section 2 Hazardous Ingredients

Name	%	CAS#	LD50/LC50
Sodium Hypochlorite	9 – 13	007681-52-9	N Av./N Av
Sodium Hydroxide	max 1.5%	001310-73-2	N Av./N Av

Section 3 Physical Data

State	Liquid	PH	12.3 – 12.9
Appearance	Clear Colorless	% Volatile	80% Approx.
Odour	Typical chlorine bleach	Boiling Point	105°C
Specific Gravity	1.15 min	Vapour Pressure	22mm Hg @ 20C
Solubility	100%		

Section 4 Fire & Explosion

Flammable:	YES	NO X
Means of Extinction:	Water, Carbon Dioxide, Dry Chemical or Foam	
Special Procedures:	Fire fighters should wear self-contained breathing apparatus.	
Flash Point: & Method:	Not Applicable	
Hazardous Combustion Products:	Chlorine Gas.	

Section 5 Reactivity Data

Chemical Stability:	YES	X	NO
Conditions:	Temperature above 40 °C, sunlight and metals,		
Incompatibility:	YES	X	NO
What Substances:	Acids, ammonia, urea, metals & oxidizers.		
Reactivity / Conditions:	Not Applicable		
Hazardous Decomposition Products:	Chlorine gas released by contact with acids. Contact with ammonia or urea produces nitrogen gas and chloramines. Oxygen is released on contact with metals.		



Section 6 Toxicological Properties

Route of Entry

Skin Contact	X	Skin Absorption	Eye Contact	X
Inhalation Acute	X	Inhalation Chronic	Ingestion	X

Effects of Acute Exposure: Inhalation of vapours will irritate breathing passages and may cause breathing difficulty. CORROSIVE will cause severe irritation to eyes and skin. May cause permanent damage if not treated properly. Ingestion will cause burning sensation in mouth, throat and stomach. Will cause membrane irritation and pain and inflammation to digestive tract, Could cause vomiting and shock

Effects of chronic exposure: None Known

Carcinogenicity Reproductive Effects, Teratogenicity, and Mutagenicity: no known effects

Section 7 Preventative Measures

PROTECTIVE EQUIPMENT

Gloves: wear PVC or rubber gloves

Eyes: Eye goggles or shields

Respiratory: Not normally required
spills

Footwear: regular footwear but rubber boots for

Clothing: wear a plastic jacket or apron; have safety shower and eye wash fountain available close by.

Leak and Spill: Leaking product may be transferred to clean plastic containers. Dilute small spills with water and add sodium sulfite or sodium metabisulfite and flush to sewer. Avoid runoff to ground water, surface water and sanitary sewers For major spills contain the spill and call supplier

Waste Disposal: Dispose of in accordance with local, state and federal regulations.

Storage Requirements: Use polyethylene, polypropylene, FRP or PVC containers. Store product at -10C to 30C and away from sunlight or heat. Keep containers closed when not in use and keep out of reach of children.

Section 8 First Aid Measures

Skin: Immediately wash with soap and water call physician if irritation develops

Eyes: Flush eyes with cool running water, holding eyelids apart to ensure thorough rinsing for 15 minutes. Remove contact lenses. See a doctor immediately.

Inhalation: Move to fresh air and restore breathing, if required. If symptoms persist call physician

Ingestion: DO NOT INDUCE VOMITING! Rinse mouth with water, then drink large amounts of water. Do not give anything by mouth to a convulsing or unconscious person. See a doctor immediately.

General Advice: If irritation persists see a doctor immediately.

Section 9 Regulatory Information

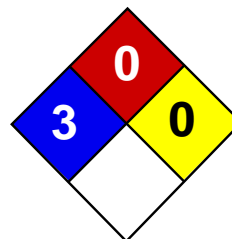
WHMIS Rating: Health Hazard	3
Fire Hazard	0
Reactivity	2

DOT: Hypochlorite Solution 8, UN 1791 III

As the handling and use of products under user's conditions are beyond our control, no warranty, expressed or implied, is made concerning this product. The information contained herein is offered only as a guide to the handling of this specific material and is not intended to be all-inclusive in the manner and conditions of use and handling. The user assumes all risks of use or handling, whether or not in accordance with any directions or suggestions of the



manufacturer. Manufacturer shall not be liable to purchaser or any other person for loss or damages directly or indirectly arising from the use of our product.



Health	3
Fire	0
Reactivity	0
Personal Protection	J

Material Safety Data Sheet

Oxone, Monopersulfate Compound MSDS

Section 1: Chemical Product and Company Identification

Product Name: Oxone, Monopersulfate Compound

Catalog Codes: SLO1009

CAS#: 37222-66-5 or 70693-62-8

RTECS: Not available.

TSCA: TSCA 8(b) inventory: Oxone, Monopersulfate Compound

CI#: Not available.

Synonym: Oxone (A Dupont Registered Trademark); Potassium Peroxymonosulfate; Potassium monopersulfate. Potassium peroxymonosulfate, KHSO₅, commonly known as potassium monopersulfate is the active ingredient. It is present as a component of a triple salt with the chemical formula shown below. Other components include: Potassium bisulfate, Potassium Sulfate, Potassium Peroxydisulfate and Magnesium Carbonate.

Chemical Name: Oxone, Monopersulfate Compound

Chemical Formula: 2KHSO₅.KHSO₄.K₂SO₄

Contact Information:

Sciencelab.com, Inc.

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Oxone, Monopersulfate Compound contains:	37222-66-5 or	100
	70693-62-8	
Potassium Peroxymonosulfate	10058-23-8	43
Potassium Bisulfate	7646-93-7	23
Potassium Sulfate	7778-80-5	29
Potassium Peroxydisulfate	7727-21-1	3
Magnesium Carbonate	546-93-0	2

Toxicological Data on Ingredients: Oxone, Monopersulfate Compound: ORAL (LD₅₀): Acute: 2000 mg/kg [Rat]. DERMAL (LD₅₀): Acute: 11000 mg/kg [Rabbit].

Section 3: Hazards Identification

Potential Acute Health Effects:

Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive), of eye contact (corrosive). The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:

Contact with combustible materials may cause fire. Improper storage of large masses of "oxone" can trap heat and lead to ignition of combustibles (see section on "handling and storage"). Grinding or intensive mixing may cause decomposition with liberation of heat and oxygen; Ignition of oxidizable material if present may occur.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

Large Spill:

Oxidizing material. Corrosive solid. Stop leak if without risk. Do not get water inside container. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep container dry. Keep away from heat. Keep away from sources of ignition. Keep away from combustible material.. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as combustible materials, organic materials, metals.

Storage:

Keep container tightly closed. Keep container in a cool, well-ventilated area away from heat sources such as light fixtures or space heaters. Separate from acids, alkalis, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers. Do not store above 24°C (75.2°F). Pallets of 25 kg. bags can be stacked. Don't stack pallets directly on top of each other. Leave open space on all sides of each pallet to provide ventilation. See local fire codes for allowable limits. Bulk bags should be stored on pallets; if stacked use pyramid style, no more than 2 pallets high. Closely stacked bags should not exceed a 4 ft. (1.2 M) cube. Keep packages dry. Do not store with combustible materials or with incompatibles (see "Incompatibility with Other Materials.")

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 5 (mg/m3) from OSHA (PEL) [United States] Inhalation Respirable. TWA: 15 (mg/m3) from OSHA (PEL) [United States] Inhalation Total. Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Granular solid. free flowing solid)

Odor: Not available.

Taste: Not available.

Molecular Weight: Not available.

Color: White.

pH (1% soln/water): 2.3 [Acidic.]

Boiling Point: Decomposes.

Melting Point: Decomposes.

Critical Temperature: Not available.

Specific Gravity: 1.25 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Partially soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Combustible materials and incompatible materials, close storage.

Incompatibility with various substances:

Highly reactive with combustible materials. Reactive with organic materials, metals.

Corrosivity: Not available.

Special Remarks on Reactivity:

This compound is an acid and an oxidizer. This compound is hygroscopic. Incompatible with acetone, combustible materials (saw dust, sweeping compounds), salts (sodium, bromine, etc.) + water. The mixture of "Oxone" with compounds containing halides or active halogens can cause release of respective halogen if moisture is present. For example, mixing sodium dichloroisocyanurate or, sodium chloride, or sodium bromide can cause the release of chlorine or bromine gas. Mixing with cyanides can cause release of hydrogen gas. Mixing with metal salts such as those of cobalt, nickel, copper or manganese can cause decomposition with release of oxygen and heat.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:

WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 2000 mg/kg [Rat]. Acute dermal toxicity (LD50): 11000 mg/kg [Rabbit]. Acute toxicity of the dust (LC50): >5 mg/l 4 hours [Rat].

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans:

Very hazardous in case of skin contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive), of eye contact (corrosive).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Class 8: Corrosive material

Identification: : Corrosive, solid, acidic, inorganic, n.o.s.(Monopersulfate compound) UNNA: 3260 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Oxone, Monopersulfate Compound

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):

CLASS C: Oxidizing material. CLASS D-2B: Material causing other toxic effects (TOXIC). CLASS E: Corrosive solid.

DSCL (EEC):**HMIS (U.S.A.):**

Health Hazard: 3

Fire Hazard: 0

Reactivity: 0

Personal Protection: j

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 11:08 AM

Last Updated: 11/01/2010 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS AND RELATED MATERIALS
DATE OF PREPARATION - 01-01-06

PAGE #1

MANUFACTURER'S NAME : Kelley Technical Coatings
ADDRESS : 1445 South 15th Street
ADDRESS : PO Box 3726
ADDRESS :
CITY, STATE : Louisville, Kentucky, 40201-3726

EMERGENCY TELEPHONE NO. DAY: (502) 636-2561- NIGHT: (800) 424-9300-
INFORMATION TELEPHONE NO. DAY: (502) 636-2561- NIGHT: (502) 363-9721-

SECTION I -- PRODUCT IDENTIFICATION

MANUFACTURER'S CODE IDENTIFICATION : 390
PRODUCT CLASS : Epoxy Paint
TRADE NAME : Zeron, White, 2pk
HMIS INFORMATION : HEALTH : 02
FLAMMABILITY : 02
REACTIVITY : 01
PERSONAL PROTECTIVE EQUIPMENT : REFER TO "SECTION VIII"

SECTION II -- HAZARDOUS INGREDIENTS

----- INGREDIENT -----	%BY	ACGIH	OSHA	SAR NUIS
MATERIAL DESCRIPTION Cas	WEIGHT T.L.V.		P.E.L	313 PGMT
2-BUTOXYETHANOL				
111-76-2	1.9685 25PPM		50PPM	Y N
AROMATIC NAPHTHA				
64742-95-6	3.8218 100PPM		100PPM	Y N
BUTOXY PROPANOL				
1569-01-3	.9071 Not Estab.		Not Estab.	Y N

If indicated above; this material could constitute a personnel hazard.

If the CAS# field above starts with ## then this material is considered
a trade secret.

SECTION III -- PHYSICAL DATA

LOWER EXPLOSION LEVEL	1.0 - 1.2	
BOILING RANGE	HIGH 343 DF	LOW 306 DF
VAPOR PRESSURE	3.00 MMHG @ 68DF	
VAPOR DENSITY	HEAVIER THAN AIR	
EVAPORATION RATE	SLOWER THAN BUTYL ACETATE	
WEIGHT PER GALLON	11	
% VOLATILE BY VOLUME	23.71	
% VOLATILE BY WEIGHT	13.36	
VOC --- LBS/GAL	1.6	LBS/GAL No Water 1.6
GRAMS/LITER	192.26	GRAMS/LITER 192.26

MANUFACTURER'S CODE 390

DATE OF PREPARATION - 01-01-06

TRADE NAME Zeron, White, 2pk,

SECTION IV -- FIRE AND EXPLOSION DATA

FLAMMABILITY CLASSIFICATION OSHA - CLASS II

DOT - COMBUSTIBLE LIQUID UN 1263

LOWEST FLASH POINT T.C.C. 110 DF

LOWER EXPLOSION LEVEL (LEL) 1%

Extinguishing Media: (Yes) - Foam (No) - Alcohol Foam (Yes) - CO2
(Yes) - Dry Chemical (Yes) - Water FogUnusual Fire and Explosion Hazards: - Flammable vapors may form explosive
mixtures with air.Special Fire Fighting Procedures: - Avoid solid stream of water, use fog
for cooling.-----
SECTION V -- HEALTH HAZARD DATA
-----To the best of our knowledge, this product does not
contain any carcinogenic ingredients.Effects of Overexposure: - Liquid may cause eye burns. Prolonged skin
contact with liquid may cause irritation. Eye, nose and throat
irritation may result from exposure to vapor. Narcotic effects occur
at higher concentrations of vapor.Primary Route(s) of Entry: (X) - Dermal (X) - Inhalation (X) - Ingestion
Emergency and First Aid Procedures:

- Eye contact: Irrigate immediately and thoroughly with water at least
15 minutes and get medical attention.
- Skin contact: Flush immediately and thoroughly with water.
- Inhalation: Remove from exposure, treat symptomatically and get
medical attention.

Medical Conditions Prone to Aggravation by Exposure:

- Pre-existing Respiratory, Eye and Skin Conditions.

SECTION VI -- REACTIVITY DATA

Stability: () - Unstable (X) - Stable

Hazardous Polymerization: () - May Occur (X) - Will Not Occur

Hazardous Decomposition Products: - As with any other organic material,
combustion will produce carbon dioxide and probably carbon monoxide.

Conditions to Avoid: - Not applicable.

Incompatibility (Materials to Avoid): - Oxidizing materials can cause a
vigorous reaction.

MANUFACTURER'S CODE 390

DATE OF PREPARATION - 01-01-06

TRADE NAME Zeron, White, 2pk,

SECTION VII -- SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Leaked or Spilled:

- Eliminate all ignition sources. Flush spill away with water spray.
- Small spills may be collected with absorbant material.

Waste Disposal Method:

- Mix with a compatible chemical which is less combustibile and incinerate.
 - Observe all federal, state, and local laws concerning health and pollution.
-
-

SECTION VIII -- SAFE HANDLING AND USE INFORMATION

Respiratory Protection: - A NIOSH approved respirator for organic vapors should be worn if needed.

Ventilation: - Local exhaust recommended.

- Mechanical (General) recommended.
- Special: None known.

Protective Gloves: - Should be worn.

Eye Protection: - Safety glasses should be worn in any type of industrial operation.

Other Protective Equipment: - Safety shower and eye bath in work area.

Hygienic Practices: - Remove paint from skin contact after exposure.
-----SECTION IX -- SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing: - Material is classified as a flammable liquid. Keep away from heat, sparks and open flame. Keep container closed. Avoid eye contact, prolonged skin contact, and inhalation of high concentrations of vapor. Use with ventilation adequate to maintain vapor concentrations below the TLV of 50 PPM.

Other Precautions: - Hazardous product residue may remain after the product has been removed from its container. Do not reuse "empty" container without commercial cleaning or reconditioning. See also 29 code of federal regulation 1910.1000.

MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS AND RELATED MATERIALS
DATE OF PREPARATION - 01-01-06

PAGE #1

MANUFACTURER'S NAME : Kelley Technical Coatings
ADDRESS : 1445 South 15th Street
ADDRESS : PO Box 3726
ADDRESS :
CITY, STATE : Louisville, Kentucky, 40201-3726

EMERGENCY TELEPHONE NO. DAY: (502) 636-2561- NIGHT: (800) 424-9300-
INFORMATION TELEPHONE NO. DAY: (502) 636-2561- NIGHT: (502) 363-9721-

SECTION I -- PRODUCT IDENTIFICATION

MANUFACTURER'S CODE IDENTIFICATION : 290
PRODUCT CLASS : Chlorinated Rubber Coating
TRADE NAME : PARALON 2, WHITE
HMIS INFORMATION : HEALTH : 02
FLAMMABILITY : 02
REACTIVITY : 01
PERSONAL PROTECTIVE EQUIPMENT : REFER TO "SECTION VIII"

SECTION II -- HAZARDOUS INGREDIENTS

----- INGREDIENT -----	%BY	ACGIH	OSHA	SAR	NUIS
MATERIAL DESCRIPTION Cas	WEIGHT	T.L.V.	P.E.L	313	PGMT
ALIPHATIC NAPHTHA					
64742-48-9	6.3426	100PPM	500PPM	N	N
AROMATIC NAPHTHA					
64742-95-6	29.209	100PPM	100PPM	Y	N

If indicated above; this material could constitute a personnel hazard.

If the CAS# field above starts with ## then this material is considered
a trade secret.

SECTION III -- PHYSICAL DATA

LOWER EXPLOSION LEVEL	1.0 - 1.2	
BOILING RANGE	HIGH 358 DF	LOW 306 DF
VAPOR PRESSURE	7.50 MMHG @ 68DF	
VAPOR DENSITY	HEAVIER THAN AIR	
EVAPORATION RATE	SLOWER THAN BUTYL ACETATE	
WEIGHT PER GALLON	11.61	
% VOLATILE BY VOLUME	58.8	
% VOLATILE BY WEIGHT	36.08	
VOC --- LBS/GAL	4.19	LBS/GAL No Water 4.19
GRAMS/LITER	502.73	GRAMS/LITER 502.73

MANUFACTURER'S CODE 290

DATE OF PREPARATION - 01-01-06

TRADE NAME PARALON 2, WHITE,

SECTION IV -- FIRE AND EXPLOSION DATA

FLAMMABILITY CLASSIFICATION OSHA - CLASS II

DOT - COMBUSTIBLE LIQUID UN 1263

LOWEST FLASH POINT T.C.C. 104 DF

LOWER EXPLOSION LEVEL (LEL) 1%

Extinguishing Media: (Yes) - Foam (No) - Alchohol Foam (Yes) - CO2
(Yes) - Dry Chemical (Yes) - Water FogUnusual Fire and Explosion Hazards: - Flammable vapors may form explosive
mixtures with air.Special Fire Fighting Procedures: - Avoid solid stream of water, use fog
for cooling.-----
SECTION V -- HEALTH HAZARD DATA
-----To the best of our knowledge, this product does not
contain any carcinogenic ingredients.Effects of Overexposure: - Liquid may cause eye burns. Prolonged skin
contact with liquid may cause irritation. Eye, nose and throat
irritation may result from exposure to vapor. Narcotic effects occur
at higher concentrations of vapor.Primary Route(s) of Entry: (X) - Dermal (X) - Inhalation (X) - Ingestion
Emergency and First Aid Procedures:

- Eye contact: Irrigate immediately and thoroughly with water at least
15 minutes and get medical attention.
- Skin contact: Flush immediately and thoroughly with water.
- Inhalation: Remove from exposure, treat symptomatically and get
medical attention.

Medical Conditions Prone to Aggravation by Exposure:

- Pre-existing Respiratory, Eye and Skin Conditions.

SECTION VI -- REACTIVITY DATA

Stability: () - Unstable (X) - Stable

Hazardous Polymerization: () - May Occur (X) - Will Not Occur

Hazardous Decomposition Products: - As with any other organic material,
combustion will produce carbon dioxide and probably carbon monoxide.

Conditions to Avoid: - Not applicable.

Incompatibility (Materials to Avoid): - Oxidizing materials can cause a
vigorous reaction.

MANUFACTURER'S CODE 290

DATE OF PREPARATION - 01-01-06

TRADE NAME PARALON 2, WHITE,

SECTION VII -- SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Leaked or Spilled:

- Eliminate all ignition sources. Flush spill away with water spray.
- Small spills may be collected with absorbant material.

Waste Disposal Method:

- Mix with a compatible chemical which is less combustibile and incinerate.
 - Observe all federal, state, and local laws concerning health and pollution.
-
-

SECTION VIII -- SAFE HANDLING AND USE INFORMATION

Respiratory Protection: - A NIOSH approved respirator for organic vapors should be worn if needed.

Ventilation: - Local exhaust recommended.

- Mechanical (General) recommended.
- Special: None known.

Protective Gloves: - Should be worn.

Eye Protection: - Safety glasses should be worn in any type of industrial operation.

Other Protective Equipment: - Safety shower and eye bath in work area.

Hygienic Practices: - Remove paint from skin contact after exposure.
-----SECTION IX -- SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing: - Material is classified as a flammable liquid. Keep away from heat, sparks and open flame. Keep container closed. Avoid eye contact, prolonged skin contact, and inhalation of high concentrations of vapor. Use with ventilation adequate to maintain vapor concentrations below the TLV of 50 PPM.

Other Precautions: - Hazardous product residue may remain after the product has been removed from its container. Do not reuse "empty" container without commercial cleaning or reconditioning. See also 29 code of federal regulation 1910.1000.

MATERIAL SAFETY DATA SHEET

MSDS

Omni pH Decreaser



Date-Issued: 08/29/1997
MSDS Ref. No: AOMN23306
Date-Revised: 02/17/2006
Revision No: 3

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Omni pH Decreaser

GENERAL USE: pH Decreaser.

MANUFACTURER

Asepsis, Inc., A Chemtura Company
Omni
P.O. Box 1788
Suwanee, GA 30024-0973
Customer SERVICE: (800) 959-7946

24 HR. EMERGENCY TELEPHONE NUMBERS

Poison Control Center (Medical) : (877) 800 - 5553
CHEMTREC (US Transportation) : (800) 424 - 9300

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS</u>	<u>Wt. %</u>
Sodium bisulfate	7681-38-1	93.2
Sodium sulfate	7757-82-6	6.5

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Off-white, bead-like, granular material.

IMMEDIATE CONCERNS: DANGER: Causes severe burns. Avoid contact with eyes, skin or clothing. Wear goggles or safety glasses and rubber gloves when handling this product. May be irritating to nose and throat. Avoid breathing dust. Do not ingest. Do not mix with other chemicals.

POTENTIAL HEALTH EFFECTS

EYES: Causes eye burns. Do not get in eyes.

SKIN: Causes skin burns. Avoid contact with skin.

INGESTION: Harmful if swallowed.

INHALATION: May be irritating to nose and throat. Avoid breathing dust or vapors.

CHRONIC: There are no known chronic hazards.

ROUTES OF ENTRY: Skin Contact, Inhalation, Ingestion, Eye Contact.

4. FIRST AID MEASURES

EYES: If in eyes: Flush eyes with plenty of water. Get medical attention if irritation persists.

SKIN: If on skin: Flush with plenty of water. Get medical attention if irritation persists.

INGESTION: If ingested: Do not induce vomiting. Drink several glasses of water and get immediate medical attention.

INHALATION: If Inhaled: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

NOTES TO PHYSICIAN: Eyes: Natural watering of eyes will dissolve sodium bisulfate, forming a weak sulfuric acid solution which may

cause burns. Flush affected area thoroughly with water. Do not use chemical antidotes or neutralizing solutions. Skin: Mild burns may occur if not thoroughly flushed previously. Inhalation: Mild burning sensations may occur to mucous membranes and upper respiratory tract. Ingestion: Body water content will react with sodium bisulfate to form a weak sulfuric acid solution, which may burn tissues in mouth, esophagus or stomach. Solution should be diluted to reduce burning effect.

5. FIRE FIGHTING MEASURES

- FLASHPOINT AND METHOD:** Not Applicable
- GENERAL HAZARD:** Product readily dissolves in water to form a weak sulfuric acid solution. No gases or toxic fumes are emitted from this reaction, but precautions for exposure to sulfuric acid should be followed.
- EXTINGUISHING MEDIA:** Water or dry chemical as appropriate for combustibles in area. Avoid water contact to material if possible as contact with water forms sulfuric acid solution.
- FIRE FIGHTING EQUIPMENT:** Firefighters should wear full protective clothing and self contained breathing apparatus (SCBA). Thoroughly decontaminate fire fighting equipment including all fire fighting wearing apparel after the incident.
- HAZARDOUS DECOMPOSITION PRODUCTS:** At temperatures over 570 F, product will decompose, generating oxides of sulfur.

6. ACCIDENTAL RELEASE MEASURES

- GENERAL PROCEDURES: STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Utilizing appropriate protective clothing and safety equipment, contain spilled material. Keep spill out of sewers and open bodies of water. Using clean dedicated equipment, sweep and scoop all spilled material, contaminated soil, and other contaminated material and place in clean dry plastic containers for disposal. Dispose of according to local, state, and federal regulations.

7. HANDLING AND STORAGE

- GENERAL PROCEDURES:** Avoid contact with eyes, skin or clothing. Avoid breathing dust.
- HANDLING:** Mix only with water. Never add water to product. Always add product to large quantities of water. Do not mix with other chemicals. Use clean dry utensils. Do not add this product to any dispensing device containing remnants of any other product. Such use may cause a violent reaction leading to fire or explosion.
- STORAGE:** Keep this product dry in original tightly closed container until use. Store in a cool, dry, well-ventilated area. Do not reuse container. Rinse empty container thoroughly before discarding in trash. Keep this product and all other chemicals out of children's reach.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

		<u>EXPOSURE LIMITS</u>					
		<u>OSHA PEL</u>		<u>ACGIH TLV</u>		<u>SUPPLIER OEL</u>	
		<u>ppm</u>	<u>mg/m³</u>	<u>ppm</u>	<u>mg/m³</u>	<u>ppm</u>	<u>mg/m³</u>
Sodium bisulfate	TWA	N/E		N/E			
		[1]					
Sodium sulfate	TWA	N/E		N/E			

OSHA TABLE COMMENTS:

1. N/E = Not Established

ENGINEERING CONTROLS: General room ventilation plus local exhaust should be used to minimize exposure to dust/vapors.

PERSONAL PROTECTIVE EQUIPMENT:

- EYES AND FACE:** Wear goggles or safety glasses with side shields when handling this product.
- SKIN:** Wear rubber gloves when handling this product. Avoid contact with skin.
- RESPIRATORY:** A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever

workplace conditions warrant a respirator's use.

WORK HYGIENIC PRACTICES: Remove and wash contaminated clothing before reuse.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid

ODOR: Sulfate

APPEARANCE: Granules

COLOR: Off-white

pH: Not Available

PERCENT VOLATILE: Non-volatile

VAPOR PRESSURE: Not Established

VAPOR DENSITY: Not Established

BOILING POINT: Not Applicable

FREEZING POINT: Not Established

MELTING POINT: 176.67°C (350°F)

SOLUBILITY IN WATER: 100%

EVAPORATION RATE: Not Applicable

DENSITY: 83 lb/cu ft

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: High temperature. Poor ventilation. Contamination. Moisture/high humidity.

STABILITY: This product is stable under normal conditions.

POLYMERIZATION: Hazardous polymerization will not occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Sulfur oxide gases (toxic, oxidizers & corrosive). Sulfur trioxide is a fire hazard.

INCOMPATIBLE MATERIALS: Other swimming pool/spa chemicals in their concentrated forms. Strong alkaline materials. Reacts with water to form weak sulfuric acid solution. Do not mix with liquid chlorine bleach, ammonia cleansers or similar products.

11. TOXICOLOGICAL INFORMATION

ACUTE

ORAL LD₅₀: 2800 mg/kg of body weight in rats

EYE EFFECTS: Mild to severe irritant. May cause burns if not flushed with water.

SKIN EFFECTS: Moderate irritant. May cause burns if not flushed with water.

SENSITIZATION: This product is not expected to be a skin sensitizer, based on main components.

CARCINOGENICITY:

This product is not listed as a carcinogen by IARC.

This product is not listed as a carcinogen by NTP.

This product is not listed as a carcinogen by OSHA.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: This product may be toxic to fish and aquatic organisms. Keep product from entering waterways and watersheds.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. Contact

with incompatible materials could cause a reaction or fire.

PRODUCT DISPOSAL: Disposal of unused, uncontaminated product is regulated according to local, state, and federal regulations.

EMPTY CONTAINER: Do not reuse container. Rinse thoroughly before discarding in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Not Regulated as a US DOT Hazardous Material

OTHER SHIPPING INFORMATION: Bill of Lading Description - Compounds, Swimming Pool, Cleaning or Water Treating, Dry or Liquid

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES:

FIRE: NO **PRESSURE GENERATING:** NO **REACTIVITY:** NO **ACUTE:** YES **CHRONIC:** NO

313 REPORTABLE INGREDIENTS: This product or its components are not listed.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: This product or its components are not listed.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: This product or its components are not subject to export notification.

TSCA STATUS: This product or its components are listed on the TSCA Inventory.

OSHA HAZARD COMM. RULE: Product is hazardous by definition of the Hazardous Communication Standard.

FIFRA (FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT): This product is not a US EPA registered pesticide.

16. OTHER INFORMATION

PREPARED BY: Regulatory Affairs Department

REVISION SUMMARY Revision #: 3 This MSDS replaces the February 17, 2006 MSDS. Any changes in information are as follows: In Section 1 Prepared By [] Chemtrec MSDS 24 Hour Emergency Phone Numbers In Section 1 Prepared By [] Chemtrec MSDS 24 Hour Emergency Phone Numbers In Section 1 [] Chemtrec MSDS 24 Hour Emergency Phone Numbers In Section 1 Prepared By [] Chemtrec MSDS 24 Hour Emergency Phone Numbers

HMIS RATING		
HEALTH:		1
FLAMMABILITY:		0
PHYSICAL HAZARD:		0
PERSONAL PROTECTION:		B

NFPA RATING	
HEALTH:	1
FIRE:	0
REACTIVITY:	0

Key

- 4 = Severe
- 3 = Serious
- 2 = Moderate
- 1 = Slight
- 0 = Minimal

COMMENTS: The contents and format of this MSDS are in accordance with OSHA Hazard Communication Standard, National Fire Protection Association (NFPA), and Hazardous Materials Identification System (HMIS).

MANUFACTURER DISCLAIMER: IMPORTANT: The information is given without a warranty or guarantee. No suggestions for use are

intended or shall be construed as a recommendation to infringe any existing patents or violate any federal, provincial, state, municipal, or local laws. Safe handling and use is the responsibility of the customer. Read the label before using this product. This information is true and accurate to the best of our knowledge.

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

PhosFree

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Manufacturer's Name Natural Chemistry Inc	Emergency Telephone Number (800) 753-1233
Address (Number, Street, City, State, and ZIP Code) 76 Progress Drive	Telephone Number for Information (800) 753-1233
Stamford CT 06902	Date Prepared April 05, 2005
	Signature of Preparer (optional)

[illegible]

Boiling Point	220 °F	Specific Gravity (H ₂ O = 1)	1.13
Vapor Pressure (mm Hg.)	as H ₂ O	Melting Point	n/a
Vapor Density (AIR = 1)	1	Evaporation Rate	As water
Solubility in Water	Not soluble		
Appearance and Odor	White mineral suspension		

Flash Point (Method Used) N/a	Flammable Limits n/a	LEL n/a	UEL n/a
Extinguishing Media non-flammable			
Special Fire Fighting Procedures n/a			
Unusual Fire and Explosion Hazards None			

Section V - Reactivity Data			
Stability	Unstable		Conditions to Avoid
	Stable	x	Do not ingest
Incompatibility (Materials to Avoid) none determined			
Hazardous Decomposition or Byproducts None			
Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	x	None
Section VI - Health Hazard Data			
Route(s) of Entry:	Inhalation? X	Skin? X	Ingestion? X
Health Hazards (Acute and Chronic) none: all tests show no inhalation/skin/toxicity			
Do not ingest.			
Carcinogenicity: n/a	NTP?	IARC Monographs?	OSHA Regulated?
Signs and Symptoms of Exposure none: excessive ingestion may cause mild nausea or diarrhea			
Medical Conditions Generally Aggravated by Exposure none			
Emergency and First Aid Procedures Wash eyes thoroughly if contacted			
Section VII - Precautions for Safe Handling and Use			
Steps to Be Taken in Case Material Is Released or Spilled flush to any sewage or any disposal system			
Waste Disposal Method flush to any sewage or disposal system			
Precautions to Be Taken in Handling and Storing none			
Other Precautions none			
Section VIII – Control Measures			
Respiratory Protection (Specify Type) none required			
Ventilation	Local Exhaust	Special	
	Mechanical (General)	Other	
n/a			
Protective Gloves	none required	Eye Protection	None required
Other Protective Clothing or Equipment n/a			
Work/Hygienic Practices observe good general housekeeping practices			



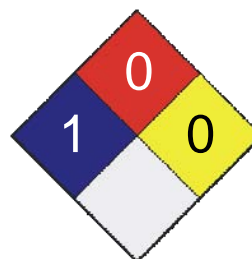
MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name Pool Perfect Concentrate
CAS # Mixture
Product use Water cleaning compound
Manufacturer Natural Chemistry, Inc.
40 Richards Ave.
Norwalk, CT 06854 US
Phone: (800) 753-1233
Emergency Phone: CHEMTREC (800) 424-9300

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	/ 1
Flammability	0
Physical Hazard	0
Personal Protection	B



2. Hazards Identification

Emergency overview CAUTION
Contact with liquid may cause eye and skin irritation.

Potential short term health effects

Routes of exposure Eye, Skin contact, Inhalation, Ingestion.

Eyes May cause irritation.

Skin May cause irritation.

Inhalation May cause respiratory tract irritation.

Ingestion May cause stomach distress, nausea or vomiting.

Target organs Eyes. Skin.

Chronic effects Prolonged or repeated exposure can cause drying, defatting and dermatitis.

Signs and symptoms Symptoms may include redness, edema, drying, defatting and cracking of the skin.
Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

3. Composition / Information on Ingredients

Composition comments None by WHMIS criteria.

4. First Aid Measures

First aid procedures

Eye contact Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists.

Skin contact Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists.

Inhalation If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.

Ingestion Do not induce vomiting. Rinse mouth with water, then drink one or two glasses of water. Obtain medical attention. Never give anything by mouth if victim is unconscious, or is convulsing.

Notes to physician Symptoms may be delayed.

General advice If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire Fighting Measures

Flammable properties	Not flammable by WHMIS/OSHA criteria.
Extinguishing media	
Suitable extinguishing media	Dry chemical. Water spray. Carbon dioxide. Foam.
Unsuitable extinguishing media	Not available
Protection of firefighters	
Specific hazards arising from the chemical	Not available
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products	May include and are not limited to: Oxides of carbon.
Explosion data	
Sensitivity to mechanical impact	Not available
Sensitivity to static discharge	Not available

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Methods for containment	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
Methods for cleaning up	Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills in original containers for re-use.

7. Handling and Storage

Handling	Use good industrial hygiene practices in handling this material.
Storage	Keep out of reach of children. Store in a closed container away from incompatible materials.

8. Exposure Controls / Personal Protection

Engineering controls	General ventilation normally adequate.
Personal protective equipment	
Eye / face protection	Wear safety glasses with side shields.
Hand protection	Rubber gloves. Confirm with a reputable supplier first.
Skin and body protection	As required by employer code.
Respiratory protection	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical & Chemical Properties

Appearance	Liquid
Color	amber
Form	Liquid
Odor	Molasses
Odor threshold	Not available
Physical state	Liquid
pH	5.5 - 6.5
Melting point	Not available
Freezing point	Not available
Boiling point	Not available

Flash point	Not available
Evaporation rate	Not available
Flammability limits in air, lower, % by volume	Not available
Flammability limits in air, upper, % by volume	Not available
Vapor pressure	Not available
Vapor density	Not available
Specific gravity	1.006 - 1.009
Relative density	8.38 - 8.43
Octanol/water coefficient	Not available
Solubility (H2O)	Miscible
Auto-ignition temperature	Not available
VOC (Weight %)	Not available
Viscosity	Not available
Percent volatile	Not available

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with other chemicals.
Incompatible materials	Acids. Oxidizers.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Effects of acute exposure	
Eye	May cause irritation.
Skin	May cause irritation.
Inhalation	May cause respiratory tract irritation.
Ingestion	May cause stomach distress, nausea or vomiting.
Sensitization	Non-hazardous by WHMIS/OSHA criteria.
Chronic effects	Non-hazardous by WHMIS/OSHA criteria.
Carcinogenicity	Non-hazardous by WHMIS/OSHA criteria.
Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.
Reproductive effects	Non-hazardous by WHMIS/OSHA criteria.
Teratogenicity	Non-hazardous by WHMIS/OSHA criteria.

12. Ecological Information

Ecotoxicity	Components of this product have been identified as having potential environmental concerns.
Environmental effects	Not available
Aquatic toxicity	Not available
Persistence / degradability	Not available
Bioaccumulation / accumulation	Not available
Partition coefficient	Not available
Mobility in environmental media	Not available
Chemical fate information	Not available

13. Disposal Considerations

Waste codes	Not available
Disposal instructions	Dispose in accordance with all applicable regulations.

Waste from residues / unused products	Not available
Contaminated packaging	Not available

14. Transport Information

Department of Transportation (DOT)

Not regulated as dangerous goods.

Transportation of Dangerous Goods (TDG)

Not regulated as dangerous goods.

15. Regulatory Information

Canadian federal regulations This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

US Federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical No

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical No

Clean Air Act (CAA) Not available

Clean Water Act (CWA) Not available

Safe Drinking Water Act (SDWA) Not available

Drug Enforcement Agency (DEA) Not available

Food and Drug Administration (FDA) Not available

WHMIS status Not Controlled

Inventory name

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

Disclaimer

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date

07-Dec-2007

Effective date

01-Dec-2007

Expiry date

01-Dec-2010

Prepared by

Dell Tech Laboratories Ltd. (519) 858-5021

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

POOL PERFECT+PHOSFREE

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Manufacturer's Name Natural Chemistry Inc	Emergency Telephone Number (800) 753-1233
Address (Number, Street, City, State, and ZIP Code) 76 Progress Drive	Telephone Number for Information (800) 753-1233
Stamford CT 06902	Date Prepared April 05, 2005
	Signature of Preparer (optional)

[illegible]

Boiling Point	212°F	Specific Gravity (H ₂ O = 1)	1.0
Vapor Pressure (mm Hg.)	as H ₂ O	Melting Point	n/a
Vapor Density (AIR = 1)	1	Evaporation Rate	
Solubility in Water	infinite		
Appearance and Odor	straw colored clear liquid		

Flash Point (Method Used)	Flammable Limits	LEL	UEL
none	n/a	n/a	n/a
Extinguishing Media			
non-flammable			
Special Fire Fighting Procedures			
n/a			
Unusual Fire and Explosion Hazards			
none			

Section V - Reactivity Data			
Stability	Unstable		Conditions to Avoid <div style="text-align: right;">none</div>
	Stable	x	
Incompatibility (<i>Materials to Avoid</i>) <div style="text-align: center;">none determined</div>			
Hazardous Decomposition or Byproducts <div style="text-align: center;">none</div>			
Hazardous Polymerization	May Occur		Conditions to Avoid <div style="text-align: right;">none</div>
	Will Not Occur	x	
Section VI - Health Hazard Data			
Route(s) of Entry:	Inhalation? <div style="text-align: center;">X</div>	Skin? <div style="text-align: center;">X</div>	Ingestion? <div style="text-align: center;">X</div>
Health Hazards (Acute and Chronic) <div style="text-align: center;">none: all tests show no inhalation/skin/ingestion/toxicity</div>			
Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
n/a			
Signs and Symptoms of Exposure <div style="text-align: center;">none: excessive ingestion may cause mild nausea or diarrhea</div>			
Medical Conditions Generally Aggravated by Exposure none			
Emergency and First Aid Procedures <div style="text-align: center;">none required</div>			
Section VII - Precautions for Safe Handling and Use			
Steps to Be Taken in Case Material Is Released or Spilled <div style="text-align: center;">flush to any sewage or any disposal system</div>			
Waste Disposal Method <div style="text-align: center;">flush to any sewage or disposal system</div>			
Precautions to Be Taken in Handling and Storing <div style="text-align: center;">none; but enzymatic activity may be lost if temperatures exceed 120°F (50°C) or if pH exposure is below 3.5 or above 9.0</div>			
Other Precautions <div style="text-align: center;">none</div>			
Section VIII - Control Measures			
Respiratory Protection (<i>Specify Type</i>) <div style="text-align: center;">none required</div>			
Ventilation <div style="text-align: center;">n/a</div>	Local Exhaust	Special	
	Mechanical (General)	Other	
Protective Gloves <div style="text-align: center;">none required</div>		Eye Protection <div style="text-align: center;">use safety glasses</div>	
Other Protective Clothing or Equipment <div style="text-align: center;">n/a</div>			
Work/Hygienic Practices <div style="text-align: center;">observe good general housekeeping practices</div>			



**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: **PULSAR CRS**

1. PRODUCT AND COMPANY IDENTIFICATION

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

REVISION DATE: 04/06/2011
SUPERCEDES:

MSDS Number: 000000013621
SYNONYMS: None
CHEMICAL FAMILY: Not Applicable/Mixture
DESCRIPTION / USE: Swimming pool water treatment
FORMULA: NOT APPLICABLE/MIXTURE

2. HAZARDS IDENTIFICATION

OSHA Hazard
Classification:

**This product is not considered to be hazardous under OSHA 29 CFR
1910.1200.**

Routes of Entry:

This product will not exert a significant adverse effect to health
from any route of exposure.

Chemical Interactions:

No known or reported interactions.

Medical Conditions Aggravated:

None known or reported

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	0	1	0	
NFPA	0	1	0	

Immediate (Acute) Health Effects

Inhalation Toxicity:	Not expected to be toxic by inhalation. Not expected to be irritating.
Skin Toxicity:	Not expected to be toxic from dermal contact. Not expected to be irritating to the skin.
Eye Toxicity:	Contact would be expected to cause transient redness if not washed out and left in the eye for an extended period of time. Not considered to be a primary eye irritant.
Ingestion Toxicity:	Not expected to be toxic by ingestion. Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting or diarrhea.
Acute Target Organ Toxicity:	There are no known or reported target organ effects from acute exposure.

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.
Skin Contact:	There are no known or reported effects from chronic exposure.
Skin Absorption:	Not expected to be absorbed through the skin.
Ingestion:	There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.
Sensitization:	Not expected to be a skin 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

CAS OR CHEMICAL NAME

CAS #

% RANGE

This product does not contain any ingredients considered to be hazardous that are required to be listed under OSHA 29 CFR 1910.1200.

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: Immediately drink water to dilute. Seek medical attention if symptoms develop. Never 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 DEG°C / 212 DEG°F
Autoignition Temperature:	No data
Fire / Explosion Hazards:	Material may be ignited only if preheated to high temperatures, for example in a fire.
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. Use water to cool containers.
Hazardous Combustion Products:	During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Upper Flammable / Explosive Limit, % in air:	No data
Lower Flammable / Explosive Limit, % in air:	No data



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:

Vapors may be suppressed by the use of water fog. 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. After removal, flush contaminated area thoroughly with 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 and well ventilated place. Isolate from incompatible materials. Do not store at temperatures below: 40 Deg. F (4.4 Deg. C)

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.

Respirator Type :

Not normally required.



Skin Protection : Wear impervious gloves to avoid skin contact.
Eye Protection: Use safety glasses with side shields.
Protective Clothing Type: Impervious

Exposure Limit Data

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>Name of Limit</u>	<u>Exposure</u>
No Data Found			

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	liquid
Form	liquid
Color:	clear
Odor:	mild
Molecular Weight:	No data
Specific Gravity :	No data
pH :	2 - 3
Boiling Point:	100 DEG°C / 212 DEG°F
Freezing Point:	No data
Melting Point:	Not applicable
Density:	0.995 - 1.010
Vapor Pressure:	No data
Vapor Density:	No data
Viscosity:	20 - 40 CPS
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.:	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:	Sparks, open flame, other ignition sources, and elevated temperatures., Avoid freezing.
Chemical Incompatibility:	Strong oxidizing agents, Strong bases
Hazardous Decomposition Products:	Carbon monoxide, Carbon dioxide, Oxides of nitrogen, Hydrogen chloride
Decomposition Temperature:	No data



11. TOXICOLOGICAL INFORMATION

Product Animal Toxicity

Oral LD50 value: LD50 Believed to be > 5,000 mg/kg rat

Dermal LD50 value: LD50 Believed to be > 2,000 mg/kg rabbit

Inhalation LC50 value: No data

Skin Irritation: Not expected to be irritating to the skin.

Eye Irritation: Not expected to be irritating.

Skin Sensitization: Not expected to be a skin sensitizer.

Acute Toxicity: There are no known or reported target organ effects from acute exposure.

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 ecological information 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 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): NOT REGULATED AS A DOT HAZARDOUS MATERIAL
Water (IMDG): NOT REGULATED AS A HAZARDOUS MATERIAL,

Flash Point: 100 DEG°C >
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 None
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
------------	-----------------------------------	------------------

Reportable Quantity (49 CFR 172.101, Appendix):

ZUS_CERCLA	Reportable quantity	SODIUM HYPOCHLORITE Value: 100lbs
------------	---------------------	--------------------------------------

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

US. EPA Clean Air Act (CAA) Section 111 SOCMI Intermediate or Final Volatile Organic Compounds (40 CFR 60.489)
01 1996
SODIUM BENZOATE

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
ZUSPA_RTK	None established

New Jersey:

CAS #	COMPONENT NAME
-------	----------------

PULSAR CRS

REVISION DATE : 04/06/2011



ZUSNJ_RTK

Massachusetts:

CAS #	COMPONENT NAME
ZUSMA_RTK	None established

California Proposition 65:

CAS #	COMPONENT NAME
ZUSCA_P65	None established

WHMIS Hazard Classification:

None established

16. OTHER INFORMATION

MSDS REVISION STATUS :

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. .



Arch Chemicals, Inc.

MATERIAL SAFETY DATA

FOR ANY EMERGENCY, CALL 24 HOURS/7 DAYS:	1-800-654-6911
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC@:	1-800-424-9300
FOR ALL MSDS QUESTIONS & REQUESTS, CALL MSDS CONTROL:	1-800-511-MSDS

PRODUCT NAME: PULSAR® PLUS DRY CHLORINATOR BRIQUETTES

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

REVISION DATE: 04-23-2001 SUPERCEDES: 04-02-1999
MSDS NO: 01534-0003 - 30170

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: 60-80%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS: 3 mg/cubic meter (ceiling) as Chlorine:
Internal Exposure Standard

CAS or CHEMICAL NAME: Sodium chloride
CAS NUMBER: 7647-14-5
PERCENTAGE RANGE: 10-20%
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: 0-4%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS:

	OSHA (PEL)		ACGIH (TLV)	
	ppm	mg/cubic-meter	ppm	mg/cubic-meter
TWA	None			5
CEIL	None		None	
ST	None		None	

CAS or CHEMICAL NAME: Calcium carbonate
CAS NUMBER: 471-34-1
PERCENTAGE RANGE: 0-4%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS:

	OSHA (PEL)		ACGIH (TLV)	
	ppm	mg/cubic-meter	ppm	mg/cubic-meter
TWA:		15 (Total dust) 5 (Respirable fraction)		10
CEILING:	None		None	
STEL:	None		None	

CAS or CHEMICAL NAME: 2-Phosphono-1,2,4-tricarboxylic acid, sodium salt
CAS NUMBER: 40372-66-5
PERCENTAGE RANGE: 0.2-0.8%
HAZARDOUS PER 29 CFR 1910.1200: No
EXPOSURE STANDARDS: None Established

CAS or CHEMICAL NAME: Water
CAS NUMBER: 7732-18-5
PERCENTAGE RANGE: 4-10%
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)

Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products.

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 two years. 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 tablet-form product
FREEZING POINT: Not Applicable
BOILING POINT: Not Applicable
DECOMPOSITION TEMPERATURE: onset - approx. 170-180 Deg.C (338-356 Deg.F)
SPECIFIC GRAVITY: Not Applicable
pH @ 25 DEG.C: 10.4-10.8 (1% soln.)
SOLUBILITY IN WATER: Approximately 18% @ 25 Deg.C. (Product contains calcium hydroxide and calcium carbonate which will leave a residue.)
BULK DENSITY: 0.8 g/cc, loose (granules), 1.9 g/cc (tablets)
VAPOR PRESSURE @ 25 DEG.C: Not Applicable
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 (WHEN APPLICABLE):

RESPIRATOR TYPE: NIOSH approved full face-piece respirator with chlorine cartridges and dust/mist prefilter.

PROTECTIVE CLOTHING TYPE: (This includes: gloves, boots, apron, protective suit): Neoprene

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

FLAMMABLE LIMITS AT NORMAL ATMOSPHERIC TEMPERATURE AND PRESSURE (PERCENT VOLUME IN AIR): UEL - Not Applicable LEL - Not Applicable

NFPA RATINGS:

Health: 3
Flammability: 0
Reactivity: 1
Special Hazard Warning: OX (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 XI.
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 VI)

OXIDIZER: Yes
PYROPHORIC: No
ORGANIC PEROXIDE: No
WATER REACTIVE: No
OTHER: Arch 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

MAY BE FATAL 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 1.4 mg/cubic-meter, based on odor threshold of chlorine.

IRRITATION THRESHOLD: Approximately 13-22 mg/cubic meter, based on the irritation threshold of chlorine.

IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: Approximately 45 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. Due to the corrosive nature of this product, ingestion may be fatal.

CHRONIC:

There are no known or reported effects from chronic exposure except for effects similar to those experienced from single exposure.

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: Approximately 1300 mg/cubic-meter (1 hr., rat) -
based on acute inhalation toxicity for chlorine
Oral LD 50: 850 mg/kg. (rat)
Dermal LD 50: > 2 g/kg. (rabbit)
Causes burns to eyes and skin

ACUTE TARGET ORGAN TOXICITY:

This product may be severely irritating and/or corrosive to all tissues contacted and upon inhalation, may cause irritation to the mucous membranes and upper respiratory tract.

CHRONIC TARGET ORGAN TOXICITY:

There are no known or reported effects from repeated exposure.

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.

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: 0.088 mg/l (nominal, static)
Rainbow trout, 96 hr. LC50: 0.16 mg/l (nominal, static)
Daphnia magna, 48 hr. LC50: 0.11 mg/l (nominal, static)

TOXICITY TO WILDLIFE:

Bobwhite quail, dietary LC50: > 5,000 ppm
Mallard ducklings, dietary LC50: > 5,000 ppm
Bobwhite quail, oral LD50: 3474 mg/kg.

SECTION 10 TRANSPORTATION INFORMATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT DESCRIPTION FROM THE HAZARDOUS MATERIALS TABLE 49 CFR 172.101:
LAND (U.S. DOT): CALCIUM HYPOCHLORITE MIXTURES DRY, 5.1, UN 1748,
PG2

WATER (IMO): SAME AS ABOVE

AIR (IATA/ICAO): SAME AS ABOVE

HAZARD LABEL/PLACARD: OXIDIZER

REPORTABLE QUANTITY: 10 lbs. (Per 49 CFR 172.101, Appendix)

EMERGENCY GUIDE NO: 45

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 labelled. 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 labelled. 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 this material requires the use of a full encapsulated suit

and a NIOSH approved positive pressure supplied air respirator.

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 hazardous 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:

This substance is listed on the Toxic Substances Control Act inventory.

NSF LIMITS: NSF Maximum Drinking Water Use Concentration - 46 mg/l
as calcium hypochlorite

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT TITLE 3:

HAZARD CATEGORIES, PER 40 CFR 370.2:

HEALTH:

Immediate (Acute)

PHYSICAL:

Fire and 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: Changes have been made to Sections 5, 9 and 11.

SECTION 15 MAJOR REFERENCES

1. Ishidate, M. et al. (1984). Primary mutagenicity screening of food additives currently used in Japan. *Fd. Chem. Toxicol.* 22:623-636.
2. Hayashi, M. et al. (1988). Micronucleus tests in mice on 39 food additives and eight miscellaneous chemicals. *Fd. Chem. Toxicol.* 26:487-500.
3. Report on the Acute Inhalation in Rats, Acute Oral LD50 in Rats, Eye Irritation in Rabbits, Dermal Irritation in Rabbits, and Acute Dermal Toxicity in Rabbits of HTH. Biometric Testing Laboratories, Inc., Whippany, NJ. Experiment Reference #A-1490 (RC-30406), February 9, 1975.
4. Report on the Teratogenic Study with Calcium Hypochlorite in Albino

- Rats. Industrial Bio-Test Laboratories, Inc., Northbrook, IL. IBT #B758b, April 18, 1972.
5. Report on the Mutagenic Study with Monosodium Cyanurate and Calcium Hypochlorite (HTH) in Albino Mice. Industrial Bio-Test Laboratories, Inc., Northbrook, IL. IBT #E756. April 18, 1972.
 6. Chemical Hazard Summary No. 20: Calcium Hypochlorite. Canadian Centre for Occupational Health and Safety, Hamilton, Ontario, Canada L8N 1H6. December 1986.
 7. Report on 18-Month Dermal Carcinogenicity Study with Monosodium Cyanuric Acid and HTH in Swiss White Mice. Industrial Bio-Test Laboratories, Inc., Northbrook, IL, IBT #651-00751, April 9, 1974.
 8. Report to PPG Industries, Inc. on the Acute Toxicity Studies with PITTCHLOR (Granular Calcium Hypochlorite). Industrial Bio-Test Laboratories, Inc., Northbrook, IL, IBT #601-06659, May 7, 1975.
 9. Report on the Acute Toxicity of HTH to Bluegill, Rainbow Trout and the Water Flea. E G & G, Bionomics Aquatic Toxicology Laboratory, Wareham, MA, July 1977.
 10. Report on the 8-Day Dietary LD50 Study with HTH in Mallard Ducklings. Industrial Bio-Test Laboratories, Inc., Northbrook, IL, IBT #651-06184, May 15, 1975.
 11. Report on the 8-Day Dietary LC50 with HTH in Bobwhite Quail. Industrial Bio-Test Laboratories, Inc., Northbrook, IL, IBT #651-06183.
 12. Final Report on the Acute Oral LD50 of Calcium Hypochlorite in Bobwhite Quail. Wildlife International, LTD., Easton, MD, Project #133-107, July 15, 1977.
 13. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Vol.52: Chlorinated Drinking Water; Chlorination By-Products; Some Other Halogenated Compounds; Cobalt and Cobalt Compounds. World Health Organization, International Agency for Research on Cancer (IARC), Lyon, France, 1991.
 14. Sittig, Marshall, Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2nd Ed., Noyes Publications, Park Ridge, NJ, 1985.
 15. Chemical Hazard Response Information System (CHRIS), Vol. II, U.S. Coast Guard, Washington, D.C., 1984.
 16. Chlorine and Your Health. The Chlorine Institute, Inc., Washington, D.C., August 1988.
 17. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices, Sixth Edition, 1991. American Conference of Governmental Industrial Hygienists, Inc., Cincinnati, OH.
 18. Amoores, John E. and Earl Hautala, Odor as an Aid to Chemical Safety: Odor Thresholds Compared with Threshold Limit Values and Volatiles for 214 Industrial Chemicals in Air and Water Dilution. Journal of Applied Toxicology, Vol. 3, No. 6, pp. 272-290, 1983.
 19. Forsberg, K., and S.Z. Mansdorf, Quick Selection Guide to Chemical Protective Clothing, Second Edition, Van Nostrand Reinhold, N.Y., 1993.

Additional references are 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.

Arch Chemicals, Inc.

MSDS Control
501 Merritt 7
PO Box 5204

Norwalk, CT 06856-5204



MATERIAL SAFETY DATA SHEET

MSDS Number: 2400E

Section 1 PRODUCT AND COMPANY IDENTIFICATION

Trade Name: UNI-WELD CLEAR CLEANER
 Product Nos.: 7366S, 7356S, 7346S, 7336S, 7324
 Product Use: Cleaner for cementing plastic pipe
 Formula: See Section 2
 Synonyms: Cleaner
 Firm Name & Address: United Elchem Industries UNITED ELCHEM IND. c/o OATEY CO. 4700 West 160th Street, P.O. Box 35906 Cleveland, Ohio 44135
 www.elchem.com
 Firm Phone No:
 Emergency Phone Nos.: For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
 Prepared by: Technical Department
 Preparation Date: 11/01/2009

Section 2 HAZARDS IDENTIFICATION

Emergency Overview:
 Clear

liquid with sharp, penetrating odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

Section 3 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS:	%wt/wt :	CAS NUMBER:	ACGIH TLV TWA:	OSHA PEL TWA	OTHER:
Methyl Ethyl Ketone	60 -100%	78-93-3	200 ppm 300 ppm	200 ppm	None
Acetone	15 - 40%	67-64-1	500 ppm 750 ppm STEL	1000 ppm	None

OSHA Hazard Classification: Flammable, irritant, organ effects

Section 4 FIRST AID MEASURES

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.
 Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.
 Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.
 Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

Section 5 FIRE FIGHTING MEASURES

Flashpoint / 14 - 23 Degrees F. (-10 to -5 Degrees C) / CCCFP
Method:
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume
Extinguishing Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container
Media: with water. Water may be ineffective as an extinguishing agent.
Special Fire Firefighters should wear positive pressure self-contained breathing apparatus
Fighting and full protective clothing for fires in areas where chemicals are used or
Procedure: stored
Unusual Fire Extremely flammable liquid. Keep away from heat and all sources of ignition
And Explosion including sparks, flames, lighted cigarettes and pilot lights. Containers may
Hazards: rupture or explode in the heat of a fire. Vapors are heavier than air and may
travel to a remote ignition source and flash back.
Hazardous Combustion will produce toxic and irritating vapors including carbon monoxide,
Decomposition carbon dioxide and hydrogen chloride.
Products:

Section 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak Remove all sources of ignition and ventilate area. Stop leak if it can be done
Procedures: without risk. Personnel cleaning up the spill should wear appropriate personal
protective equipment, including respirators if vapor concentrations are high.
Soak up spill with an inert absorbent such as sand, earth or other non-
combusting material. Put absorbent material in covered, labeled metal
containers. Prevent liquid from entering watercourses, sewers and natural
waterways. Report releases to authorities as required. See Section 13 for
disposal information.

Section 7 HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists.
Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after
handling. Do not eat, drink or smoke in the work area. Keep product away from
heat, sparks, flames and all other sources of ignition. No smoking in storage
or use areas. Keep containers closed when not in use.
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials.
Keep containers closed when not in use.
Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS
precautions in handling empty containers. Do not cut or weld on or near empty
or full containers.

Section 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at
the point of use below recommended exposure limits. If used in enclosed area,
use exhaust fans. Exhaust fans should be explosion-proof or set up in a way
that flammable concentrations of solvent vapors are not exposed to electrical
fixtures or hot surfaces.
Respiratory For operations where the exposure limit may be exceeded, a NIOSH approved
Protection: organic vapor respirator or supplied air respirator is recommended. Equipment
selection depends on contaminant type and concentration, select in accordance
with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting,
use self-contained breathing apparatus.
Skin Rubber gloves are suitable for normal use of the product. For long exposures
Protection: chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm)
to avoid prolonged skin contact.
Eye Safety glasses with side shields or safety goggles.
Protection:

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	151 Degrees F / 66 Degrees C
Melting Point:	Not applicable
Vapor Pressure:	145 mmHg @ 20 Degrees C
Vapor Density:	(Air = 1) 2.5
Volatile Components:	100%
Solubility In Water:	Negligible

pH:	Not applicable
Specific Gravity:	0.81 +/- 0.02 @ 20 Degrees C
Evaporation Rate:	(BUAC = 1) = 5.5 - 8.0
Appearance:	Clear Liquid
Odor:	Sharp, penetrating odor
Will Dissolve In:	Methyl Ethyl Ketone
Material Is:	Liquid

Section 10 STABILITY AND REACTIVITY

Stability: Stable.

Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.

Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Incompatibility/ Materials To Avoid: Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

Hazardous Polymerization: Will not occur.

Section 11 TOXICOLOGICAL INFORMATION

Inhalation: Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Skin: May cause irritation with redness, itching and pain. Methyl ethyl ketone may be absorbed through the skin causing effects similar to those listed under inhalation.

Eye: Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Chronic Toxicity: Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.

Toxicity Data:

Acetone:	Oral rat LD50: 5,800 mg/kg
	Inhalation rat LC50: 50,100 mg/m3/8 hours
Methyl Ethyl Ketone:	Oral rat LD50: 2,737 mg/kg
	Inhalation rat LC50: 23,500 mg/m3/8 hours
	Skin rabbit LD50: 6,480 mg/kg

Sensitization: None of the components are known to cause sensitization.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.

Mutagenicity: Acetone, methyl ethyl ketone are generally thought not to be mutagenic.

Reproductive Toxicity: Methyl ethyl ketone has been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

Section 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.

Acetone: 96 hour LC50 for fish is greater than 100 mg/L.

Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: Maximum 550 g/L per SCAQMD Test Method 316A.

Section 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: U002, U159

EPA Hazardous Waste ID Number: D001, D035, F003, F0005

EPA Hazard Waste Number: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

Section 14 TRANSPORT INFORMATION

DOT	<u>Less than 1 Liter (0.3 gal)</u>	<u>Greater than 1 Liter (0.3 gal)</u>
UN/NA Number:	None	UN1993
Proper Shipping Name:	Consumer Commodity	Flammable Liquid, NOS (Methyl Ethyl Ketone, Acetone)
Hazard Class:	ORM-D	3
Packing Group:	None	PGII
Hazard Labels:	None	Flammable Liquid
IMDG		
UN Number:	UN1993	UN1993
Proper Shipping Name:	Flammable Liquid, NOS (Limited Quantity)	Flammable Liquid, NOS (Methyl Ethyl Ketone, Acetone)
Hazard Class:	3	3
Packing Group:	II	II
Label:	None (Limited Quantities are expected from labeling)	Class 3 (Flammable Liquid)
Flashpoint (deg C)	-10 to -5 Degrees C	-10 to -5 Degrees C

2008 North American Emergency Response Guidebook Number: 127

Section 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product does not contain chemicals subject to SARA Title III Section 313 Reporting requirements.

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Methyl Ethyl Ketone (100% maximum) of 5,000 lbs, is 5,000 lbs.
Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain any chemicals subject to California Proposition 65 regulations.

TSCA Inventory Canadian WHIMS Classification: All of the components of this product are listed on the TSCA inventory. Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Section 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

Template: tmpl-us-e3

United Elchem Industries



MATERIAL SAFETY DATA SHEET

MSDS Number: 2400E

Section 1 PRODUCT AND COMPANY IDENTIFICATION

Trade Name: UNI-WELD CLEAR CLEANER
Product Nos.: 7366S, 7356S, 7346S, 7336S, 7324
Product Use: Cleaner for cementing plastic pipe
Formula: See Section 2
Synonyms: Cleaner
Firm Name & Address: United Elchem Industries UNITED ELCHEM IND. c/o OATEY CO. 4700 West 160th Street, P.O. Box 35906 Cleveland, Ohio 44135
www.elchem.com
Firm Phone No:
Emergency Phone Nos.: For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared by: Technical Department
Preparation Date: 11/01/2009

Section 2 HAZARDS IDENTIFICATION

Emergency Overview:

Clear
liquid with sharp, penetrating odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

Section 3 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS:	%wt/wt :	CAS NUMBER:	ACGIH TLV TWA:	OSHA PEL TWA	OTHER:
Methyl Ethyl Ketone	60 -100%	78-93-3	200 ppm 300 ppm	200 ppm	None
Acetone	15 - 40%	67-64-1	500 ppm 750 ppm STEL	1000 ppm	None

OSHA Hazard Classification: Flammable, irritant, organ effects

Section 4 FIRST AID MEASURES

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.
Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

Section 5 FIRE FIGHTING MEASURES

Flashpoint / 14 - 23 Degrees F. (-10 to -5 Degrees C) / CCCFP
Method:
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume
Extinguishing Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container
Media: with water. Water may be ineffective as an extinguishing agent.
Special Fire Firefighters should wear positive pressure self-contained breathing apparatus
Fighting and full protective clothing for fires in areas where chemicals are used or
Procedure: stored
Unusual Fire Extremely flammable liquid. Keep away from heat and all sources of ignition
And Explosion including sparks, flames, lighted cigarettes and pilot lights. Containers may
Hazards: rupture or explode in the heat of a fire. Vapors are heavier than air and may
travel to a remote ignition source and flash back.
Hazardous Combustion will produce toxic and irritating vapors including carbon monoxide,
Decomposition carbon dioxide and hydrogen chloride.
Products:

Section 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak Remove all sources of ignition and ventilate area. Stop leak if it can be done
Procedures: without risk. Personnel cleaning up the spill should wear appropriate personal
protective equipment, including respirators if vapor concentrations are high.
Soak up spill with an inert absorbent such as sand, earth or other non-
combusting material. Put absorbent material in covered, labeled metal
containers. Prevent liquid from entering watercourses, sewers and natural
waterways. Report releases to authorities as required. See Section 13 for
disposal information.

Section 7 HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists.
Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after
handling. Do not eat, drink or smoke in the work area. Keep product away from
heat, sparks, flames and all other sources of ignition. No smoking in storage
or use areas. Keep containers closed when not in use.
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials.
Keep containers closed when not in use.
Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS
precautions in handling empty containers. Do not cut or weld on or near empty
or full containers.

Section 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at
the point of use below recommended exposure limits. If used in enclosed area,
use exhaust fans. Exhaust fans should be explosion-proof or set up in a way
that flammable concentrations of solvent vapors are not exposed to electrical
fixtures or hot surfaces.
Respiratory For operations where the exposure limit may be exceeded, a NIOSH approved
Protection: organic vapor respirator or supplied air respirator is recommended. Equipment
selection depends on contaminant type and concentration, select in accordance
with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting,
use self-contained breathing apparatus.
Skin Rubber gloves are suitable for normal use of the product. For long exposures
Protection: chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm)
to avoid prolonged skin contact.
Eye Safety glasses with side shields or safety goggles.
Protection:

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	151 Degrees F / 66 Degrees C
Melting Point:	Not applicable
Vapor Pressure:	145 mmHg @ 20 Degrees C
Vapor Density:	(Air = 1) 2.5
Volatile Components:	100%
Solubility In Water:	Negligible

pH:	Not applicable
Specific Gravity:	0.81 +/- 0.02 @ 20 Degrees C
Evaporation Rate:	(BUAC = 1) = 5.5 - 8.0
Appearance:	Clear Liquid
Odor:	Sharp, penetrating odor
Will Dissolve In:	Methyl Ethyl Ketone
Material Is:	Liquid

Section 10 STABILITY AND REACTIVITY

Stability: Stable.

Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.

Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Incompatibility/ Materials To Avoid: Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

Hazardous Polymerization: Will not occur.

Section 11 TOXICOLOGICAL INFORMATION

Inhalation: Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Skin: May cause irritation with redness, itching and pain. Methyl ethyl ketone may be absorbed through the skin causing effects similar to those listed under inhalation.

Eye: Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Chronic Toxicity: Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.

Toxicity Data:

Acetone:	Oral rat LD50: 5,800 mg/kg
	Inhalation rat LC50: 50,100 mg/m3/8 hours
Methyl Ethyl Ketone:	Oral rat LD50: 2,737 mg/kg
	Inhalation rat LC50: 23,500 mg/m3/8 hours
	Skin rabbit LD50: 6,480 mg/kg

Sensitization: None of the components are known to cause sensitization.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.

Mutagenicity: Acetone, methyl ethyl ketone are generally thought not to be mutagenic.

Reproductive Toxicity: Methyl ethyl ketone has been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

Section 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.

Acetone: 96 hour LC50 for fish is greater than 100 mg/L.

Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: Maximum 550 g/L per SCAQMD Test Method 316A.

Section 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: U002, U159

EPA Hazardous Waste ID Number: D001, D035, F003, F0005

EPA Hazard Waste Number: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

Section 14 TRANSPORT INFORMATION

DOT	<u>Less than 1 Liter (0.3 gal)</u>	<u>Greater than 1 Liter (0.3 gal)</u>
UN/NA Number:	None	UN1993
Proper Shipping Name:	Consumer Commodity	Flammable Liquid, NOS (Methyl Ethyl Ketone, Acetone)
Hazard Class:	ORM-D	3
Packing Group:	None	PGII
Hazard Labels:	None	Flammable Liquid
IMDG		
UN Number:	UN1993	UN1993
Proper Shipping Name:	Flammable Liquid, NOS (Limited Quantity)	Flammable Liquid, NOS (Methyl Ethyl Ketone, Acetone)
Hazard Class:	3	3
Packing Group:	II	II
Label:	None (Limited Quantities are expected from labeling)	Class 3 (Flammable Liquid)
Flashpoint (deg C)	-10 to -5 Degrees C	-10 to -5 Degrees C

2008 North American Emergency Response Guidebook Number: 127

Section 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product does not contain chemicals subject to SARA Title III Section 313 Reporting requirements.

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Methyl Ethyl Ketone (100% maximum) of 5,000 lbs, is 5,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain any chemicals subject to California Proposition 65 regulations.

TSCA Inventory Canadian WHIMS Classification: All of the components of this product are listed on the TSCA inventory. Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Section 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

Template: tmpl-us-e3



MATERIAL SAFETY DATASHEET

U.S. DEPARTMENT OF LABOR, Occupational Safety and Health Administration Form Approved OMB No. 1218-0072, may be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910.1200

SECTION I

PRODUCT IDENTITY : SALT, AQUASALT, POOL SALT
(As used on Label and List)
Emergency Telephone Number: (713) 877-2600
Telephone Number For Information: (713) 877-2600

SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

Hazardous Components (Specify Identity; Common Name(s) OSHA PEL ACGIH TLV OTHER LIMITS RECOMMENDED % (Optional)

Sodium Chloride (NaCl) is not considered a hazardous chemical as USC interprets the OSHA Hazard Communication Standard 29 CFR 1910.1200. The information on this form has been prepared with reasonable care. USC extends no warranties, makes no representations and assumes no responsibilities as to the accuracy or suitability of such information for application to purchaser's intended purposes of or consequences of its use.

SECTION III - PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point:	1413° C	Specific Gravity (H₂O=1):	2.165
Vapor Pressure (mm Hg.):	1 MM @ 855°	Melting Point:	800° C
Vapor Density (AIR=1):	N/A	Evaporation Rate (Butyl Acetate=1):	N/A
Solubility in Water:	Appreciable (26.43% by weight at 20 Deg Celsuis		
Appearance and Odor:	Bluish White, Crystalline, Odorless Solid		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	N/A
Flammable Limits :	LEL: N/A UEL: N/A
Extinguishing Media :	Material is non-flammable. Use Media appropriate for surrounding materials.
Special Fire Fighting Procedures :	None

SECTION V - REACTIVITY DATA

Stability :	Stable	Conditions to Avoid :	None
Incompatibility (Materials to Avoid):	Bromine Trifluoride, Lithium		
Hazardous Decomposition or Byproducts :	When heated to decomposition (above 1413 degree celsius) may emit toxic fumes of Na ₂ O and Cl ₂ .		
Hazardous Polymerization :	May Not Occur	Conditions to Avoid :	None



MATERIAL SAFETY DATASHEET

SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry :

Eye?	Yes	Inhalation?	Yes	Skin?	Yes	Ingestion?	Yes
------	-----	-------------	-----	-------	-----	------------	-----

Health Hazards (Acute and Chronic) :

Carcinogenicity?	No	NTP?	No	IARC Monographs?	No	OSHA Regulated?	No
------------------	----	------	----	------------------	----	-----------------	----

Signs and Symptoms of Exposure : Listed Above

Medical Conditions Generally Aggravated by Exposure : No information

Emergency and First Aid Procedures :

Ingestion: Drink large amounts of water; Inhalation: Remove to fresh air; Skin Contact: Wash with soap and water; Eye Contact: Flush with water for 15 minutes. Get Medical Attention.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled : No Special requirements - Check your state for reportable quantity requirements.

Waste Disposal Method : Dispose of in accordance to local state and federal regulations.

Precautions to be taken in Handling and Storing : Transport in dry equipment. Store in dry location.

Other Procedures : None.

SECTION VIII - CONTROL MEASURES

Respiratory Protection (Specify Type) : None Required - Nuisance dust mask for personal comfort.

Ventilation : Local Exhaust

Special : None

Mechanical : Satisfactory

Other : None

Protective Gloves : Work Gloves

Eye Protection : Goggles

Other Protective Clothing or Equipment : None required

Work / Hygienic Practices : None

MATERIAL SAFETY DATA SHEET

Product Name: Silica Sands (All Grades)																													
1. Chemical product and company identification <table> <tr> <td>Product name</td> <td colspan="4">Silica Sands/Filtration Sand</td> </tr> <tr> <td>Product type and use</td> <td colspan="4">Swimming pools</td> </tr> <tr> <td>Company identification</td> <td colspan="4">Total Pool Chemicals Ltd</td> </tr> <tr> <td>Address and telephone number</td> <td colspan="4">Unit 1, Pool Bank Park High Street, Tarvin, Chester CH3 8JH</td> </tr> <tr> <td>Emergency telephone number</td> <td colspan="4">01829 740290</td> </tr> </table>					Product name	Silica Sands/Filtration Sand				Product type and use	Swimming pools				Company identification	Total Pool Chemicals Ltd				Address and telephone number	Unit 1, Pool Bank Park High Street, Tarvin, Chester CH3 8JH				Emergency telephone number	01829 740290			
Product name	Silica Sands/Filtration Sand																												
Product type and use	Swimming pools																												
Company identification	Total Pool Chemicals Ltd																												
Address and telephone number	Unit 1, Pool Bank Park High Street, Tarvin, Chester CH3 8JH																												
Emergency telephone number	01829 740290																												
2. Composition/Information on ingredients <table> <tr> <th>Chemical Name</th> <th>CAS No</th> <th>Content %</th> <th>Symbol</th> <th>R-phrases(s)</th> </tr> <tr> <td>Silica</td> <td>14808-50-7</td> <td></td> <td></td> <td></td> </tr> </table>					Chemical Name	CAS No	Content %	Symbol	R-phrases(s)	Silica	14808-50-7																		
Chemical Name	CAS No	Content %	Symbol	R-phrases(s)																									
Silica	14808-50-7																												
3. Hazards identification <table> <tr> <td>Inhalation</td> <td>Long term exposure to crystalline silica can cause silicosis of the lungs</td> </tr> <tr> <td>Ingestion</td> <td>Ingestion of dust particles may cause irritation</td> </tr> <tr> <td>Contact with Eyes</td> <td>Contact with eyes/mucous membranes may cause temporary irritation by abrasion.</td> </tr> <tr> <td>Skin Contact</td> <td>Prolonged contact with the skin may cause irritation by abrasion.</td> </tr> </table>					Inhalation	Long term exposure to crystalline silica can cause silicosis of the lungs	Ingestion	Ingestion of dust particles may cause irritation	Contact with Eyes	Contact with eyes/mucous membranes may cause temporary irritation by abrasion.	Skin Contact	Prolonged contact with the skin may cause irritation by abrasion.																	
Inhalation	Long term exposure to crystalline silica can cause silicosis of the lungs																												
Ingestion	Ingestion of dust particles may cause irritation																												
Contact with Eyes	Contact with eyes/mucous membranes may cause temporary irritation by abrasion.																												
Skin Contact	Prolonged contact with the skin may cause irritation by abrasion.																												
4. First-aid measures <table> <tr> <td>Skin contact</td> <td>Remove particles and flush with soap and water.</td> </tr> <tr> <td>Contact with eyes</td> <td>Immediately flush eye(s) with plenty of water. If eye irritation persists, consult a specialist.</td> </tr> <tr> <td>Ingestion</td> <td>Give water and seek immediate medical advice.</td> </tr> </table>					Skin contact	Remove particles and flush with soap and water.	Contact with eyes	Immediately flush eye(s) with plenty of water. If eye irritation persists, consult a specialist.	Ingestion	Give water and seek immediate medical advice.																			
Skin contact	Remove particles and flush with soap and water.																												
Contact with eyes	Immediately flush eye(s) with plenty of water. If eye irritation persists, consult a specialist.																												
Ingestion	Give water and seek immediate medical advice.																												

Product Name: Silica Sands (All grades)	
5. Fire-fighting measures Suitable extinguishing media Special protective equipment	Material is non-combustable Self contained breathing apparatus for fire fighting if necessary.
6. Accidental release measures Personal precautions: Environmental precautions: Methods for cleaning up:	Beware of generational dust. Non-Hazardous Take up mechanically
7. Handling and Storage Safe Handling advice: Advice on protection against fire And explosion Storage Requirements for storage areas and containers	Avoid the generation of dust N/A Should be dry and well ventilated.
8. Exposure controls/Personal Protection Ingredients with MEL's Personal protective equipment <ul style="list-style-type: none"> - Hygiene measures - Respiratory protection - Hand protection - Body/Eye protection 	0.1mg/m ³ , 8hr TWA. As Silica (SiO ₂) Crystalline dust. High standards of personal hygiene must be encouraged. Dust respirator if conditions are dusty. Protective gloves recommended Overalls are recommended. Chemical goggles and face shield.

Product Name: Silica Sands (All Grades)	
9. Physical and chemical properties	
Appearance	Granular
Colour	Orange
Specific Gravity	2.65
Bulk Density	1600kg/m3
10. Stability and reactivity	Stable under normal conditions
Conditions to avoid	N/A
Materials to Avoid	N/A
11. Toxicological information	
This material is irritant to the eyes	
Acute toxicity	N/A
Additional Information	N/A
Relevant Observations	The degree of irritation was insufficient to warrant labelling as skin irritant.
12. Ecological Information	
Information on elimination	None
Behaviour in environment	
Mobility and Bio-accumulative potential	This product is in-volatile and in-soluble and will accumulate in the ground. The product is resistant to bio-degradation.
Eco-toxicological Effects – Aquatic Toxicity	N/A

Product Name: Silica Sands (All grades)	
13. Disposal Considerations	Dispose of via an authorised landfill site
Preparation Recommendation	Take up mechanically.
14. Transport Information	
Road/Rail: ADR/RID	Not dangerous
Inland Sea: AND/ADNR	Not dangerous
Air Transport: ICAO/IATA	Not dangerous
15. Regulatory Information	
Labelling	Not classified as hazardous
The statements made herein are based on our best present experience and are intended to describe product safety requirements. They should not therefore be considered as a warranty of specific properties.	

Material Safety Data Sheet

SeaKlear: Algae Prevention & Remover

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: HaloSource, Inc.
Corporate Address: 1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone: (425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone: **800-424-9300 Chemtrec** (24 Hours)
Material/Trade/Product Name: **SeaKlear: Algae Prevention & Remover**
Synonyms: None
Chemical Name: Proprietary
Chemical Formula: Proprietary
CAS No.: Not Applicable
EPA Registration #: 72083-1
Product Use: Controls algae growth in swimming pool water.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	COMPONENT	%	OSHA HAZARDOUS ?
7758-99-8	Copper sulfate pentahydrate (chelated in solution)	12	YES
<i>Trade Secret</i>	<i>Trade Secret</i>	28	YES
	<i>All other components are non-hazardous.</i>	60	NO

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Blue liquid with a slight odor.

WARNING! Irritant to eyes and skin. Harmful if ingested (*see below*).

This material is harmful to fish.

POTENTIAL HEALTH EFFECTS

EYE: Irritant. May cause watering of the eye and blurred vision. Contamination of the eyes can result in permanent injury.

SKIN: Contact with skin may result in irritation. Repeated or prolonged skin contact may lead to skin burns and allergic contact dermatitis.

INHALATION: Not normally an inhalation hazard due to low vapor pressure.

INGESTION: Swallowing can result in burning and metallic taste in mouth, irritation of the mouth, esophagus and stomach, vomiting, diarrhea, abdominal pain, jaundice and kidney failure, dizziness, faintness, loss of consciousness and death.

CHRONIC EXPOSURE/CARCINOGENICITY: Not known.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: May cause watering of the eye and blurred vision. Contact with skin may result in irritation. Repeated or prolonged skin contact may lead to skin burns and allergic contact dermatitis. Swallowing can result in burning and metallic taste in mouth, irritation of the mouth, esophagus and stomach, vomiting, diarrhea, abdominal pain, jaundice and kidney failure, dizziness, faintness, loss of consciousness and death.

AGGRAVATION OF PRE-EXISTING CONDITIONS: Repeated or prolonged skin contact may lead to allergic contact dermatitis.

POTENTIAL ENVIRONMENTAL EFFECTS: This material is considered a marine pollutant by the USDOT.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open. Contact a physician.

SKIN CONTACT: Immediately wash skin contaminated skin with plenty of water. Remove contaminated clothing and wash before re-use. If irritation occurs seek medical advice.

INHALATION: Remove victim from exposure to fresh air. Seek medical advice if effects persist.

INGESTION: Immediately rinse mouth. If swallowed do NOT induce vomiting. Give water or milk. Seek immediate medical assistance.

NOTE TO PHYSICIANS: Treat symptomatically. Corrosive may cause stricture. If lavage is performed, suggest endotracheal and/or esophagoscopy control.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Not available

UPPER FLAMMABLE LIMIT: Not available

FLAMMABILITY CLASS (OSHA): Not applicable

AUTOIGNITION TEMPERATURE: Not available

LOWER FLAMMABLE LIMIT: Not available

FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: Not combustible, however, following evaporation of aqueous component residual could burn if ignited.

HAZARDOUS COMBUSTION PRODUCTS: Decomposes on heating emitting toxic fumes including those of NOX.

EXTINGUISHING MEDIA: Water fog or fine water spray, dry chemicals, carbon dioxide, sand or foam.

PROTECTION OF FIREFIGHTERS: Firefighters should wear self-contained breathing apparatus if there exists a risk of exposure to products of decomposition.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: Do not allow product to get into waterways.

METHODS FOR CLEANING UP: Clear area of all unprotected personnel. Avoid inhalation of vapor or mist. Increase ventilation. Slippery, use caution. Wear protective equipment to prevent skin and eye contamination.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING RECOMMENDATIONS

VENTILATION: Normal ventilation should be sufficient under normal conditions.

FIRE PREVENTION: No special requirements.

SPECIAL HANDLING REQUIREMENTS: Exercise normal handling precautions for liquids.

SAFE STORAGE RECOMMENDATIONS

CONTAINMENT: Store in well-closed containers. Do not pack in unlined steel drums.

STORAGE ROOM RECOMMENDATIONS: Store in cool dry area.

INCOMPATIBLE MATERIALS: Strong acids.

STORAGE CONDITIONS: Protect from freezing. Keep away from metals.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Normal ventilation should be sufficient under normal conditions. Keep containers closed when not in use.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: For operations where eye contact can occur, wear chemical, splash proof goggles or face shield.

SKIN PROTECTION: For operations where skin contact can occur, wear coveralls.

HAND PROTECTION: For operations where hand contact can occur, wear PVC gloves.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Respirator use for this product is unnecessary.

GOOD HYGIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

PERMISSIBLE EXPOSURE LIMITS						
INGREDIENT CAS NO.	OSHA		WISHA		ACGIH (TLV)	
	TWA	STEL	TWA	STEL	TWA	STEL
102-71-6	Not applicable	Not applicable	Not applicable	Not applicable	5 mg/m ³	Not applicable

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**COLOR:** Blue**PHYSICAL FORM:** Liquid**pH:** 8.5**VAPOR DENSITY:** Not available**MELTING POINT:** Not available**SOLUBILITY IN WATER:** Miscible in water**SHAPE:** Liquid**ODOR:** Slight odor**VAPOR PRESSURE:** Not available**BOILING POINT:** Not available**FREEZING POINT:** -5.6 C (21.9 F)**SPECIFIC GRAVITY OR DENSITY:** 1.08-1.21

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY**CHEMICAL STABILITY:** Stable.**CONDITIONS TO AVOID:** Protect from freezing. Keep away from metals.**MATERIALS TO AVOID (INCOMPATIBILITY):** Strong acids.**HAZARDOUS DECOMPOSITION PRODUCTS:** Oxides of carbon and nitrogen.**HAZARDOUS POLYMERIZATION:** Will not occur.**SECTION 11: TOXICOLOGICAL INFORMATION****ORAL LD₅₀ (rat):** 4,500 mg/kg**DERMAL LD₅₀ (rabbit):** Not available.**INHALATION:** No effect at 2000 mg/Kg**SKIN IRRITATION:** Greater than 2000 mg/Kg**EYE IRRITATION:** Irritant**SKIN SENSITIZATION:** Not available.**ADDITIONAL INFORMATION:** Not available.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.

MOBILITY: Not available.

PERSISTENCE AND DEGRADABILITY: Not available.

BIOACCUMULATIVE POTENTIAL: Not available.

ADDITIONAL INFORMATION: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION**U.S. DEPARTMENT OF TRANSPORTATION (DOT):**

**When transported by motor vehicles, rail cars or aircraft in 119 gallon or less containers:*

Proper Shipping Name:	Not Regulated
Hazard Class:	Not Regulated
Identification Number (UN Number):	Not Regulated
Packing Group (PG):	Not Regulated

** When transported by motor vehicles, rail cars or aircraft in 120 gallon or more containers:*

Proper Shipping Name:	Environmentally hazardous substances, liquid, n.o.s (Copper sulphate pentahydrate)
Hazard Class:	9
Identification Number (UN Number):	3082
Packing Group (PG):	III
Additional Information:	Marine pollutant

**When transported aboard vessel in any sized container:*

Proper Shipping Name:	Environmentally hazardous substances, liquid, n.o.s (Copper sulphate pentahydrate)
Hazard Class:	9
Identification Number (UN Number):	3082
Packing Group (PG):	III
Additional Information:	Marine pollutant

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: Listed

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
Not applicable	Not applicable

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
YES	NO	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

SECTION 16: OTHER INFORMATION**REVISION INFORMATION:**

MSDS sections(s) changed since last revision of document: Section 13. Designation of product waste was changed from hazardous waste to non-hazardous waste.

DISCLAIMER:

The above information is based upon information HaloSource, Inc. believes to be reliable and is supplied for informational purposes only. HaloSource, Inc. disclaims any liability for damage which results from the use of the above information and nothing contained therein shall constitute a guarantee, warranty (including fitness for a particular purpose) or representation with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose even if that purpose is known to HaloSource, Inc. The final determination of the suitability of the information, the manner of use of the information or product and potential infringement is the sole responsibility of the user.

MSDS PREPARED BY: Jeremy Heath, EH&S Specialist

Material Safety Data Sheet

SeaKlear: Enzyme Klear

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: HaloSource, Inc.
Corporate Address: 1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone: (425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone: **800-424-9300 Chemtrec** (24 Hours)
Material/Trade/Product Name: **SeaKlear: Enzyme Klear**
Synonyms: None
Chemical Name: Not available
Chemical Formula: Not available
CAS No.: Not applicable
EPA Re. No.: Not applicable
Product Use: Destroys scum lines and odors in swimming pools. Assists in removal of excess oils from swimming pool water.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	COMPONENT	%	OSHA HAZARDOUS ?
7732-18-5	Water	<i>Proprietary</i>	No
9014-01-1	Subtilism Protease	<i>Proprietary</i>	Yes
9000-85-5	Amylase	<i>Proprietary</i>	No
9001-62-1	Lipase	<i>Proprietary</i>	Yes
9012-54-8	Cellulase	<i>Proprietary</i>	Yes
9015-54-7	Hydrolyzed Protein	<1	Yes

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Amber to tan liquid with a ferment odor.

CAUTION: May cause eye or skin irritation. May be irritating if ingested. May cause an allergic reaction if inhaled.

POTENTIAL HEALTH EFFECTS

EYE: May cause eye irritation. Organisms used are nonpathogenic but can cause infection when in contact with open wounds. These organisms are susceptible to many commonly used antibiotics.

SKIN: May cause slight redness if individual has history of dermal allergic reaction. Dermatitis and skin sensitization can develop after repeated and/or prolonged contact with human skin.

INHALATION: May cause allergic type response insusceptible or hypersensitive individuals upon repeated or prolonged exposure.

INGESTION: May cause irritation of the mouth, pharynx, esophagus and stomach. No effect if ingested in small amounts. A single dose of this product is rarely toxic by ingestion.

CHRONIC EXPOSURE/CARCINOGENICITY: None known.

AGGRAVATION OF PRE-EXISTING CONDITIONS: May cause slight redness if individual has history of dermal allergic reaction.

POTENTIAL ENVIRONMENTAL EFFECTS: None known.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: 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 further treatment advice.

SKIN CONTACT: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes.

INHALATION: Move person to fresh air.

INGESTION: Drink water or milk to dilute. Induce vomiting only if advised by physician or poison control center. Call poison control center.

NOTE TO PHYSICIANS: None.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Not available

UPPER FLAMMABLE LIMIT: Not available

FLAMMABILITY CLASS (OSHA): Not applicable

AUTOIGNITION TEMPERATURE: Not available

LOWER FLAMMABLE LIMIT: Not available

FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: None known.

HAZARDOUS COMBUSTION PRODUCTS: None known.

EXTINGUISHING MEDIA: Water fog, carbon dioxide, dry chemicals.

PROTECTION OF FIREFIGHTERS: Provide firefighters with self-contained breathing apparatus in positive pressure mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: None known.

METHODS FOR CLEANING UP: For small spills, flush to waste treatment sewer (product is biodegradable.) For large spills, contain and collect for reuse.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING RECOMMENDATIONS

VENTILATION: No special ventilation needed.

FIRE PREVENTION: No special requirements, material is not flammable.

SPECIAL HANDLING REQUIREMENTS: Wash hands thoroughly after handling.

SAFE STORAGE RECOMMENDATIONS

CONTAINMENT: Keep container closed when not in use.

STORAGE ROOM RECOMMENDATIONS: To maintain shelf life, avoid prolonged exposure to high temperatures and humidity.

INCOMPATIBLE MATERIALS: Strong acids or alkali compounds may inactivate biological cultures.

STORAGE CONDITIONS: None known.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: No special ventilation needed.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: Wear safety glasses with side shields or goggles.

SKIN PROTECTION: No special protection required.

HAND PROTECTION: Natural or synthetic rubber gloves.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

GOOD HYGIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

PERMISSIBLE EXPOSURE LIMITS						
INGREDIENT CAS NO.	OSHA		WISHA		ACGIH (TLV)	
	TWA	STEL	TWA	STEL	TWA	STEL
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Amber - Tan in Color

PHYSICAL FORM: Liquid

pH: 6.7 – 7.2

VAPOR DENSITY: Same as water

MELTING POINT: Not available

SOLUBILITY IN WATER: 99%

SHAPE: Liquid

ODOR: Characteristic Ferment Odor

VAPOR PRESSURE: Not available

BOILING POINT: 100°C

FREEZING POINT: Not available

SPECIFIC GRAVITY OR DENSITY: 1.0 – 1.01

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID: None known.

MATERIALS TO AVOID (INCOMPATIBILITY): Strong acids or alkali compounds may inactivate biological cultures.

HAZARDOUS DECOMPOSITION PRODUCTS: None.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

ORAL LD₅₀ (rat): Not available.

DERMAL LD₅₀ (rabbit): Not available.

SKIN IRRITATION (rabbit): Not available.

EYE IRRITATION (rabbit): Not available.

SKIN SENSITIZATION: Not available.

ADDITIONAL INFORMATION: Not available.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.

MOBILITY: Not available.

PERSISTENCE AND DEGRADABILITY: Not available.

BIOACCUMULATIVE POTENTIAL: Not available.

ADDITIONAL INFORMATION: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Proper Shipping Name:	Not Regulated
Hazard Class:	Not Regulated
Identification Number (UN Number):	Not Regulated
Packing Group (PG):	Not Regulated

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: Not listed.

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
Not applicable	Not applicable

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
YES	NO	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

SECTION 16: OTHER INFORMATION

REVISION INFORMATION:

MSDS sections(s) changed since last revision of document: Not applicable.

DISCLAIMER:

**

The above information is based upon information HaloSource, Inc. believes to be reliable and is supplied for informational purposes only. HaloSource, Inc. disclaims any liability for damage which results from the use of the above information and nothing contained therein shall constitute a guarantee, warranty (including fitness for a particular purpose) or representation with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose even if that purpose is known to HaloSource, Inc. The final determination of the suitability of the information, the manner of use of the information or product and potential infringement is the sole responsibility of the user.

**

MSDS PREPARED BY: Jeremy Heath, EH&S Specialist



Date: 8/27/2009
Revision: 05

Material Safety Data Sheet

SeaKlear: Metal Klear

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: HaloSource, Inc.
Corporate Address: 1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone: (425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone (24 Hours): 800-424-9300 CHEMTREC (Domestic, North America)
703-527-3887 CHEMTREC (International, collect calls accepted)
Material/Trade/Product Name: **SeaKlear: Metal Klear**
Synonyms: None
Chemical Name: Not available
Chemical Formula: Not available
CAS#: Not applicable, this product is a mixture.
EPA Re. No.: Not applicable
Product Use: Multi-purpose stain control product.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS#	COMPONENT	%	OSHA HAZARDOUS?
Proprietary	Proprietary	Proprietary	NO
Proprietary	Proprietary	Proprietary	YES

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Rose to lavender liquid with no odor.

WARNING! May be harmful. May cause severe burns of respiratory and digestive tracts. Causes severe burns of the eyes and skin.

POTENTIAL HEALTH EFFECTS

EYE: Can cause permanent eye injury. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure the cornea and cause blindness.

SKIN: Can cause permanent skin damage. Symptoms may include redness, burning, and swelling of skin, burns, and other skin damage. The feeling of irritation or pain may not occur until several hours after the exposure. Additional symptoms of skin contact may include: hair loss Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

INHALATION: It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing this material may be harmful or fatal. Symptoms may include severe irritation and burns to the nose, throat, and respiratory tract. Symptoms are not expected at air concentrations below the recommended exposure limits

INGESTION: Swallowing this material may be harmful or fatal. Symptoms may include severe stomach and intestinal irritation (nausea, vomiting, diarrhea), abdominal pain, and vomiting of blood. Swallowing this material may cause burns and destroy tissue in the mouth, throat, and digestive tract. Low blood pressure and shock may occur as a result of severe tissue injury.

CHRONIC EXPOSURE/CARCINOGENICITY: There is no information available. The chance of this material causing cancer is unknown. This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

AGGRAVATION OF PRE-EXISTING CONDITIONS: Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: upper respiratory tract, Skin, lung (for example, asthma-like conditions)

POTENTIAL ENVIRONMENTAL EFFECTS: See Section 12. Ecological Information.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: Wash immediately and continuously with flowing water for at least 15 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

SKIN CONTACT: Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash clothing before reuse and discard contaminated shoes.

INHALATION: If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

INGESTION: Seek immediate medical attention. Do not induce vomiting. Vomiting will cause further damage to the mouth and throat. If individual is conscious and alert, immediately rinse mouth with water and give milk or water to drink. If possible, do not leave individual unattended.

NOTE TO PHYSICIANS: None

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Not available

UPPER FLAMMABLE LIMIT: Not available

FLAMMABILITY CLASS (OSHA): Not applicable

AUTOIGNITION TEMPERATURE: Not available

LOWER FLAMMABLE LIMIT: Not available

FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: None known

HAZARDOUS COMBUSTION PRODUCTS: May form: carbon oxides, nitrogen oxides, toxic fumes

EXTINGUISHING MEDIA: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

PROTECTION OF FIREFIGHTERS: Keep people away. Isolate fire area and deny unnecessary entry. To extinguish combustible residues of this product, use water fog, carbon dioxide, dry chemical, or foam. Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, pants, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with SCBA and fight fire from a remote location.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: See Section 12. Ecological Information.

METHODS FOR CLEANING UP: Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers. Scoop and sweep up all spilled product and other contaminated materials and place in marked disposal containers. If possible, clean up spill area on a dry basis and then flush with plenty of water. Absorb liquid on vermiculite, floor absorbent or other absorbent material.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING RECOMMENDATIONS

VENTILATION: Use only with adequate ventilation.

FIRE PREVENTION: No special requirements.

SPECIAL HANDLING REQUIREMENTS: Use appropriate PPE (see Section 8). Do not get in eyes. Avoid breathing mist. Avoid contact with skin or clothing. Wash thoroughly after handling.

SAFE STORAGE RECOMMENDATIONS

CONTAINMENT: Keep container closed when not in use.

STORAGE ROOM RECOMMENDATIONS: Storage temperature: 0 to 120 deg F (-17.7C to 48.9C).

STORAGE CONDITIONS: Product solutions are corrosive to many commonly used materials of construction such as steel, galvanized iron, aluminum, tin and zinc. These solutions can be stored and handled in baked phenolic-lined steel, polyethylene, stainless steel, or reinforced epoxyplastic equipment.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: General ventilation is sufficient for most conditions. Local exhaust may be necessary for some operations.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: Use chemical goggles. Eye wash fountain should be located in work area.

SKIN PROTECTION: Wear clean, long sleeved, body-covering clothing.

HAND PROTECTION: Use gloves chemically resistant to this material. When prolonged or frequently repeated contact could occur, use chemically protective clothing resistant to this material. If hands are cut or scratched, use gloves chemically resistant to this material, even for brief exposures.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

GOOD HYGIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

PERMISSIBLE EXPOSURE LIMITS						
INGREDIENT CAS NO.	OSHA		WISHA		ACGIH (TLV)	
	TWA	STEL	TWA	STEL	TWA	STEL
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Rose to lavender

PHYSICAL FORM: Liquid

pH: 10.5

VAPOR DENSITY: 0.6 (AIR=1)

MELTING POINT: Not available

SOLUBILITY IN WATER: Not available

SHAPE: Liquid

ODOR: None

VAPOR PRESSURE: 17.50 mmHg @ 68.00 °F / 20.00 °C

BOILING POINT: 219.00 °F / 219 °F @ 760.00 mmHg

FREEZING POINT: Not available

SPECIFIC GRAVITY OR DENSITY: 1.05 g/mL

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID: None known.

MATERIALS TO AVOID (INCOMPATIBILITY): Avoid contact with:, reactive metals such as aluminum and magnesium, steel, strong mineral acids, strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS: May form: carbon oxides, nitrogen oxides (NOx), toxic fumes

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

ORAL LD₅₀ (rat): Not available.

DERMAL LD₅₀ (rabbit): Not available.

SKIN IRRITATION: Not available.

EYE IRRITATION: Not available.

SKIN SENSITIZATION: Not available.

ADDITIONAL INFORMATION: None.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.

MOBILITY: Not available.

PERSISTENCE AND DEGRADABILITY: Not available.

BIOACCUMULATIVE POTENTIAL: Not available.

ADDITIONAL INFORMATION: None available.

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Proper Shipping Name:	Not regulated.
Hazard Class:	Not regulated.
Identification Number (UN Number):	Not regulated.
Packing Group (PG):	Not regulated.

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: All ingredients are on the TSCA inventory or are not required to be listed.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
---------------	-----	----

Not applicable	Not applicable	Not applicable
----------------	----------------	----------------

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
YES	NO	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity: NONE

SECTION 16: OTHER INFORMATION

REVISION INFORMATION:

MSDS sections(s) changed since last revision of document:

- Color, pH, and specific gravity updated
- Composition updated

DISCLAIMER:

The above information is based upon information HaloSource, Inc. believes to be reliable and is supplied for informational purposes only. HaloSource, Inc. disclaims any liability for damage which results from the use of the above information and nothing contained therein shall constitute a guarantee, warranty (including fitness for a particular purpose) or representation with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose even if that purpose is known to HaloSource, Inc. The final determination of the suitability of the information, the manner of use of the information or product and potential infringement is the sole responsibility of the user.

MSDS PREPARED BY: Jeremy Heath, EH&S Manager

Material Safety Data Sheet

SeaKlear: Metal Stain Control

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: HaloSource, Inc.
Corporate Address: 1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone: (425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone: **800-424-9300 Chemtrec** (24 Hours)
Material/Trade/Product Name: **SeaKlear: Metal Stain Control**
Synonyms: None
Chemical Name: Not available
Chemical Formula: Not available
CAS No.: Not applicable
EPA Re. No.: Not applicable
Product Use: Metallic stain removal and prevention of hard water scaling in swimming pools.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	COMPONENT	%	OSHA HAZARDOUS ?
Not Applicable	Acrylamide-Acrylic Acid Copolymer	Proprietary	Yes
<i>Trade Secret</i>	<i>Trade Secret</i>	<i>Trade Secret</i>	Yes

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Colorless to slightly hazy liquid with a slight odor.

WARNING! Corrosive to eyes and skin. May be harmful if inhaled or ingested.

POTENTIAL HEALTH EFFECTS

EYE: Corrosive to eyes. Redness, watering, and itching characterize inflammation of the eye.

SKIN: Corrosive to skin. Skin contact may produce burns. Itching, scaling, reddening, or blistering characterizes skin inflammation.

INHALATION: May be harmful if inhaled. Do not breathe spray mists of the undiluted product. Effects will depend upon solution strength and length of time of exposure.

INGESTION: May be harmful if ingested.

CHRONIC EXPOSURE/CARCINOGENICITY: Not listed as a carcinogen by OHSA, IARC, or NTP.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Redness, watering, and itching characterize inflammation of the eye. Skin contact may produce burns. Itching, scaling, reddening, or blistering characterizes skin inflammation.

AGGRAVATION OF PRE-EXISTING CONDITIONS: None known.

POTENTIAL ENVIRONMENTAL EFFECTS: None known.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: In case of contact, hold eyelids apart and immediately flush eyes with a steady, gentle stream of water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: In case of contact, immediately wash with plenty water. Repeat washing. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use. If irritation persists consult a health care professional.

INHALATION: Immediately remove victim to fresh air. If individual experiences nausea, headache, or dizziness, has difficulty in breathing or is cyanotic, seek medical attention.

INGESTION: Do not induce vomiting. Rinse with copious amounts of water or milk. Irrigate the esophagus and dilute stomach contents by slowly giving one (1) to two (2) glasses of water or milk. Avoid giving alcohol or alcohol related products. Incases where the individual is semi-comatose, comatose or convulsing, do not give fluids by mouth. In case of intentional ingestion of the product, seek medical assistance immediately; take individual to nearest medical facility.

NOTE TO PHYSICIANS: Not available.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: >100°C

UPPER FLAMMABLE LIMIT: Not available

FLAMMABILITY CLASS (OSHA): Not applicable

AUTOIGNITION TEMPERATURE: Not available

LOWER FLAMMABLE LIMIT: Not available

FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: None known

HAZARDOUS COMBUSTION PRODUCTS: None known, but carbon monoxide may be formed upon burning.

EXTINGUISHING MEDIA: Water fog, carbon dioxide, foam or dry chemical.

PROTECTION OF FIREFIGHTERS: Firefighters should wear positive pressure self-contained breathing apparatus and full turnout gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: None known.

METHODS FOR CLEANING UP: Minimize area affected by spill or leak. Block any potential routes to water systems. Recover as much of the pure product as possible into appropriate containers. Clay, soil, or commercially available absorbents may be used to recover any material that cannot readily be recovered as pure product. Ensure that product does not come into contact with incompatible materials.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING RECOMMENDATIONS

VENTILATION: Use dilution ventilation to control vapor and/or mist level.

FIRE PREVENTION: No special requirements.

SPECIAL HANDLING REQUIREMENTS: Use appropriate PPE (see Section 8).

SAFE STORAGE RECOMMENDATIONS

CONTAINMENT: Keep container closed when not in use.

STORAGE ROOM RECOMMENDATIONS: No special requirements.

INCOMPATIBLE MATERIALS: Steel, strong bases, strong oxidizers and strong alkali.

STORAGE CONDITIONS: No special requirements.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use dilution ventilation to control vapor and/or mist level.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: Wear safety glasses with side shields or goggles.

SKIN PROTECTION: Chemical resistant apron and shoes is recommended.

HAND PROTECTION: Chemical resistant gloves.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

GOOD HYGIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

PERMISSIBLE EXPOSURE LIMITS						
INGREDIENT CAS NO.	OSHA		WISHA		ACGIH (TLV)	
	TWA	STEL	TWA	STEL	TWA	STEL
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**COLOR:** Colorless to slightly hazy**PHYSICAL FORM:** Liquid**pH:** 4.3**VAPOR DENSITY:** Not available**MELTING POINT:** Not available**SOLUBILITY IN WATER:** Soluble in cold and hot water**SHAPE:** Liquid**ODOR:** Slight odor**VAPOR PRESSURE:** Not available**BOILING POINT:** >100°C**FREEZING POINT:** Not available**SPECIFIC GRAVITY OR DENSITY:** Not available

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY**CHEMICAL STABILITY:** Stable under normal conditions.**CONDITIONS TO AVOID:** Elevated temperatures and heat.**MATERIALS TO AVOID (INCOMPATIBILITY):** Steel, strong bases, strong oxidizers and strong alkali.**HAZARDOUS DECOMPOSITION PRODUCTS:** None known, but carbon monoxide may be formed upon burning.**HAZARDOUS POLYMERIZATION:** Will not occur.**SECTION 11: TOXICOLOGICAL INFORMATION****ORAL LD₅₀ (rat):** >2000 MG/KG**DERMAL LD₅₀ (rabbit):** > 2000 MG/KG**SKIN IRRITATION:** Corrosive**EYE IRRITATION:** Corrosive**SKIN SENSITIZATION:** Not available.**ADDITIONAL INFORMATION:** Not available.**SECTION 12: ECOLOGICAL INFORMATION****ECOTOXICITY:** Not available.

MOBILITY: Not available.

PERSISTENCE AND DEGRADABILITY: Not available.

BIOACCUMULATIVE POTENTIAL: Not available.

ADDITIONAL INFORMATION: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Proper Shipping Name: Corrosive liquids, n.o.s., (Acrylamide-acrylic acid copolymer)
Hazard Class: 8
Identification Number (UN Number): UN1760
Packing Group (PG): III

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: Components are listed

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
Not applicable	Not applicable

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
YES	NO	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

SECTION 16: OTHER INFORMATION**REVISION INFORMATION:**

MSDS sections(s) changed since last revision of document: Not applicable.

DISCLAIMER:

**

The above information is based upon information HaloSource, Inc. believes to be reliable and is supplied for informational purposes only. HaloSource, Inc. disclaims any liability for damage which results from the use of the above information and nothing contained therein shall constitute a guarantee, warranty (including fitness for a particular purpose) or representation with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose even if that purpose is known to HaloSource, Inc. The final determination of the suitability of the information, the manner of use of the information or product and potential infringement is the sole responsibility of the user.

**

MSDS PREPARED BY: Jeremy Heath, EH&S Specialist

Material Safety Data Sheet

SeaKlear: Natural Stain Remover

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: HaloSource, Inc.
Corporate Address: 1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone: (425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone: **800-424-9300 Chemtrec** (24 Hours)
Material/Trade/Product Name: **SeaKlear: Natural Stain Remover**
Synonyms: None
Chemical Name: 2-Hydroxy-1, 2,3 Propanetricarboxylic Acid
Chemical Formula: Not available
CAS No.: 77-92-9
EPA Re. No.: Not applicable
Product Use: Effective in removal of metallic stains in swimming pools.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	COMPONENT	%	OSHA HAZARDOUS?
77-92-9	Citric Acid	100	Yes

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Odorless white crystals.

CAUTION: Causes severe eye irritation. Causes respiratory tract and skin irritation.

POTENTIAL HEALTH EFFECTS

EYE: Irritating to eyes resulting in stinging reddening, tearing and swelling.

SKIN: Irritating to skin resulting in reddening, stinging, and swelling.

INHALATION: Causes respiratory tract irritation

INGESTION: No known acute effects of this product resulting from ingestion.

CHRONIC EXPOSURE/CARCINOGENICITY: Not listed as a carcinogen by OHSA, IARC, or NTP.

AGGRAVATION OF PRE-EXISTING CONDITIONS: None known.

POTENTIAL ENVIRONMENTAL EFFECTS: None known.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: In case of contact, hold eyelids apart and immediately flush eyes with a steady, gentle stream of water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: In case of contact, immediately wash with plenty water. Repeat washing. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use. If irritation persists consult a health care professional.

INHALATION: Immediately remove victim to fresh air. If individual experiences nausea, headache, or dizziness, has difficulty in breathing or is cyanotic, seek medical attention.

INGESTION: Do not induce vomiting. Rinse with copious amounts of water or milk. Irrigate the esophagus and dilute stomach contents by slowly giving one (1) to two (2) glasses of water or milk. Avoid giving alcohol or alcohol related products. Incases where the individual is semi-comatose, comatose or convulsing, do not give fluids by mouth. In case of intentional ingestion of the product, seek medical assistance immediately; take individual to nearest medical facility.

NOTE TO PHYSICIANS: Not available.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Not available

UPPER FLAMMABLE LIMIT: Not available

FLAMMABILITY CLASS (OSHA): Not applicable

AUTOIGNITION TEMPERATURE: Not available

LOWER FLAMMABLE LIMIT: Not available

FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: None known

HAZARDOUS COMBUSTION PRODUCTS: None known.

EXTINGUISHING MEDIA: Water fog, carbon dioxide, foam or dry chemical.

PROTECTION OF FIREFIGHTERS: Firefighters should wear positive pressure self-contained breathing apparatus and full turnout gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: None known.

METHODS FOR CLEANING UP: Clean by vacuum or broom and remove to disposal container.

SECTION 7: HANDLING AND STORAGE**SAFE HANDLING RECOMMENDATIONS**

VENTILATION: Use dilution ventilation to control dust level.

FIRE PREVENTION: No special requirements.

SPECIAL HANDLING REQUIREMENTS: Use appropriate PPE (see Section 8).

SAFE STORAGE RECOMMENDATIONS

CONTAINMENT: Keep container closed when not in use.

STORAGE ROOM RECOMMENDATIONS: Max. 207°C (product deteriorates).

INCOMPATIBLE MATERIALS: Reaction with caustic can create heat (strong exotherm). Solutions are mildly corrosive to carbon steel.

STORAGE CONDITIONS: Max. 207°C (product deteriorates).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use dilution ventilation to control dust level.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: Chemical splash goggles.

SKIN PROTECTION: Long sleeve shirts and pants are recommended to avoid skin contact.

HAND PROTECTION: Chemical resistant gloves.

RESPIRATORY PROTECTION: A dust respirator is recommended. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

GOOD HYGIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

PERMISSIBLE EXPOSURE LIMITS						
INGREDIENT CAS NO.	OSHA		WISHA		ACGIH (TLV)	
	TWA	STEL	TWA	STEL	TWA	STEL
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

COLOR: White**PHYSICAL FORM:** Solid**pH:** Not available**VAPOR DENSITY:** Not available**MELTING POINT:** Not available**SOLUBILITY IN WATER:** 59.2 g/100G at 68F**SHAPE:** Crystals**ODOR:** None**VAPOR PRESSURE:** Not available**BOILING POINT:** Not available**FREEZING POINT:** Not available**SPECIFIC GRAVITY OR DENSITY:** 1.665

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions.**CONDITIONS TO AVOID:** Reaction with caustic can create heat (strong exotherm). Solutions are mildly corrosive to carbon steel.**MATERIALS TO AVOID (INCOMPATIBILITY):** Reaction with caustic can create heat (strong exotherm). Solutions are mildly corrosive to carbon steel.**HAZARDOUS DECOMPOSITION PRODUCTS:** In case of fire, carbon monoxide, carbon dioxide, and other potentially toxic fumes.**HAZARDOUS POLYMERIZATION:** Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

ORAL LD₅₀ (rat): Not available.**DERMAL LD₅₀ (rabbit):** Not available.**SKIN IRRITATION:** Not available.**EYE IRRITATION:** Not available.**SKIN SENSITIZATION:** Not available.**ADDITIONAL INFORMATION:** Not available.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.**MOBILITY:** Not available.**PERSISTENCE AND DEGRADABILITY:** Not available.**BIOACCUMULATIVE POTENTIAL:** Not available.**ADDITIONAL INFORMATION:** Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION**U.S. DEPARTMENT OF TRANSPORTATION (DOT):**

Proper Shipping Name:	Not Regulated
Hazard Class:	Not Regulated
Identification Number (UN Number):	Not Regulated
Packing Group (PG):	Not Regulated

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: Listed

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
Not applicable	Not applicable

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
YES	NO	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

SECTION 16: OTHER INFORMATION

REVISION INFORMATION:

MSDS sections(s) changed since last revision of document: Not applicable.

DISCLAIMER:

The above information is based upon information HaloSource, Inc. believes to be reliable and is supplied for informational purposes only. HaloSource, Inc. disclaims any liability for damage which results from the use of the above information and nothing contained therein shall constitute a guarantee, warranty (including fitness for a particular purpose) or representation with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose even if that purpose is known to HaloSource, Inc. The final determination of the suitability of the information, the manner of use of the information or product and potential infringement is the sole responsibility of the user.

MSDS PREPARED BY: Jeremy Heath, EH&S Specialist



Date: 7/9/2009
Revision: 01

Material Safety Data Sheet

SeaKlear Aquaria: Phosphate Remover

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: HaloSource, Inc.
Corporate Address: 1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone: (425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone (24 Hours): 800-424-9300 CHEMTREC (Domestic, North America)
703-527-3887 CHEMTREC (International, collect calls accepted)
Material/Trade/Product Name: **SeaKlear Aquaria: Phosphate Remover**
Synonyms: None
Chemical Name: Proprietary
Chemical Formula: Proprietary
CAS No.: Not applicable.
EPA Registration #: Not applicable
Product Use: Removes phosphates from aquarium water

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	COMPONENT	%	OSHA HAZARDOUS?
Proprietary	Lanthanum salt derivative	37	YES
	<i>All other components are non-hazardous.</i>	63	NO

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Clear to light orange liquid.

Can cause irritation to exposed areas of body. Severity of injury depends largely on duration of exposure.
Immediate action is necessary to limit severity of injury.

Hydrogen chloride will be produced from decomposition.

POTENTIAL HEALTH EFFECTS

EYE: May cause irritation.

SKIN: Not likely to cause skin irritation.

INHALATION: Should not be harmful if inhaled.

INGESTION: Possible irritant if swallowed.

CHRONIC EXPOSURE/CARCINOGENICITY: This substance not listed as a potential carcinogen by IARC.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Eye irritation.

AGGRAVATION OF PRE-EXISTING CONDITIONS: None known.

POTENTIAL ENVIRONMENTAL EFFECTS: None known.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes, lifting eyelids occasionally. Get medical attention at once.

SKIN CONTACT: Remove contaminated clothing and immediately wash exposed area for 15 minutes. Get medical attention if necessary.

INHALATION: Move to fresh air. If breathing has stopped administer artificial respiration. Get medical attention immediately.

INGESTION: Give large amounts of water. Do not induce vomiting. Get medical attention immediately.

NOTE TO PHYSICIANS: None.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Not available

UPPER FLAMMABLE LIMIT: Not available

FLAMMABILITY CLASS (OSHA): Not applicable

AUTOIGNITION TEMPERATURE: Not available

LOWER FLAMMABLE LIMIT: Not available

FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: HCl is produced.

HAZARDOUS COMBUSTION PRODUCTS: HCl is produced.

EXTINGUISHING MEDIA: Use water, dry chemicals, carbon dioxide, sand or foam. Use extinguishing media appropriate for surrounding fire.

PROTECTION OF FIREFIGHTERS: Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coat, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Water may be used to keep fire-exposed containers cool until fire is out.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: None

METHODS FOR CLEANING UP: Contain large spills and pump to recover. Small spills can be mopped up and recovered.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING RECOMMENDATIONS

VENTILATION: Use general ventilation

FIRE PREVENTION: Not flammable

SPECIAL HANDLING REQUIREMENTS: Use appropriate PPE

SAFE STORAGE RECOMMENDATIONS

CONTAINMENT: Secondary containment is recommended.

STORAGE ROOM RECOMMENDATIONS: Store in cool, dry place. Keep container closed when not in use; keep out of the reach of children.

INCOMPATIBLE MATERIALS: None known.

STORAGE CONDITIONS: Store in cool, dry place. Keep container closed when not in use; keep out of the reach of children.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: General ventilation

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: Safety glasses are recommended under normal conditions.

SKIN PROTECTION: Avoid contact with skin.

HAND PROTECTION: Chemical resistant gloves are recommended to minimize potential irritation from handling.

RESPIRATORY PROTECTION: None required where adequate ventilation conditions exist.

GOOD HYGIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

[illegible]

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**COLOR:** Clear to light orange**PHYSICAL FORM:** Liquid**pH:** Not applicable**VAPOR DENSITY:** 4.10**MELTING POINT:** Not known**SOLUBILITY IN WATER:** Fully soluble**SHAPE:** Liquid**ODOR:** None**VAPOR PRESSURE:** Not known**BOILING POINT:** Not known**FREEZING POINT:** Not known**SPECIFIC GRAVITY OR DENSITY:** 1.6

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY**CHEMICAL STABILITY:** Stable**CONDITIONS TO AVOID:** None known**MATERIALS TO AVOID (INCOMPATIBILITY):** None known**HAZARDOUS DECOMPOSITION PRODUCTS:** Hydrogen Chloride**HAZARDOUS POLYMERIZATION:** Will not occur**SECTION 11: TOXICOLOGICAL INFORMATION****ORAL LD₅₀ (rat):** Not available**DERMAL LD₅₀ (rabbit):** Not available**DERMAL LD₅₀ (rat):** Not available

SKIN IRRITATION: No signs or erythema or edema were noted at any observation point. Based upon the evaluation criteria of the protocol, this substance is considered a non-irritant.

EYE IRRITATION: Not available**SKIN SENSITIZATION:** Not available**ADDITIONAL INFORMATION:** Not available**SECTION 12: ECOLOGICAL INFORMATION****ECOTOXICITY:** Not available**MOBILITY:** Not available**PERSISTENCE AND DEGRADABILITY:** Not available**BIOACCUMULATIVE POTENTIAL:** Not available

ADDITIONAL INFORMATION: Not available

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Proper Shipping Name:	Not Regulated
Hazard Class:	Not Regulated
Identification Number (UN Number):	Not Regulated
Packing Group (PG):	Not Regulated

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: Components are listed

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
Not applicable	Not applicable

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
YES	NO	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
---------------	---------	-------------------

Not applicable	Not applicable	Not applicable
----------------	----------------	----------------

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

SECTION 16: OTHER INFORMATION

REVISION INFORMATION:

MSDS sections(s) changed since last revision of document:

- Section 1 – Emergency telephone number updated
- Section 2 – Potential health effects on skin updated
- Section 9 – Color, solubility, and specific gravity updated
- Section 11 – Most of the information in this section was updated
- Section 13 – Changed statement from “does” to “does not” meet the criteria of hazardous waste under RCRA.

DISCLAIMER:

The above information is based upon information HaloSource, Inc. believes to be reliable and is supplied for informational purposes only. HaloSource, Inc. disclaims any liability for damage which results from the use of the above information and nothing contained therein shall constitute a guarantee, warranty (including fitness for a particular purpose) or representation with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose even if that purpose is known to HaloSource, Inc. The final determination of the suitability of the information, the manner of use of the information or product and potential infringement is the sole responsibility of the user.

MSDS PREPARED BY: Jeremy Heath, EH&S Manager

Material Safety Data Sheet

SeaKlear Aquaria: PRS – Stage One

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: HaloSource, Inc.
Corporate Address: 1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone: (425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone (24 Hours): 800-424-9300 CHEMTREC (Domestic, North America)
703-527-3887 CHEMTREC (International, collect calls accepted)
Material/Trade/Product Name: SeaKlear Aquaria: PRS – Stage One
Synonyms: PRS 1, PRS I, Test Polymer A
Chemical Name: Chitosan Acetate Solution
Chemical Formula: Not available
CAS No.: Not applicable
EPA Registration #: Not applicable
Product Use: Aquarium water treatment.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	COMPONENT	%	OSHA HAZARDOUS?
Trade Secret	Trade Secret	2	NO
	<i>All other components are non-hazardous.</i>	98	NO

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Clear to pale yellow viscous liquid with a pungent vinegar odor.

May be mildly irritating to eyes. Not likely to be hazardous to skin, respiratory tract, or by ingestion.

POTENTIAL HEALTH EFFECTS

EYE: May be mildly irritating to eyes.

SKIN: Not hazardous to skin.

INHALATION: Not likely to be hazardous by inhalation.

INGESTION: Not likely to be hazardous by ingestion.

CHRONIC EXPOSURE/CARCINOGENICITY: None of the components present in this material at concentrations of equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Eye irritation.

AGGRAVATION OF PRE-EXISTING CONDITIONS: None known.

POTENTIAL ENVIRONMENTAL EFFECTS: Material is 100% biodegradable and nontoxic.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: Remove contact lenses (if applicable), flush with water for 15 minutes. Call a physician.

SKIN CONTACT: Cleansing the skin after exposure is advisable.

INHALATION: If large amounts of fumes are inhaled, remove to fresh air and consult a physician.

INGESTION: Consult a physician if necessary.

NOTE TO PHYSICIANS: None.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Not available

UPPER FLAMMABLE LIMIT: Not available

FLAMMABILITY CLASS (OSHA): Not applicable

AUTOIGNITION TEMPERATURE: Not available

LOWER FLAMMABLE LIMIT: Not available

FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: None known.

HAZARDOUS COMBUSTION PRODUCTS: None.

EXTINGUISHING MEDIA: Does not burn. Use water, dry chemicals, carbon dioxide, sand or foam. Use extinguishing media appropriate for surrounding fire.

PROTECTION OF FIREFIGHTERS: Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coat, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Water may be used to keep fire-exposed containers cool until fire is out.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: Material is 100% biodegradable and nontoxic.

METHODS FOR CLEANING UP: Dilute with water and hose down.

SECTION 7: HANDLING AND STORAGE

SAFE *HANDLING* RECOMMENDATIONS

VENTILATION: General ventilation should be sufficient under normal conditions.

FIRE PREVENTION: Non-flammable, no special fire protection required.

SPECIAL HANDLING REQUIREMENTS: Avoid eye contact.

SAFE STORAGE RECOMMENDATIONS

CONTAINMENT: The container should be kept covered to prevent contamination.

STORAGE ROOM RECOMMENDATIONS: Store in a cool, dry, well-ventilated area away from direct heat.

INCOMPATIBLE MATERIALS: Strong oxidizing material and strong bases.

STORAGE CONDITIONS: 10-50°C recommended (will freeze @ ~3°C). Shelf life is indefinite but viscosity will decrease over time.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: General ventilation should be sufficient under normal conditions.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: Safety glasses recommended.

SKIN PROTECTION: For operations where skin contact can occur, wear impervious clothing such as apron, boots, or whole bodysuit.

HAND PROTECTION: For operations where hand contact can occur, rubber gloves recommended.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Respirator use is not required for this product.

GOOD HYGEIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

[illegible]

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**COLOR:** Clear to pale yellow.**PHYSICAL FORM:** Viscous liquid**pH:** 3.0-4.5**VAPOR DENSITY:** Not available**MELTING POINT:** Not available**SOLUBILITY IN WATER:** Soluble**SHAPE:** Viscous liquid**ODOR:** Pungent vinegar odor**VAPOR PRESSURE:** Not available**BOILING POINT:** 211°F**FREEZING POINT:** Not available**SPECIFIC GRAVITY OR DENSITY:** 1.0-1.1 g/mL

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY**CHEMICAL STABILITY:** Stable.**CONDITIONS TO AVOID:** Freezing temperatures or excess heat (for quality purposes).**MATERIALS TO AVOID (INCOMPATIBILITY):** Strong oxidizing material and strong bases.**HAZARDOUS DECOMPOSITION PRODUCTS:** Decomposition will not occur.**HAZARDOUS POLYMERIZATION:** Will not occur.**SECTION 11: TOXICOLOGICAL INFORMATION****ORAL LD₅₀ (rat):** Not available.**DERMAL LD₅₀ (rabbit):** Not available.**SKIN IRRITATION:** Not available.**EYE IRRITATION:** Not available.**SKIN SENSITIZATION:** Not available.**ADDITIONAL INFORMATION:****SECTION 12: ECOLOGICAL INFORMATION****ECOTOXICITY (in water):**

- Acute:
 - Daphnia LC 50 – 1369 mg/ L
 - Daphnia NOEC – 1000 mg/L
 - Fathead minnows LC 50 – 642 mg/L
 - Fathead minnows NOEC – 500 mg/L
 - Rainbow Trout LC 50 – 173mg/L
 - Rainbow Trout NOEC – 125 mg/L
- Chronic:
 - Rainbow Trout LC 50 – 154 mg /L

- Rainbow Trout LC 25 – 121 mg/L
- Fathead Minnow LC 50 - > 1000 mg/L
- Fathead Minnow LC25 – 932 mg/L

MOBILITY: Not available.

PERSISTENCE AND DEGRADABILITY: Not available.

BIOACCUMULATIVE POTENTIAL: Not available.

ADDITIONAL INFORMATION: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Proper Shipping Name:	Not Regulated
Hazard Class:	Not Regulated
Identification Number (UN Number):	Not Regulated
Packing Group (PG):	Not Regulated

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: The substances in this preparation are included on or exempted from the TSCA 8(b) inventory (40 CFR 710).

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
Not applicable	Not applicable

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
NO	NO	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

SECTION 16: OTHER INFORMATION**REVISION INFORMATION:**

MSDS sections(s) changed since last revision of document:

- Minor formatting changes throughout entire document.

DISCLAIMER:

The above information is based upon information HaloSource, Inc. believes to be reliable and is supplied for informational purposes only. HaloSource, Inc. disclaims any liability for damage which results from the use of the above information and nothing contained therein shall constitute a guarantee, warranty (including fitness for a particular purpose) or representation with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose even if that purpose is known to HaloSource, Inc. The final determination of the suitability of the information, the manner of use of the information or product and potential infringement is the sole responsibility of the user.

MSDS PREPARED BY: Jeremy Heath, EH&S Manager

Material Safety Data Sheet

SeaKlear Aquaria: PRS – Stage Two

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: HaloSource, Inc.
Corporate Address: 1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone: (425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone: **800-424-9300 Chemtrec** (24 Hours)
Material/Trade/Product Name: **SeaKlear Aquaria: PRS – Stage Two**
Synonyms: PRS 2, PRS II, Reagent 126P61-B
Chemical Name: Proprietary Blend
Chemical Formula: Not available
CAS No.: Not applicable
EPA Registration #: Not applicable
Product Use: Aquarium water treatment.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	COMPONENT	%	OSHA HAZARDOUS ?
	<i>No hazardous components above de minimus quantities</i>	<1	YES
	<i>All other components are non-hazardous.</i>	>99	NO

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Clear teal liquid.

This material presents little or no health hazards, environmental hazards, and no unusual hazard if involved in a fire.

POTENTIAL HEALTH EFFECTS

EYE: May be mildly irritating to eyes.

SKIN: Not hazardous to skin.

INHALATION: Not likely to be hazardous by inhalation.

INGESTION: Not likely to be hazardous by ingestion.

CHRONIC EXPOSURE/CARCINOGENICITY: This substance is not listed as a potential carcinogen by IARC.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: May irritate eyes with stinging, watering, inflammation.

AGGRAVATION OF PRE-EXISTING CONDITIONS: None known.

POTENTIAL ENVIRONMENTAL EFFECTS: Material is 100% biodegradable and is nontoxic.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: Remove contact lenses if worn and flush eyes with copious amounts of water or buffered saline eye wash solution. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing and wash contact area with mild soap and plenty of water.

INHALATION: Remove person to fresh air and treat symptomatically. Get medical attention if symptoms worsen.

INGESTION: Consult a physician if necessary.

NOTE TO PHYSICIANS: None.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Not available

UPPER FLAMMABLE LIMIT: Not available

FLAMMABILITY CLASS (OSHA): Not applicable

AUTOIGNITION TEMPERATURE: Not available

LOWER FLAMMABLE LIMIT: Not available

FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: None known.

HAZARDOUS COMBUSTION PRODUCTS: None known.

EXTINGUISHING MEDIA: Does not burn. Use water, dry chemicals, carbon dioxide, sand or foam. Use extinguishing media appropriate for surrounding fire.

PROTECTION OF FIREFIGHTERS: Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coat, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Water may be used to keep fire-exposed containers cool until fire is out.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: Material is 100% biodegradable, is nontoxic and can be disposed of in any approved manner. Treatment, storage, transportation and disposal must be in accordance with applicable federal, state, and local regulations.

METHODS FOR CLEANING UP: Dilute with water and hose down.

SECTION 7: HANDLING AND STORAGE**SAFE HANDLING RECOMMENDATIONS**

VENTILATION: Use with adequate ventilation.

FIRE PREVENTION: Material will not burn.

SPECIAL HANDLING REQUIREMENTS: Wash hands thoroughly after handling.

SAFE STORAGE RECOMMENDATIONS

CONTAINMENT: Keep container closed when not in use.

STORAGE ROOM RECOMMENDATIONS: 10-50°C (will freeze @ ~ 3°C)

INCOMPATIBLE MATERIALS: Strong oxidizing materials.

STORAGE CONDITIONS: Shelf life is indefinite, but viscosity will decrease over time. The container should be kept covered to prevent contamination.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Good general ventilation should be sufficient.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield.

SKIN PROTECTION: Wear chemical resistant clothing.

HAND PROTECTION: Wear chemical-resistant gloves.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

GOOD HYGIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

INGREDIENT CAS NO.	PERMISSIBLE EXPOSURE LIMITS					
	OSHA		WISHA		ACGIH (TLV)	
	TWA	STEL	TWA	STEL	TWA	STEL
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear teal liquid

SHAPE: Liquid

PHYSICAL FORM: Liquid

pH: 8.0 – 9.0

VAPOR DENSITY: Not applicable

MELTING POINT: Not available

SOLUBILITY IN WATER: Soluble

ODOR: Not applicable

VAPOR PRESSURE: Not applicable

BOILING POINT: 211°F

FREEZING POINT: ~ 3°C

SPECIFIC GRAVITY OR DENSITY: 1.0 – 1.1 g/mL

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

CONDITIONS TO AVOID: Will freeze @ ~ 3°C

MATERIALS TO AVOID (INCOMPATIBILITY): Strong oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition will not occur.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

ORAL LD₅₀ (rat): Not available.

DERMAL LD₅₀ (rabbit): Not available.

SKIN IRRITATION: Not available.

EYE IRRITATION: Not available.

SKIN SENSITIZATION: Not available.

ADDITIONAL INFORMATION: Not available.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.

MOBILITY: Not available.

PERSISTENCE AND DEGRADABILITY: Not available.

BIOACCUMULATIVE POTENTIAL: Not available.

ADDITIONAL INFORMATION: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Proper Shipping Name:	Not Regulated
Hazard Class:	Not Regulated
Identification Number (UN Number):	Not Regulated
Packing Group (PG):	Not Regulated

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: All ingredients are listed

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
None	Not applicable

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
NO	NO	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
---------------	---------	-------------------

Not applicable	Not applicable	Not applicable
----------------	----------------	----------------

SECTION 16: OTHER INFORMATION

REVISION INFORMATION:
MSDS sections(s) changed since last revision of document: Not Applicable.

DISCLAIMER:

**
The above information is based upon information HaloSource, Inc. believes to be reliable and is supplied for informational purposes only. HaloSource, Inc. disclaims any liability for damage which results from the use of the above information and nothing contained therein shall constitute a guarantee, warranty (including fitness for a particular purpose) or representation with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose even if that purpose is known to HaloSource, Inc. The final determination of the suitability of the information, the manner of use of the information or product and potential infringement is the sole responsibility of the user.

**

MSDS PREPARED BY: Jeremy Heath, EH&S Specialist

Material Safety Data Sheet

SeaKlear: Stain Klear

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: HaloSource, Inc.
Corporate Address: 1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone: (425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone: **800-424-9300 Chemtrec** (24 Hours)
Material/Trade/Product Name: **SeaKlear: Stain Klear**
Synonyms: Ethanedioic Acid, Dihydrate
Chemical Name: Oxalic Acid, Dihydrate
Chemical Formula: $C_2H_2O_4 \cdot 2H_2O$
CAS No.: 6153-56-6
EPA Re. No.: Not applicable
Product Use: Stain Remover for swimming pools.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	COMPONENT	%	OSHA HAZARDOUS?
6153-56-6	Oxalic Acid, Dihydrate	99 – 100	Yes

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Odorless, colorless, transparent crystalline.

WARNING! May be fatal if swallowed or inhaled. Can cause burns of the eyes and skin.
Avoid breathing dusts. Can cause permanent damage of the eyes. Can cause severe irritation of the respiratory system.

POTENTIAL HEALTH EFFECTS

EYE: Eye contact will cause severe irritation, pain, reddening, and possibly damage to the cornea. Depending on the duration of eye contact, damage to the cornea may be irreversible.

SKIN: Repeated or prolonged skin exposure can cause dermatitis and slow healing ulcers. Excessive contact may produce a delayed localized pain and discoloration of the skin with fingernails becoming brittle and blue with possible gangrenous ulcerations of the skin. Oxalic Acid may be absorbed via intact skin.

INGESTION: May irritate and cause burns of the mouth and throat. Symptoms may include burning pain of the mouth and throat. Symptoms may include burning pain of the mouth, throat and stomach followed by profuse vomiting. Small doses may cause headache, pain and twitching in muscles and cramps, while larger doses can cause weak and irregular heartbeat, drop in blood pressure and signs of heart failure. The fatal adult human dose is estimated to be 5 grams (0.18 oz.) A delayed effect of ingestion is kidney damage, possibly leading to renal failure.

INHALATION: Irritating to the nose, throat and respiratory tract with symptoms of sore throat, coughing and difficulty breathing. May cause inflammation of the respiratory tract.

CHRONIC EXPOSURE/CARCINOGENICITY: Chronic skin absorption of oxalic acid can lead to formation of kidney and urinary tract stones. Chronic inhalation of this product can result in the formation of kidney and urinary tract stones.

AGGRAVATION OF PRE-EXISTING CONDITIONS: None known.

POTENTIAL ENVIRONMENTAL EFFECTS: Non known.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if any adverse effect occurs.

SKIN: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

INGESTION: Do not induce vomiting. Have victim rinse mouth thoroughly with water, if conscious. Never give anything by mouth to an unconscious person or one who is having convulsions. Contact a physician or poison control center immediately.

INHALATION: Remove victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled substance; but induce artificial respiration with the aid of a mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get immediate medical attention.

NOTE TO PHYSICIANS: Provide general supportive measures and treat symptomatically. Treatment should be rapidly instituted by giving a dilute solution of calcium lactate, lime water, finely pulverized chalk, plaster, and/or milk to supply large amounts of calcium to inactivate oxalate by forming an insoluble calcium salt in the stomach. Gastric lavage is controversial, since this may compound an already severe corrosive lesion in the esophagus or stomach. However, if used, gastric lavage should be done with limewater (calcium hydroxide). Intravenous gluconate or calcium chloride solutions should be given to prevent hypocalcemic tetany; in severe cases, parathyroid extract has also been given. Additionally, acute renal failure should be anticipated, and careful fluid management is necessary. Metabolically its toxicity is believed to be due to the capacity of oxalic acid to immobilize calcium and thus upset the calcium-potassium ratio in critical tissues. Effective therapy against burns from oxalic acid involved replacement of calcium.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Not available

UPPER FLAMMABLE LIMIT: Not available

FLAMMABILITY CLASS (OSHA): Not applicable

AUTOIGNITION TEMPERATURE: Not available

LOWER FLAMMABLE LIMIT: Not available

FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: This product is a combustible solid, but must be substantially preheated before it ignites. This product is corrosive and presents a severe inhalation and contact hazard to firefighters.

HAZARDOUS COMBUSTION PRODUCTS: When involved in a fire, this material may decompose and produce irritating and toxic gases (e.g. carbon monoxide, carbon dioxide and formic acid.) Finely divided dusts of this material may cause a hazard of an air/dust explosion.

EXTINGUISHING MEDIA: Use Water spray, dry chemical, alcohol resistant foam, or carbon dioxide. Reduce dusts with water spray.

PROTECTION OF FIREFIGHTERS: Provide firefighters with self-contained breathing apparatus in positive pressure mode and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: Prevent spill rinsate from contamination of storm drains, sewers, soil or groundwater.

METHODS FOR CLEANING UP:

SMALL SPILL: Stop the flow of material. Contain the discharged material. If sweeping of area is necessary, use a dust suppressant agent which does not react with product.

LARGE SPILL: Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. Keep materials which can burn away from spilled materials.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING RECOMMENDATIONS

VENTILATION: Use with adequate ventilation.

FIRE PREVENTION: See Section 5.

SPECIAL HANDLING REQUIREMENTS: Avoid bodily contact. Wash hands thoroughly after handling.

SAFE STORAGE RECOMMENDATIONS

CONTAINMENT: Keep container closed when not in use.

STORAGE ROOM RECOMMENDATIONS: Keep in a well-ventilated room away from incompatible materials.

INCOMPATIBLE MATERIALS: Strong alkalines, strong oxidizers, chlorites and hypochlorites, and combustible materials. In contact with iron and iron compounds, this product may react rapidly to form ferric oxalate. Contact with silver may form explosive silver oxalate. Oxalic acid dihydrate solutions are corrosive to metals.

STORAGE CONDITIONS: Use corrosion resistant materials in storage area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne below recommended exposure limits. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield.

SKIN PROTECTION: Impervious clothing to prevent skin contact.

HAND PROTECTION: Impervious gloves.

RESPIRATORY PROTECTION: Use a dust mask/respirator. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

GOOD HYGIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

INGREDIENT CAS NO.	PERMISSIBLE EXPOSURE LIMITS					
	OSHA		WISHA		ACGIH (TLV)	
	TWA	STEL	TWA	STEL	TWA	STEL
144-62-7*	1 mg/m ³	None	1 mg/m ³	None	1 mg/m ³	2 mg/m ³

* Component of oxalic acid dihydrate is oxalic acid 144-62-7. Exposure limits listed are for oxalic acid.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Colorless, transparent

PHYSICAL FORM: Solid

pH: 1.3 (in 0.1m solution)

VAPOR DENSITY: 4.3

MELTING POINT: Not available

SOLUBILITY IN WATER: Freely soluble

SHAPE: Crystalline

ODOR: Odorless

VAPOR PRESSURE: < 0.001 mmHg at 20°C

BOILING POINT: Not available

FREEZING POINT: Not available

SPECIFIC GRAVITY OR DENSITY: 1.650

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Normally stable. If heated to melting point, sublimation and decomposition occurs.

CONDITIONS TO AVOID: Avoid high temperatures and ignition sources.

MATERIALS TO AVOID (INCOMPATIBILITY): Strong alkalines, strong oxidizers, chlorites and hypochlorites, and combustible materials. In contact with iron and iron compounds, this product may react rapidly to form ferric oxalate. Contact with silver may form explosive silver oxalate. Oxalic acid dihydrate solutions are corrosive to metals.

HAZARDOUS DECOMPOSITION PRODUCTS: Upon heating, water, carbon monoxide, carbon dioxide and formic acid are released.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

ORAL LD₅₀ (rat): 7500 mg/kg

DERMAL LD₅₀ (rabbit): 500 nig/24 hrs - mild irritation

INHALATION LC₅₀ (rabbit): Not available.

SKIN IRRITATION (rabbit): 500 nig/24 hrs - mild irritation

EYE IRRITATION (rabbit):

- Eye - (Rabbit, adult) 25 mg/24 hrs - severe irritation
- Eye - (Rabbit, adult) 100 mg/4 seconds - severe irritation

SKIN SENSITIZATION (guinea pig): Not known

ADDITIONAL INFORMATION: Intraperitoneal LD50 270 mg/kg (mouse)

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.

MOBILITY: Not available.

PERSISTENCE AND DEGRADABILITY: Not available.

BIOACCUMULATIVE POTENTIAL: Not available.

ADDITIONAL INFORMATION: Biodegrades at moderate rate. Product is essentially non-volatile in water. May react slowly in water with photo chemically produced OH radicals, but expected to be removed rapidly from surface water by direct photolysis. Not expected to bioconcentrate significantly in aquatic organisms.

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Proper Shipping Name:

Not Regulated

Hazard Class: Not Regulated
Identification Number (UN Number): Not Regulated
Packing Group (PG): Not Regulated

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: Not Listed

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
Not applicable	Not applicable

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
YES	YES	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

SECTION 16: OTHER INFORMATION

REVISION INFORMATION:

MSDS sections(s) changed since last revision of document: All references to corrosivity have been removed from throughout entire MSDS.

DISCLAIMER:

The above information is based upon information HaloSource, Inc. believes to be reliable and is supplied for informational purposes only. HaloSource, Inc. disclaims any liability for damage which results from the use of the

above information and nothing contained therein shall constitute a guarantee, warranty (including fitness for a particular purpose) or representation with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose even if that purpose is known to HaloSource, Inc. The final determination of the suitability of the information, the manner of use of the information or product and potential infringement is the sole responsibility of the user.

MSDS PREPARED BY: Jeremy Heath, EH&S Manager

Material Safety Data Sheet

SeaKlear: Stain Prevention & Remover

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: HaloSource, Inc.
Corporate Address: 1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone: (425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone: **800-424-9300 Chemtrec** (24 Hours)
Material/Trade/Product Name: **SeaKlear: Stain Prevention & Remover**
Synonyms: None
Chemical Name: Not available
Chemical Formula: Not available
CAS No.: Not applicable
EPA Re. No.: Not applicable
Product Use: Professional strength combination swimming pool stain removal and scale control product.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	COMPONENT	%	OSHA HAZARDOUS ?
Not Applicable	Acrylamide-Acrylic Acid Copolymer	Proprietary	Yes
<i>Trade Secret</i>	<i>Trade Secret</i>	<i>Trade Secret</i>	Yes

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Colorless to slightly hazy liquid with a slight odor.

WARNING! Corrosive to eyes and skin. May be harmful if inhaled or ingested.

POTENTIAL HEALTH EFFECTS

EYE: Corrosive to eyes. Redness, watering, and itching characterize inflammation of the eye.

SKIN: Corrosive to skin. Skin contact may produce burns. Itching, scaling, reddening, or blistering characterizes skin inflammation.

INHALATION: May be harmful if inhaled. Do not breathe spray mists of the undiluted product. Effects will depend upon solution strength and length of time of exposure.

INGESTION: May be harmful if ingested.

CHRONIC EXPOSURE/CARCINOGENICITY: Not listed as a carcinogen by OHSA, IARC, or NTP.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Redness, watering, and itching characterize inflammation of the eye. Skin contact may produce burns. Itching, scaling, reddening, or blistering characterizes skin inflammation.

AGGRAVATION OF PRE-EXISTING CONDITIONS: None known.

POTENTIAL ENVIRONMENTAL EFFECTS: None known.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: In case of contact, hold eyelids apart and immediately flush eyes with a steady, gentle stream of water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: In case of contact, immediately wash with plenty water. Repeat washing. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use. If irritation persists consult a health care professional.

INHALATION: Immediately remove victim to fresh air. If individual experiences nausea, headache, or dizziness, has difficulty in breathing or is cyanotic, seek medical attention.

INGESTION: Do not induce vomiting. Rinse with copious amounts of water or milk. Irrigate the esophagus and dilute stomach contents by slowly giving one (1) to two (2) glasses of water or milk. Avoid giving alcohol or alcohol related products. Incases where the individual is semi-comatose, comatose or convulsing, do not give fluids by mouth. In case of intentional ingestion of the product, seek medical assistance immediately; take individual to nearest medical facility.

NOTE TO PHYSICIANS: Not available.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: >100°C

UPPER FLAMMABLE LIMIT: Not available

FLAMMABILITY CLASS (OSHA): Not applicable

AUTOIGNITION TEMPERATURE: Not available

LOWER FLAMMABLE LIMIT: Not available

FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: None known

HAZARDOUS COMBUSTION PRODUCTS: None known, but carbon monoxide may be formed upon burning.

EXTINGUISHING MEDIA: Water fog, carbon dioxide, foam or dry chemical.

PROTECTION OF FIREFIGHTERS: Firefighters should wear positive pressure self-contained breathing apparatus and full turnout gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: None known.

METHODS FOR CLEANING UP: Minimize area affected by spill or leak. Block any potential routes to water systems. Recover as much of the pure product as possible into appropriate containers. Clay, soil, or commercially available absorbents may be used to recover any material that cannot readily be recovered as pure product. Ensure that product does not come into contact with incompatible materials.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING RECOMMENDATIONS

VENTILATION: Use dilution ventilation to control vapor and/or mist level.

FIRE PREVENTION: No special requirements.

SPECIAL HANDLING REQUIREMENTS: Use appropriate PPE (see Section 8).

SAFE STORAGE RECOMMENDATIONS

CONTAINMENT: Keep container closed when not in use.

STORAGE ROOM RECOMMENDATIONS: No special requirements.

INCOMPATIBLE MATERIALS: Steel, strong bases, strong oxidizers and strong alkali.

STORAGE CONDITIONS: No special requirements.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use dilution ventilation to control vapor and/or mist level.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: Wear safety glasses with side shields or goggles.

SKIN PROTECTION: Chemical resistant apron and shoes is recommended.

HAND PROTECTION: Chemical resistant gloves.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

GOOD HYGIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

PERMISSIBLE EXPOSURE LIMITS						
INGREDIENT CAS NO.	OSHA		WISHA		ACGIH (TLV)	
	TWA	STEL	TWA	STEL	TWA	STEL
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**COLOR:** Colorless to slightly hazy**PHYSICAL FORM:** Liquid**pH:** 4.3**VAPOR DENSITY:** Not available**MELTING POINT:** Not available**SOLUBILITY IN WATER:** Soluble in cold and hot water**SHAPE:** Liquid**ODOR:** Slight odor**VAPOR PRESSURE:** Not available**BOILING POINT:** >100°C**FREEZING POINT:** Not available**SPECIFIC GRAVITY OR DENSITY:** Not available

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY**CHEMICAL STABILITY:** Stable under normal conditions.**CONDITIONS TO AVOID:** Elevated temperatures and heat.**MATERIALS TO AVOID (INCOMPATIBILITY):** Steel, strong bases, strong oxidizers and strong alkali.**HAZARDOUS DECOMPOSITION PRODUCTS:** None known, but carbon monoxide may be formed upon burning.**HAZARDOUS POLYMERIZATION:** Will not occur.**SECTION 11: TOXICOLOGICAL INFORMATION****ORAL LD₅₀ (rat):** >2000 MG/KG**DERMAL LD₅₀ (rabbit):** > 2000 MG/KG**SKIN IRRITATION:** Corrosive**EYE IRRITATION:** Corrosive**SKIN SENSITIZATION:** Not available.**ADDITIONAL INFORMATION:** Not available.**SECTION 12: ECOLOGICAL INFORMATION****ECOTOXICITY:** Not available.

MOBILITY: Not available.

PERSISTENCE AND DEGRADABILITY: Not available.

BIOACCUMULATIVE POTENTIAL: Not available.

ADDITIONAL INFORMATION: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Proper Shipping Name:	Corrosive liquids, n.o.s., (Acrylamide-acrylic acid copolymer)
Hazard Class:	8
Identification Number (UN Number):	UN1760
Packing Group (PG):	III

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: Components are listed

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
Not applicable	Not applicable

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
YES	NO	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

SECTION 16: OTHER INFORMATION**REVISION INFORMATION:**

MSDS sections(s) changed since last revision of document: Not applicable.

DISCLAIMER:

**

The above information is based upon information HaloSource, Inc. believes to be reliable and is supplied for informational purposes only. HaloSource, Inc. disclaims any liability for damage which results from the use of the above information and nothing contained therein shall constitute a guarantee, warranty (including fitness for a particular purpose) or representation with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose even if that purpose is known to HaloSource, Inc. The final determination of the suitability of the information, the manner of use of the information or product and potential infringement is the sole responsibility of the user.

**

MSDS PREPARED BY: Jeremy Heath, EH&S Specialist



Date: 3/25/2010
Revision: 02

Material Safety Data Sheet

SeaKlear: Thick Tile & Vinyl Cleaner

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: HaloSource, Inc.
Corporate Address: 1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone: (425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone (24 Hours): 800-424-9300 CHEMTREC (Domestic, North America)
703-527-3887 CHEMTREC (International, collect calls accepted)
Material/Trade/Product Name: **SeaKlear: Thick Tile & Vinyl Cleaner**
Synonyms: None
Chemical Name: Not applicable
Chemical Formula: Not available
CAS No.: Not applicable
EPA Re. No.: Not applicable
Product Use: Removes film, oils, and scum lines from tile and vinyl on swimming pools.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	COMPONENT	%	OSHA HAZARDOUS?
7664-38-2	Phosphoric Acid	10 -15	YES
	<i>All other components are either non-hazardous or below de minimus quantities.</i>	85 - 90	

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Danger! Corrosive
Causes eye and skin damage. Do not breathe vapor or fumes. May be harmful or fatal if swallowed.
Blue liquid with no odor.

POTENTIAL HEALTH EFFECTS

EYE: Can cause permanent eye injury. Symptoms may include stinging, tearing, redness, pain, blurred vision and eye burns.

SKIN: Corrosive to tissue. May cause redness, pain and moderate to severe burns.

INHALATION: Inhalation is not an expected hazard unless misted or heated to high temperatures. Mist or vapor inhalation can cause irritation to the nose, throat and upper respiratory tract.

INGESTION: Harmful or fatal if swallowed. Corrosive – may cause sore throat, abdominal pain, nausea and severe burns of the mouth, throat and stomach.

CHRONIC EXPOSURE/CARCINOGENICITY: This substance is not listed as a potential carcinogen by IARC.

AGGRAVATION OF PRE-EXISTING CONDITIONS: None known.

POTENTIAL ENVIRONMENTAL EFFECTS: None known.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

SKIN CONTACT: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Get medical attention immediately.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

INGESTION: Seek medical attention immediately. Do not induce vomiting. If victim is alert, give ½ to 1 glass of water. Avoid alcohol. Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIANS: None available.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Not available

UPPER FLAMMABLE LIMIT: Not available

FLAMMABILITY CLASS (OSHA): Not applicable

AUTOIGNITION TEMPERATURE: Not available

LOWER FLAMMABLE LIMIT: Not available

FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: Phosphoric acid liberates explosive hydrogen gas when reacting with chlorides and stainless steel. Can react violently with sodium tetrahydroborate. Exothermic reactions with aldehydes, amines, amides, alcohols and glycols, azo-compounds, carbamates, esters, caustics, phenols, ketenes, organophosphates, epoxides, explosives, combustible materials, unsaturated halides, and organic peroxides. Phosphoric acid forms flammable gases with sulfides, mercaptans, cyanides and aldehydes. It also forms toxic fumes with cyanides, sulfide, fluorides, organic peroxides, and halogenated organics.

HAZARDOUS COMBUSTION PRODUCTS: None

EXTINGUISHING MEDIA: Use appropriate methods for combating surrounding fire.

PROTECTION OF FIREFIGHTERS: Wear a self-contained breathing apparatus with a full-face piece operated in the positive pressure demand mode. Chemical resistant PPE is recommended.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: Prevent runoff from entering drains, sewers or other bodies of water.

METHODS FOR CLEANING UP: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e.g., vermiculite, dry sand, earth) and place in a chemical waste container. Do not use saw dust. Do not flush to sewer.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING RECOMMENDATIONS

VENTILATION: Use adequate ventilation.

FIRE PREVENTION: Not applicable.

SPECIAL HANDLING REQUIREMENTS: Follow all MSDS/label precautions even after container is emptied because they may contain product residue.

SAFE STORAGE RECOMMENDATIONS

CONTAINMENT: Keep container closed when not in use.

STORAGE ROOM RECOMMENDATIONS: Store in a cool, dry place.

INCOMPATIBLE MATERIALS: Phosphoric acid liberates explosive hydrogen gas when reacting with chlorides and stainless steel. Can react violently with sodium tetrahydroborate. Exothermic reactions with aldehydes, amines, amides, alcohols and glycols, azo-compounds, arbamates, esters, caustics, phenols, ketenes, organophosphates, opoxides, explosives, combustible materials, unsaturated halides, and organic peroxides. Phosphoric acid forms flammable gases with sulfides, mercaptans, cyanides and aldehydes. It also forms toxic fumes with cyanides, sulfide, fluorides, organic peroxides, and halogenated organics.

STORAGE CONDITIONS: Store in a cool, dry place.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Good general ventilation required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: Wear safety goggles and face shield. Remove contact lenses.

SKIN PROTECTION: Wear impervious clothing and boots.

HAND PROTECTION: Wear impervious gloves (made from rubber, nitrile or neoprene).

RESPIRATORY PROTECTION: When respiratory protection is required, use an acid gas cartridge. A respiratory program that meets OSHA's 29 CFR 1910.32 & ANSI Z88.2 requirements must be followed.

GOOD HYGIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

PERMISSIBLE EXPOSURE LIMITS						
INGREDIENT CAS NO.	OSHA		WISHA		ACGIH (TLV)	
	TWA	STEL	TWA	STEL	TWA	STEL
7664-38-2	1 mg/m ³	None	1 mg/m ³	3 mg/m ³	1 mg/m ³	3 mg/m ³

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**COLOR:** Blue**PHYSICAL FORM:** Liquid**pH:** < 1.0**VAPOR DENSITY:** Not available**MELTING POINT:** Not applicable**SOLUBILITY IN WATER:** Miscible**SHAPE:** Liquid**ODOR:** None**VAPOR PRESSURE:** Not available**BOILING POINT:** Not available**FREEZING POINT:** Not known**SPECIFIC GRAVITY OR DENSITY:** 1.100

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY**CHEMICAL STABILITY:** Stable.**CONDITIONS TO AVOID:** High temperatures.

MATERIALS TO AVOID (INCOMPATIBILITY): Phosphoric acid liberates explosive hydrogen gas when reacting with chlorides and stainless steel. Can react violently with sodium tetrahydroborate. Exothermic reactions with aldehydes, amines, amides, alcohols and glycols, azo-compounds, arbamates, esters, caustics, phenols, ketenes, organophosphates, opoxides, explosives, combustible materials, unsaturated halides, and organic peroxides. Phosphoric acid forms flammable gases with sulfides, mercaptans, cyanides and aldehydes. It also forms toxic fumes with cyanides, sulfide, fluorides, organic peroxides, and halogenated organics.

HAZARDOUS DECOMPOSITION PRODUCTS: Phosphorous oxides may form when heated to decomposition.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

ORAL LD₅₀ (rat): 1530 mg/kg (Phosphoric acid)

DERMAL LD₅₀ (rabbit): Not available.

SKIN IRRITATION: Not available.

EYE IRRITATION: Not available.

SKIN SENSITIZATION: Not available.

ADDITIONAL INFORMATION: Phosphoric acid investigated as a mutagen.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.

MOBILITY: Not available.

PERSISTENCE AND DEGRADABILITY: Not available.

BIOACCUMULATIVE POTENTIAL: Not available.

ADDITIONAL INFORMATION: When released into the soil this material may leach into groundwater. When released to water, acidity may be readily reduced by natural water hardness minerals. The phosphate may persist indefinitely.

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION**U.S. DEPARTMENT OF TRANSPORTATION (DOT):**

Proper Shipping Name:	Corrosive liquid, n.o.s. (Phosphoric Acid)
Hazard Class:	8
Identification Number (UN Number):	UN1760
Packing Group (PG):	III

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: Components are listed

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
Phosphoric Acid	5000

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
YES	NO	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

SECTION 16: OTHER INFORMATION

REVISION INFORMATION:

MSDS sections(s) changed since last revision of document:

- Section 1 – emergency contact information updated
- Section 2 – components updated
- Section 5 – unique fire properties revised
- Section 6 – methods for cleaning up revised
- Section 7 – incompatible materials revised
- Section 9 – numerous physical properties revised/updated
- Section 10 – materials to avoid revised
- Section 11 & 12 – additional information added
- Section 14 – transportation information updated
- Section 15 – CERCLA RQ updated

DISCLAIMER:

The above information is based upon information HaloSource, Inc. believes to be reliable and is supplied for informational purposes only. HaloSource, Inc. disclaims any liability for damage which results from the use of the above information and nothing contained therein shall constitute a guarantee, warranty (including fitness for a particular purpose) or representation with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose even if that purpose is known to HaloSource, Inc. The final determination of the suitability of the information, the manner of use of the information or product and potential infringement is the sole responsibility of the user.

MSDS PREPARED BY: Jeremy Heath, EH&S Manager

MSDS Number: **S2954** * * * * * *Effective Date: 11/26/07* * * * * * *Supersedes: 05/23/06*

MSDS**Material Safety Data Sheet**

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865



Mallinckrodt
CHEMICALS



24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

SODIUM BICARBONATE

1. Product Identification

Synonyms: Sodium hydrogen carbonate; sodium acid carbonate; baking soda; bicarbonate of soda

CAS No.: 144-55-8

Molecular Weight: 84.01

Chemical Formula: NaHCO₃

Product Codes:

J.T. Baker: 3506, 3508, 3509, 3510

Mallinckrodt: 7285, 7396, 7397, 7412, 7749, 7903

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Sodium Bicarbonate	144-55-8	99 - 100%	No

3. Hazards Identification

Emergency Overview

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight

Flammability Rating: 1 - Slight

Reactivity Rating: 1 - Slight

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES; LAB COAT

Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation:

High concentrations of dust may cause coughing and sneezing.

Ingestion:

Extremely large oral doses may cause gastrointestinal disturbances.

Skin Contact:

No adverse effects expected.

Eye Contact:

Contact may cause mild irritation, redness, and pain.

Chronic Exposure:

No information found.

Aggravation of Pre-existing Conditions:

No information found.

4. First Aid Measures

Inhalation:

Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:

Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

Skin Contact:

Not expected to require first aid measures.

Eye Contact:

Wash thoroughly with running water. Get medical advice if irritation develops.

5. Fire Fighting Measures

Fire:

Not considered to be a fire hazard.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire.

Special Information:

Use protective clothing and breathing equipment appropriate for the surrounding fire.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. Small amounts of residue may be flushed to sewer with plenty of water.

7. Handling and Storage

Keep in a well closed container stored under cold to warm conditions, 2 to 40 C, (36 to 104F). Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

None established.

Ventilation System:

In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.

Personal Respirators (NIOSH Approved):

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:**

Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

White crystalline powder.

Odor:

Odorless.

Solubility:

7.8g/100g water @ 18C (64F).

Density:

2.2

pH:

8.3 (0.1 molar @ 25C (77F))

% Volatiles by volume @ 21C (70F):

0

Boiling Point:

Not applicable.

Melting Point:

60C (140F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Gaseous carbon dioxide.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Reacts with acids to form carbon dioxide. Dangerous reaction with monoammonium phosphate or a sodium-potassium alloy.

Conditions to Avoid:

Heat, moisture, incompatibles.

11. Toxicological Information

Investigated as a mutagen, reproductive effector. Oral rat LD50: 4220 mg/kg. Irritation data: human, skin, 30mg/3D-I mild, rabbit, eye, 100 mg/30 S, mild.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	

Sodium Bicarbonate (144-55-8)	No	No	None

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

For Sodium Bicarbonate:

48 hour EC50 Daphnia magna (water flea) : 2350 mg/L.

96 hour LC50 Lepomis macrochirus (bluegill) : > 5000 mg/L.

120 hour EC50 Nitzschia linearis (diatom) : 650 mg/L.

This material is not expected to be toxic to aquatic life.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia

Sodium Bicarbonate (144-55-8)	Yes	Yes	Yes	Yes
-----\Chemical Inventory Status - Part 2\-----				
--Canada--				

Ingredient	Korea	DSL	NDSL	Phil.
Sodium Bicarbonate (144-55-8)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----				
		-SARA 302-	-----SARA 313-----	
Ingredient	RQ	TPQ	List	Chemical Catg.
Sodium Bicarbonate (144-55-8)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----				
		-RCRA-	-TSCA-	
Ingredient	CERCLA	261.33	8 (d)	
Sodium Bicarbonate (144-55-8)	No	No	No	

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: No Chronic: No Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 0 Reactivity: 0

Label Hazard Warning:

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

Label Precautions:

None.

Label First Aid:

Not applicable.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 12.

Disclaimer:

Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

Prepared by: Environmental Health & Safety

Phone Number: (314) 654-1600 (U.S.A.)

INFORMATION ON THIS FORM IS FURNISHED SOLELY FOR THE PURPOSE OF COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND SHALL NOT BE USED FOR ANY OTHER PURPOSE USE OR DISSEMINATION OF ALL OR ANY PART OF THIS INFORMATION FOR ANY OTHER PURPOSE MAY RESULT IN A VIOLATION OF LAW OR CONSTITUTE GROUNDS FOR LEGAL ACTION

MANUFACTURER'S NAME
Oreq Corporation

EMERGENCY TELEPHONE
CHEMTREC 1-800-424-9300

1. Product Identification

Synonyms: Sodium thiosulfate 0.01 to 1.0 Normal volumetric solutions

CAS No.: 7772-98-7

Molecular Weight: 158.11

Chemical Formula: Na₂S₂O₃ in aqueous solution

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
-----	-----	-----	-----
Sodium Thiosulfate	7772-98-7	0.02 - 25%	Yes
Water	7732-18-5	75 - 99%	No

3. Hazards Identification

Emergency Overview

CAUTION! MAY BE HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Potential Health Effects

Inhalation: May cause mild irritation to the respiratory tract.

Ingestion: May cause mild irritation to the gastrointestinal tract.

Skin Contact: May cause mild irritation and redness.

Eye Contact: May cause mild irritation, possible reddening.

Chronic Exposure: Chronic exposure may cause skin effects.

Aggravation of Pre-existing Conditions: No information found.

4. First Aid Measures

Inhalation: Not expected to require first aid measures.

Ingestion: Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

Skin Contact: Wash exposed area with soap and water. Get medical advice if irritation develops.

Eye Contact: Wash thoroughly with running water. Get medical advice if irritation develops.

5. Fire Fighting Measures

Fire:

Not considered to be a fire hazard.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire.

Special Information:

Use protective clothing and breathing equipment appropriate for the surrounding fire.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Contain and recover liquid when possible.

Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits: None established.

Ventilation System: Not expected to require any special ventilation.

Personal Respirators (NIOSH Approved): Not expected to require personal respirator usage.

Skin Protection: Wear protective gloves and clean body-covering clothing.

Eye Protection: Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance: Clear, colorless solution.

Odor: Odorless.

Solubility: Infinitely miscible.

Specific Gravity: ca. 1.01-1.14

pH: Aqueous solution is neutral.

% Volatiles by volume @ 21C (70F): > 60

Boiling Point: ca. 100C (ca. 212F)

Melting Point: ca. 0C (ca. 32F)

Vapor Density (Air=1): No information found.

Vapor Pressure (mm Hg): No information found.

Evaporation Rate (BuAc=1): No information found.

10. Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products: Burning may produce sulfur oxides.

Hazardous Polymerization: Will not occur.

Incompatibilities: Metal nitrates, sodium nitrite, iodine, acids, lead, mercury, and silver salts.

Conditions to Avoid: Incompatibles.

11. Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure.

-----\Cancer Lists\-----

---NTP Carcinogen---

Ingredient	Known	Anticipated	IARC Category
Sodium Thiosulfate (7772-98-7)	No	No	None
Water (7732-18-5)	No	No	None

12. Ecological Information

Environmental Fate: No information found.

Environmental Toxicity: No information found.

13. Disposal Considerations

Dilute with water and flush to sewer if local ordinances allow, otherwise, whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia

Sodium Thiosulfate (7772-98-7)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes
-----\Chemical Inventory Status - Part 2\-----				
--Canada--				
Ingredient	Korea	DSL	NDSL	Phil.

Sodium Thiosulfate (7772-98-7)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes
-----\Federal, State & International Regulations - Part 1\-----				
-SARA 302-		-----SARA 313-----		
Ingredient	RQ	TPQ	List	Chemical Catg.

Sodium Thiosulfate (7772-98-7)	No	No	No	No
Water (7732-18-5)	No	No	No	No
-----\Federal, State & International Regulations - Part 2\-----				
-RCRA-		-TSCA-		
Ingredient	CERCLA	261.33	8(d)	

Sodium Thiosulfate (7772-98-7)	No	No	No	
Water (7732-18-5)	No	No	No	

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No (Mixture / Liquid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 0 Reactivity: 0

Label Hazard Warning:

CAUTION! MAY BE HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Label Precautions:

Avoid contact with eyes, skin and clothing.

Wash thoroughly after handling.

Avoid breathing mist.

Keep container closed.

Use with adequate ventilation.

Label First Aid:

If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Product Use:

Laboratory Reagent.

Revision Information:

No Changes.

Disclaimer:

THE INFORMATION SUPPLIED ABOVE IS PRESENTED IN GOOD FAITH AND HAS BEEN DERIVED FROM SOURCES BELIEVED TO BE RELIABLE, HOWEVER, NO WARRANTY EXPRESSED OR IMPLIED IS EXTENDED REGARDING ITS ACCURACY OR THE RESULTS TO BE OBTAINED FROM ITS USE SINCE CONDITIONS OF USE ARE BEYOND OUR CONTROL. ALL RISKS ARE ASSUMED BY THE USER.

MATERIAL SAFETY DATA SHEET

MSDS

Regal Pool Stabilizer

Date-Issued: 09/27/1997
MSDS Ref. No: SREG23242
Date-Revised: 05/20/2002
Revision No: 1

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Regal Pool Stabilizer
GENERAL USE: Prevents chlorine loss due to sunlight.
CHEMICAL FAMILY: Isocyanurate

MANUFACTURER

Alliance Packaging, Inc.
109 Northpark Blvd., Suite 400
Covington, LA 70433-5001
Customer SERVICE: (800) 959-7946

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (Transportation) (800) 424-9300
Medical (800) 255-3924

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS#</u>	<u>Wt.%</u>
Cyanuric acid	108-80-5	100

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: White, granular material

IMMEDIATE CONCERNS: CAUTION: May cause eye irritation. Avoid contact with eyes, skin or clothing. Wear goggles or safety glasses when handling this product. May be irritating to nose and throat. Avoid breathing dust. If product gets on clothing, remove and wash before reuse.

POTENTIAL HEALTH EFFECTS

EYES: May cause eye irritation. Avoid contact with eyes.

SKIN: This product is not expected to cause skin irritation. However, in accordance with good personal hygiene practices, wash thoroughly with soap and water after handling product.

INGESTION: No adverse health effects anticipated from ingestion of incidental amounts of product.

INHALATION: May be irritating to nose and throat. Avoid breathing dust.

CHRONIC: There are no known chronic hazards.

ROUTES OF ENTRY: Skin Contact, Inhalation, Ingestion, Eye Contact.

4. FIRST AID MEASURES

EYES: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

SKIN: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. If irritation develops, get medical attention.

INGESTION: If swallowed: Call 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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.

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 poison control center or doctor for treatment advice.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: Not Applicable

GENERAL HAZARD: There are no unusual fire and explosion hazards known.

EXTINGUISHING MEDIA: Use water, dry chemical, Halon, alcohol foam, or carbon dioxide.

FIRE FIGHTING EQUIPMENT: Firefighters should wear full protective clothing and self contained breathing apparatus (SCBA). Thoroughly decontaminate fire fighting equipment including all fire fighting wearing apparel after the incident.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES: STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Utilizing appropriate protective clothing and safety equipment, contain spilled material. Using clean dedicated equipment, sweep and scoop all spilled material, contaminated soil, and other contaminated material and place in clean dry plastic containers for disposal. Dispose of according to local, state, and federal regulations.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Avoid contact with eyes, skin or clothing. Avoid breathing dust.

HANDLING: Mix only with water. Do not mix with other chemicals.

STORAGE: Keep this product dry in original tightly closed container when not in use. Do not reuse container, but place in trash collection.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)		EXPOSURE LIMITS					
	TWA	OSHA PEL		ACGIH TLV		SUPPLIER OEL	
		ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
		N/E ^[1]		N/E			
Cyanuric acid							

OSHA TABLE COMMENTS:

1. N/E = Not Established

ENGINEERING CONTROLS: General room ventilation plus local exhaust should be used to minimize exposure to dust/vapors.

PERSONAL PROTECTIVE EQUIPMENT:

EYES AND FACE: Wear goggles or safety glasses with side shields when handling this product.

SKIN: Wear rubber gloves when handling this product. Avoid contact with skin.

RESPIRATORY: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

WORK HYGIENIC PRACTICES: Remove and wash contaminated clothing before reuse.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid

ODOR: Odorless

APPEARANCE: Granules

COLOR: White

pH: 4.8 to 5.2(10% slurry)

MELTING POINT: >330°C
SOLUBILITY IN WATER: Slight
DENSITY: 56 (lbs/cu ft)

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: High temperature. Poor ventilation. Contamination. Moisture/high humidity.

STABILITY: This product is stable under normal conditions.

POLYMERIZATION: Hazardous polymerization will not occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: None known.

INCOMPATIBLE MATERIALS: Strong acids, strong alkalies, strong oxidizing agents, and all other swimming pool/spa chemicals in their concentrated forms.

11. TOXICOLOGICAL INFORMATION

ACUTE

DERMAL LD₅₀: >7940 mg/kg of body weight in rabbits.

ORAL LD₅₀: >10000 mg/kg of body weight in rats

EYE EFFECTS: This product may be irritating to eyes.

SKIN EFFECTS: This product may be irritating to skin.

CARCINOGENICITY:

This product is not listed as a carcinogen by IARC.

This product is not listed as a carcinogen by NTP.

This product is not listed as a carcinogen by OSHA.

MUTAGENICITY: Mutagenicity studies were negative.

TERATOGENIC EFFECTS: Testing shows that this product is not teratogenic.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: This product may be toxic to fish and aquatic organisms. Keep product from entering waterways and watersheds.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. Contact with incompatible materials could cause a reaction or fire.

PRODUCT DISPOSAL: Disposal of unused, uncontaminated product is regulated according to local, state and federal regulations.

EMPTY CONTAINER: Do not reuse container. Rinse thoroughly before discarding in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Not Regulated.

OTHER SHIPPING INFORMATION: Bill of Lading Description - Compounds, Swimming Pool, Cleaning or Water Treating, Dry or Liquid (NMFC 50086)

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

313 REPORTABLE INGREDIENTS: This product or its components are not listed.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: This product or its components are not listed.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: This product or its components are not subject to export notification.

TSCA STATUS: This product or its components are listed on the TSCA Inventory.

RCRA STATUS: This product, as sold, would not be considered a RCRA Hazardous Waste.

OSHA HAZARD COMM. RULE: Product is hazardous by definition of the Hazardous Communication Standard.

FIFRA (FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT): This product is not a registered pesticide.

CLEAN AIR ACT

40 CFR PART 68---RISK MANAGEMENT FOR CHEMICAL ACCIDENT RELEASE PREVENTION: This product is subject to the Clean Air Act Section 111 Volatile Organic Compounds.

16. OTHER INFORMATION

PREPARED BY: Regulatory Affairs Department

REVISION SUMMARY Revision #: 1

This MSDS replaces the September 27, 1997 MSDS. Any changes in information are as follows:

In Section 1

Prepared By

In Section 3

Emergency Overview - Immediate Concerns Potential Heath Effects - Eyes Potential Health Effects - Skin Potential Health Effects - Inhalation Potential Health Effects - Ingestion

In Section 4

Firstaid - Eyes Firstaid - Skin Firstaid - Ingestion Firstaid - Inhalation

In Section 7

Handling Storage

HMIS RATING

HEALTH:		2
FLAMMABILITY:		1
REACTIVITY:		0
PERSONAL PROTECTION:		B

NFPA RATING

HEALTH:	2
FIRE:	1
REACTIVITY:	0

Key

4 = Severe

3 = Serious

2 = Moderate

1 = Slight

0 = Minimal

MANUFACTURER DISCLAIMER: IMPORTANT: This information is given without a warranty or guarantee. No suggestions for use are intended or shall be construed as a recommendation to infringe any existing patents or violate any Federal, State or local laws. Safe handling and use is the responsibility of the customer. Read the label before using this product. This information is true and accurate to the best of our



knowledge.



MATERIAL SAFETY DATA SHEET

Robarb Super Blue

1. Product And Company Identification

Supplier

Robarb
1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004 United States

Telephone Number: (770)521-5999

FAX Number: (770)521-5959

Web Site: www.poolspacare.com

Manufacturer

Advantis Technologies, Inc.
1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004 United States

Telephone Number: (770) 521-5999

FAX Number: (770) 521-5959

Web Site: www.poolspacare.com

Supplier Emergency Contacts & Phone Number

CHEMTREC - DAY OR NIGHT: (800) 424-9300

Manufacturer Emergency Contacts & Phone Number

CHEMTREC - DAY OR NIGHT: (800) 424-9300

Issue Date: 02/13/2006

Product Name: Robarb Super Blue

Chemical Name: Catonic Polyamide in water

CAS Number: Not Established

Chemical Formula: Proprietary

MSDS Number: 36

2. Composition/Information On Ingredients

Ingredient Name	CAS Number	Percent Of Total Weight
Polydimethyldiallylammoniumchloride	26062-79-3	

Ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200. Materials determined to be health hazards are listed if they comprise 1% or more of the composition. Materials identified as carcinogens are listed if they comprise 0.1% or more of the composition. Information on proprietary materials is available in 29CFR 1910.1200(i)(1).

3. Hazards Identification

Primary Routes(s) Of Entry

Skin Contact

Eye Hazards

May cause eye irritation.

Skin Hazards

May cause skin irritation. Non-sensitizer for skin.

Ingestion Hazards

Harmful if swallowed.

Inhalation Hazards

Slightly hazardous in case of inhalation.

Signs And Symptoms

Irritant to eyes and skin

4. First Aid Measures

No Data Available...

MATERIAL SAFETY DATA SHEET

Robarb Super Blue

4. First Aid Measures - Continued

Eye

In case of contact, hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes.

Skin

Remove contaminated clothing and shoes. Rinse the affected area with tepid water for at least 15 minutes.

Ingestion

DO NOT INDUCE VOMITING. Drink large amounts of water or milk. Contact a physician or poison control. In cases where individual is semi-comatose, comatose, or convulsing, DO NOT GIVE FLUIDS BY MOUTH.

Inhalation

If inhaled, remove to fresh air.

Fire Fighting (Pictograms)



5. Fire Fighting Measures

Flash Point: >100 °C

Flash Point Method: Closed Cup

Flammability Class: NOT FLAMMABLE

Fire And Explosion Hazards

In a fire situation, may liberate oxides of nitrogen or carbon, and hydrogen chloride.

Extinguishing Media

Use the appropriate extinguishing media for the surrounding fire.

Fire Fighting Instructions

CAUTION Surfaces wet with this product are slippery. Keep containers cool by spraying with water if exposed to fire.

6. Accidental Release Measures

Clean up spill immediately. Contain and/or absorb spill with inert material (e.g. sand, vermiculite). Flush spill area with water. Use appropriate containers to avoid environmental contamination.

CAUTION Surfaces wet with this product are slippery.

7. Handling And Storage

Handling And Storage Precautions

Keep out of reach of children. Store material in a cool and dry place. Wash thoroughly after handling.

Storage Precautions

Avoid contact with skin and clothing.

Work/Hygienic Practices

Wash thoroughly with soap and water after handling.

MATERIAL SAFETY DATA SHEET

Robarb Super Blue

7. Handling And Storage - Continued

Protective Clothing (Pictograms)



8. Exposure Controls/Personal Protection

Engineering Controls

Local exhaust acceptable. Special exhaust not required.

Eye/Face Protection

Safety glasses with side shields or goggles recommended.

Skin Protection

Chemical-resistant gloves.

Respiratory Protection

None normally required.

9. Physical And Chemical Properties

Appearance

Clear Blue

Odor

Mild amine

Chemical Type: Mixture

Physical State: Liquid

Melting Point: NOT APPLICABLE °F

Boiling Point: 212 °F

Specific Gravity: 1.0-1.1

Molecular Weight: Proprietary

Percent Volatiles: NEGLIGIBLE

Packing Density: NOT DETERMINED

Vapor Pressure: NOT DETERMINED

Vapor Density: NOT DETERMINED

pH Factor: 2-3

Solubility: Soluble in Water

Viscosity: NOT DETERMINED

Evaporation Rate: <1

10. Stability And Reactivity

Stability: Stable

Hazardous Polymerization: will not occur

Conditions To Avoid (Stability)

Strong Oxidizers

Incompatible Materials

Avoid contact with strong oxidizers

Hazardous Decomposition Products

When heated toxic fumes such as Oxides of Carbon, Nitrogen and Hydrogen chloride may be present

MATERIAL SAFETY DATA SHEET

Robarb Super Blue

11. Toxicological Information

No Data Available...

12. Ecological Information

No Data Available...

13. Disposal Considerations

Refer to applicable federal, state, and local regulations prior to disposition of container and residual contents.

14. Transport Information

Proper Shipping Name

NOT REGULATED

Hazard Class

NONE ASSIGNED

DOT Identification Number

NONE

15. Regulatory Information

No Data Available...

NFPA



HMIS

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	B

16. Other Information

Revision/Preparer Information

MSDS Preparer: JHW

This MSDS Supercedes A Previous MSDS Dated: 07/24/2000

Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purposes(s).

Robarb

Printed Using MSDS Generator™ 2000

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
 31 LOVETON CIRCLE
 SPARKS, MD 21152
 TELEPHONE: 410-472-4340

1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0001
 PRODUCT NAME: DPD Reagent #1
 CHEMICAL FAMILY: Inorganic salt solution

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Potassium phosphate	7778-77-0	<10	Irritant
Sodium phosphate	7558-79-4	<10	Irritant
Nonhazardous ingredients	NA	<1	None
Deionized water	7732-18-5	to 100	None

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless ODOR: None
 BOILING PT (F): 212 pH: 10 SPECIFIC GRAVITY: 1.24
 VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .64
 PERCENT VOLATILE BY VOLUME: 68 SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
 FLAMMABLE LIMITS: LEL: NA UEL: NA
 EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam
 SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing
 FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit toxic fumes of phosphorus oxides
 NFPA CODE: Health: 0 Flammability: 0 Reactivity: 0 Specific: NA
 CONDITIONS TO AVOID: Extreme heat, temperatures.

5. HEALTH HAZARD DATA

INGREDIENT: NA
 TOXICITY: NA
 PEL: NA TLV: NA
 STEL: NA

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X

TARGET ORGAN(S): Eyes, skin

CARCINOGENICITY: NTP No IARC No OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant.

SKIN: Contact may cause irritation.

INGESTION: Irritant. Large quantities may cause gastrointestinal irritation, nausea, and diarrhea.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water. Call physician. Treat symptoms as needed. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: March 2006

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
31 LOVETON CIRCLE
SPARKS, MD 21152
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0010
PRODUCT NAME: Calcium Buffer
CHEMICAL FAMILY: Inorganic alkali solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Sodium hydroxide	1310-73-2	<2	Irritant alkali
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless ODOR: None
BOILING PT (F): 230 pH: 13.1 SPECIFIC GRAVITY: 1.2
VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6
PERCENT VOLATILE BY VOLUME: 98 SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
FLAMMABLE LIMITS: LEL: NA UEL: NA
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and special protective clothing
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May react with metals to produce hydrogen gas. May emit toxic or irritating fumes.
NFPA CODE: Health: 2 Flammability: 0 Reactivity: 0 Specific: NA
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong acids, metals, aldehydes, organic halogens.

5.HEALTH HAZARD DATA

INGREDIENT: Sodium hydroxide
TOXICITY: LD50(orl-rat): 140-340 mg/kg
PEL: 2 mg/m3 TLV: 2 mg/m3
STEL: NE

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X
TARGET ORGAN(S): Eyes, skin
CARCINOGENICITY: NTP No IARC No OSHA No
HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:
EYES: Irritant. Contact may cause burns.
SKIN: Irritant. Contact may cause burns.
INGESTION: Irritant. May cause burns of mouth, throat, esophagus, stomach.
INHALATION: NA
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water. Call physician. DO NOT INDUCE VOMITING. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Neutralize with dilute acid. Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: November 2005

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
31 LOVETON CIRCLE
SPARKS, MD 21152
TELEPHONE: 410-472-4340

1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0011L
PRODUCT NAME: Calcium Indicator Liquid
CHEMICAL FAMILY: Alcoholic organic dye and amine solution

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Triethanolamine	102-71-6	77 w/w	Irritant vapor
Isopropyl alcohol	67-63-0	23 w/w	Flammable
Calcon	2538-85-4	<1	Irritant

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Dark purple ODOR: Ammonical
BOILING PT (F): 500-600 pH: 10.3 SPECIFIC GRAVITY: 1.02
VAPOR PRESSURE (mm Hg): ND VAPOR DENSITY (AIR=1): 2
PERCENT VOLATILE BY VOLUME: 99 SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: 64 F METHOD: Closed cup
FLAMMABLE LIMITS: LEL: 2% UEL: 12%
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray, or alcohol foam
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing. Cool exposed containers with water spray. Knock down vapors with water spray.
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: Vapors flammable. May be ignited by heat, sparks, or flames. May emit toxic fumes of nitrogen oxides and carbon monoxide.
NFPA CODE: Health: 1 Flammability: 3 Reactivity: 1 Special: NA
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong acids, strong oxidizers.

5. HEALTH HAZARD DATA

INGREDIENT: Triethanolamine
TOXICITY: LD50(oral-rat): 8680 mg/kg
PEL: NE TLV: NE
STEL: NE

INGREDIENT: Isopropyl alcohol
TOXICITY: LD50(oral-rat): 5840 mg/kg
PEL: 980 mg/m3 TLV: 980 mg/m3
STEL: NE

5.HEALTH HAZARD DATA - continued

ROUTE(S) OF ENTRY: Inhalation X Ingestion X Skin X

TARGET ORGAN(S): Eyes, skin, respiratory tract

CARCINOGENICITY: NTP No IARC No OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant

SKIN: Irritant. Contact may cause dermatitis, staining.

INGESTION: Irritant. May cause severe gastrointestinal disturbance.

INHALATION: Irritant. May cause narcosis.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin, and respiratory conditions

6.PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat

HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

STORAGE: Cool, dry, well-ventilated area. Avoid direct sunlight.

7.EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.

INGESTION: Give large amounts of water. Call physician. Induce vomiting under direction of physician. DO NOT induce vomiting or give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.

INHALATION: Remove to fresh air. Call physician.

8.SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Absorb with vermiculite or other inert material. Containerize for later disposal.

DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: January 2007

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
31 LOVETON CIRCLE
SPARKS, MD 21152
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0012
PRODUCT NAME: Hardness Reagent
CHEMICAL FAMILY: Organic chelant solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Ethylenediaminetetra-acetic acid	60-00-4	<5	Irritant
Nonhazardous ingredients	NA	<1	None
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless ODOR: None
BOILING PT (F): 212 pH: 8.1 SPECIFIC GRAVITY: 1
VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6
PERCENT VOLATILE BY VOLUME: 99 SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
FLAMMABLE LIMITS: LEL: NA UEL: NA
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit toxic fumes of nitrogen oxides, sodium oxide.
NFPA CODE: Health: 0 Flammability: 0 Reactivity: 0 Specific: NA
CONDITIONS TO AVOID: Extreme heat, temperatures.

5.HEALTH HAZARD DATA

INGREDIENT: Ethylenediaminetetraacetic acid
TOXICITY: LD50(ori-rat): 2000 mg/kg
PEL: NE TLV: NE
STEL: NE

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X

TARGET ORGAN(S): Eyes, skin

CARCINOGENICITY: NTP No IARC No OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Contact may cause irritation.

SKIN: Contact may cause irritation.

INGESTION: Large quantities may cause gastrointestinal irritation.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water. Call physician. Treat symptoms as needed. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: November 2005

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
 31 LOVETON CIRCLE
 SPARKS, MD 21152
 TELEPHONE: 410-472-4340

1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0013
 PRODUCT NAME: Cyanuric Acid Reagent
 CHEMICAL FAMILY: Organic salt solution

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Nonhazardous ingredients	NA	<1	None
Deionized water	7732-18-5	to 100	None

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless ODOR: None
 BOILING PT (F): 212 pH: 5.8 SPECIFIC GRAVITY: 1
 VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6
 PERCENT VOLATILE BY VOLUME: 99 SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
 FLAMMABLE LIMITS: LEL: NA UEL: NA
 EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam
 SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing
 FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit toxic fumes of nitrogen oxides, cyanide.
 NFPA CODE: Health: 0 Flammability: 0 Reactivity: 0 Specific: NA
 CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong oxidizers, fluorine.

5. HEALTH HAZARD DATA

INGREDIENT: NA
 TOXICITY: NA
 PEL: NA TLV: NA
 STEL: NA

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X

TARGET ORGAN(S): Eyes, skin

CARCINOGENICITY: NTP No IARC No OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Contact may cause irritation.

SKIN: Contact may cause irritation.

INGESTION: Large quantities may cause gastrointestinal irritation.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water. Call physician. Treat symptoms as needed. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Neutralize with soda ash. Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: February 2007

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
 31 LOVETON CIRCLE
 SPARKS, MD 21152
 TELEPHONE: 410-472-4340

1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0002
 PRODUCT NAME: DPD Reagent #2
 CHEMICAL FAMILY: Acidic organic amine solution

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
N,N-Diethyl-p-phenylene-diamine sulfate	6283-63-2	<1	Irritant, toxic
Organic acid (trade secret)	Confidential	<10	Irritant acid
Nonhazardous ingredients	NA	<1	None
Deionized water	7732-18-5	to 100	None

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless ODOR: None
 BOILING PT (F): 212 pH: 1.3 SPECIFIC GRAVITY: 1.01
 VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .65
 PERCENT VOLATILE BY VOLUME: 99 SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
 FLAMMABLE LIMITS: LEL: NA UEL: NA
 EXTINGUISHING MEDIA: NA
 SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and special protective clothing
 FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit toxic fumes of carbon dioxide, carbon monoxide, nitrogen oxides, phosphine, phosphorus oxides, sulfur oxides. Contact with metals may produce hydrogen gas.
 NFPA CODE: Health: 1 Flammability: 0 Reactivity: 0 Specific: NA
 CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with metals, oxidizers, strong caustic.

5. HEALTH HAZARD DATA

INGREDIENT: Organic acid
 TOXICITY: LD50(ori-rat): 2400 mg/kg LD50(skn-rbt): >7940 mg/kg
 PEL: NE TLV: NE
 STEL: NE

INGREDIENT: N,N-Diethyl-p-phenylenediamine sulfate
 TOXICITY: LD50(unr-rat): 450 mg/kg
 PEL: NE TLV: NE
 STEL: NE

5.HEALTH HAZARD DATA - continued

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X

TARGET ORGAN(S): Eyes, skin, gastrointestinal tract

CARCINOGENICITY: NTP No IARC No OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant

SKIN: Irritant. Contact may cause dermatitis.

INGESTION: Irritant, toxic. May cause gastrointestinal irritation, nausea, cramps, diarrhea.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6.PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat

HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

STORAGE: Cool, dry area. Avoid direct sunlight.

7.EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.

INGESTION: Give large amounts of water or large amounts of water with milk of magnesia. Call physician. DO NOT INDUCE VOMITING. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.

INHALATION: NA

8.SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Neutralize with soda ash. Absorb with vermiculite or other inert material. Containerize for later disposal.

DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: July 2005

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
 31 LOVETON CIRCLE
 SPARKS, MD 21152
 TELEPHONE: 410-472-4340

1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0003
 PRODUCT NAME: DPD Reagent #3
 CHEMICAL FAMILY: Inorganic salt solution

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Potassium iodide	7681-11-0	<20	Irritant
Nonhazardous ingredients	NA	<1	None
Deionized water	7732-18-5	to 100	None

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless ODOR: None
 BOILING PT (F): 212 pH: 7.6 SPECIFIC GRAVITY: 1.07
 VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6
 PERCENT VOLATILE BY VOLUME: 80 SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
 FLAMMABLE LIMITS: LEL: NA UEL: NA
 EXTINGUISHING MEDIA: NA
 SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing
 FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit toxic fumes of iodine.
 NFPA CODE: Health: 0 Flammability: 0 Reactivity: 0 Specific: NA
 CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with oxidizers, acids.

5. HEALTH HAZARD DATA

INGREDIENT: Potassium iodide
 TOXICITY: LD50(ori-mus): 1862 mg/kg
 PEL: NE TLV: NE
 STEL: NE

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X
 TARGET ORGAN(S): Eyes, skin
 CARCINOGENICITY: NTP No IARC No OSHA No
 HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:
 EYES: Contact may cause irritation.
 SKIN: Contact may cause irritation.
 INGESTION: Irritant. May cause gastrointestinal irritation.
 INHALATION: NA
 MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water. Call physician. Treat symptoms as needed. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: February 2007

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
31 LOVETON CIRCLE
SPARKS, MD 21152
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0004
PRODUCT NAME: pH Indicator Solution (Phenol Red)
CHEMICAL FAMILY: Sulfonphthalein dye solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Nonhazardous ingredients, NA each		<1	None
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, red ODOR: Phenolic
BOILING PT (F): 212 pH: 7.7 SPECIFIC GRAVITY: 1
VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6
PERCENT VOLATILE BY VOLUME: 98 SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
FLAMMABLE LIMITS: LEL: NA UEL: NA
EXTINGUISHING MEDIA: NA
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit toxic fumes of carbon oxides, nitrogen oxides, ammonia.
NFPA CODE: Health: 0 Flammability: 0 Reactivity: 0 Specific: NA
CONDITIONS TO AVOID: Extreme heat, temperatures.

5.HEALTH HAZARD DATA

INGREDIENT: NA
TOXICITY: NA
PEL: NA TLV: NA
STEL: NA

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X

TARGET ORGAN(S): Eyes, skin

CARCINOGENICITY: NTP No IARC No OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Contact may cause irritation.

SKIN: Contact may cause staining.

INGESTION: Large quantities may cause gastrointestinal irritation.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water. Call physician. Treat symptoms as needed. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: February 2007

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
31 LOVETON CIRCLE
SPARKS, MD 21152
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0005
PRODUCT NAME: Acid Demand Reagent (ADR)
CHEMICAL FAMILY: Inorganic acid solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Sulfuric acid	7664-93-9	<1	Irritant acid
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless ODOR: None
BOILING PT (F): 212 pH: 1.3 SPECIFIC GRAVITY: 1
VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6
PERCENT VOLATILE BY VOLUME: 100 SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
FLAMMABLE LIMITS: LEL: NA UEL: NA
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and special protective clothing
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May react violently with water. May react with metals to produce hydrogen gas. May ignite combustible materials. May emit toxic fumes of sulfur oxides.
NFPA CODE: Health: 1 Flammability: 0 Reactivity: 0 Specific: NA
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong alkali, metals.

5.HEALTH HAZARD DATA

INGREDIENT: Sulfuric acid
TOXICITY: LD50(orl-rat): 2140 mg/kg
PEL: 1 mg/m3 TLV: 1 mg/m3
STEL: 3 mg/m3

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X
TARGET ORGAN(S): Eyes, skin
CARCINOGENICITY: NTP No IARC No OSHA No
HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:
EYES: Irritant. Contact may cause burns.
SKIN: Irritant. Contact may cause burns.
INGESTION: Irritant. May cause gastrointestinal irritation.
INHALATION: NA
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water or large amounts of water with milk of magnesia. Call physician. DO NOT INDUCE VOMITING. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Neutralize with soda ash. Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: October 2005

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
 31 LOVETON CIRCLE
 SPARKS, MD 21152
 TELEPHONE: 410-472-4340

1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0006
 PRODUCT NAME: Base Demand Reagent (BDR)
 CHEMICAL FAMILY: Inorganic alkali solution

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Sodium carbonate	497-19-8	<1	Irritant alkali
Deionized water	7732-18-5	to 100	None

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless ODOR: None
 BOILING PT (F): 212 pH: 11.2 SPECIFIC GRAVITY: 1
 VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6
 PERCENT VOLATILE BY VOLUME: 99 SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
 FLAMMABLE LIMITS: LEL: NA UEL: NA
 EXTINGUISHING MEDIA: NA
 SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing
 FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May react violently with strong acids, fluorine, aluminum and lithium metals, and phosphorus pentoxide. May emit toxic fumes of sodium oxide and carbon dioxide.
 NFPA CODE: Health: 1 Flammability: 0 Reactivity: 0 Specific: NA
 CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong acids, fluorine, metals, phosphorus pentoxide.

5. HEALTH HAZARD DATA

INGREDIENT: Sodium carbonate
 TOXICITY: LD50(oral-rat): 4090 mg/kg
 PEL: NE TLV: NE
 STEL: NE

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X

TARGET ORGAN(S): Eyes, skin

CARCINOGENICITY: NTP No IARC No OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant.

SKIN: Irritant. Contact may cause irritation.

INGESTION: Irritant. May cause gastrointestinal irritation.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.

INGESTION: Give large amounts of water. Call physician. DO NOT INDUCE VOMITING. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.

INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Neutralize with dilute acid. Absorb with vermiculite or other inert material. Containerize for later disposal.

DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: July 2005

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
31 LOVETON CIRCLE
SPARKS, MD 21152
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0007
PRODUCT NAME: Thiosulfate N/10
CHEMICAL FAMILY: Inorganic salt solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Sodium thiosulfate	7772-98-7	<5	Irritant
Nonhazardous ingredients	NA	<1	None
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless ODOR: None
BOILING PT (F): 212 pH: 9.6 SPECIFIC GRAVITY: 1
VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6
PERCENT VOLATILE BY VOLUME: 97 SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
FLAMMABLE LIMITS: LEL: NA UEL: NA
EXTINGUISHING MEDIA: NA
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)
breathing apparatus and full-protective clothing
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit toxic
fumes of sulfur oxides, hydrogen sulfide.
NFPA CODE: Health: 0 Flammability: 0 Reactivity: 0 Specific: NA
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with acids,
strong oxidizers.

5.HEALTH HAZARD DATA

INGREDIENT: Sodium thiosulfate
TOXICITY: LD50(orl-rat): >5000 mg/kg
PEL: NE TLV: NE
STEL: NE

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X
TARGET ORGAN(S): Eyes, skin
CARCINOGENICITY: NTP No IARC No OSHA No
HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:
EYES: Contact may cause irritation.
SKIN: Contact may cause irritation.
INGESTION: Large quantities may cause gastrointestinal irritation.
INHALATION: NA
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water. Call physician. Treat symptoms as needed. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: February 2007

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
 31 LOVETON CIRCLE
 SPARKS, MD 21152
 TELEPHONE: 410-472-4340

1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0008
 PRODUCT NAME: Total Alkalinity Indicator
 CHEMICAL FAMILY: Organic dye solution

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Nonhazardous ingredients	NA	<1	None
Deionized water	7732-18-5	to 100	None

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Dark green ODOR: None
 BOILING PT (F): 212 pH: 8.5 SPECIFIC GRAVITY: 1
 VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6
 PERCENT VOLATILE BY VOLUME: 99 SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
 FLAMMABLE LIMITS: LEL: NA UEL: NA
 EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam
 SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing
 FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit toxic fumes of carbon oxides.
 NFPA CODE: Health: 0 Flammability: 0 Reactivity: 0 Specific: NA
 CONDITIONS TO AVOID: Extreme heat, temperatures.

5. HEALTH HAZARD DATA

INGREDIENT: NA
 TOXICITY: NA
 PEL: NA TLV: NA
 STEL: NA

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X
 TARGET ORGAN(S): Eyes, skin
 CARCINOGENICITY: NTP No IARC No OSHA No
 HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:
 EYES: Contact may cause irritation.
 SKIN: Contact may cause staining.
 INGESTION: Large quantities may cause gastrointestinal irritation.
 INHALATION: NA
 MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water. Call physician. Treat symptoms as needed. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: January 2010

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
 31 LOVETON CIRCLE
 SPARKS, MD 21152
 TELEPHONE: 410-472-4340

1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0870
 PRODUCT NAME: DPD Powder
 CHEMICAL FAMILY: Inorganic/organic salt mixture

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Potassium phosphate	7778-77-0	<65	Irritant
Sodium phosphate	7558-79-4	<35	Irritant
Ethylenediaminetetra- acetic acid	60-00-4	<2	Irritant
N,N-Diethyl-p-phenylene- diamine sulfate	6283-63-2	<2	Irritant, toxic
Inorganic salt (trade secret)	Confidential	<5	Irritant
Organic acids (trade secret)	Confidential	<5	Irritant

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Solid APPEARANCE: Off-white powder ODOR: None
 BOILING PT (F): NA pH: NA SPECIFIC GRAVITY: NA
 VAPOR PRESSURE (mm Hg): NA VAPOR DENSITY (AIR=1): NA
 PERCENT VOLATILE BY VOLUME: NA SOLUBILITY IN WATER: >95%

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
 FLAMMABLE LIMITS: LEL: NA UEL: NA
 EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam
 SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)
 breathing apparatus and full-protective clothing
 FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit
 toxic fumes of phosphorus oxides, sodium oxide.
 NFPA CODE: Health: 0 Flammability: 0 Reactivity: 0 Specific: NA
 CONDITIONS TO AVOID: Extreme heat, temperatures.

5. HEALTH HAZARD DATA

INGREDIENT: Potassium phosphate
 TOXICITY: LDLo(orl-rat): 4640 mg/kg
 PEL: NE TLV: NE
 STEL: NE

INGREDIENT: Sodium phosphate
 TOXICITY: LD50(orl-rat): 12900 mg/kg
 PEL: NE TLV: NE
 STEL: NE

5.HEALTH HAZARD DATA - continued

INGREDIENT: N,N-Diethyl-p-phenylenediamine sulfate

TOXICITY: LD50(unr-rat): 450 mg/kg

PEL: NE

TLV: NE

STEL: NE

ROUTE(S) OF ENTRY: Inhalation X Ingestion X Skin X

TARGET ORGAN(S): Eyes, skin, respiratory tract

CARCINOGENICITY: NTP No IARC No OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant.

SKIN: Irritant.

INGESTION: Irritant, toxic. May cause gastrointestinal irritation, nausea, diarrhea.

INHALATION: Irritant, toxic. May cause irritation of respiratory tract.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin, and respiratory conditions

6.PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat, dust mask, adequate ventilation

HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

STORAGE: Cool, dry, well-ventilated area. Avoid direct sunlight.

7.EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.

INGESTION: Give large amounts of water. Call physician. Induce vomiting under direction of physician. DO NOT induce vomiting or give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.

INHALATION: Remove to fresh air. Call physician.

8.SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Sweep up. Avoid raising dust. Containerize for later disposal.

DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: November 2005

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
 31 LOVETON CIRCLE
 SPARKS, MD 21152
 TELEPHONE: 410-472-4340

1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0871
 PRODUCT NAME: FAS-DPD Titrating Reagent (Chlorine)
 CHEMICAL FAMILY: Inorganic salt solution

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Nonhazardous ingredients	NA	<1	None
Deionized water	7732-18-5	to 100	None

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless ODOR: None
 BOILING PT (F): 212 pH: 2.1 SPECIFIC GRAVITY: 1
 VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6
 PERCENT VOLATILE BY VOLUME: 98 SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
 FLAMMABLE LIMITS: LEL: NA UEL: NA
 EXTINGUISHING MEDIA: Dry chemical, carbon dioxide
 SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and special protective clothing
 FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May react violently with water. May react with metals to produce hydrogen gas. May ignite combustible materials. May emit toxic fumes of sulfur oxides.
 NFPA CODE: Health: 0 Flammability: 0 Reactivity: 0 Specific: NA
 CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong alkali, metals.

5. HEALTH HAZARD DATA

INGREDIENT: NA
 TOXICITY: NA
 PEL: NA TLV: NA
 STEL: NA

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X

TARGET ORGAN(S): Eyes, skin

CARCINOGENICITY: NTP No IARC No OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Contact may cause irritation.

SKIN: Contact may cause irritation.

INGESTION: Large quantities may cause gastrointestinal irritation.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water. Call physician. Treat symptoms as needed. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Neutralize with soda ash. Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: October 2005

MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
 31 LOVETON CIRCLE
 SPARKS, MD 21152
 TELEPHONE: 410-472-4340

1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0009
 PRODUCT NAME: Sulfuric Acid .12N
 CHEMICAL FAMILY: Inorganic acid solution

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Sulfuric acid	7664-93-9	<1	Irritant acid
Deionized water	7732-18-5	to 100	None

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid APPEARANCE: Clear, colorless ODOR: None
 BOILING PT (F): 212 pH: 1.3 SPECIFIC GRAVITY: 1
 VAPOR PRESSURE (mm Hg): 17 VAPOR DENSITY (AIR=1): .6
 PERCENT VOLATILE BY VOLUME: 100 SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA
 FLAMMABLE LIMITS: LEL: NA UEL: NA
 EXTINGUISHING MEDIA: Dry chemical, carbon dioxide
 SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and special protective clothing
 FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May react violently with water. May react with metals to produce hydrogen gas. May ignite combustible materials. May emit toxic fumes of sulfur oxides.
 NFPA CODE: Health: 1 Flammability: 0 Reactivity: 0 Specific: NA
 CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong alkali, metals.

5. HEALTH HAZARD DATA

INGREDIENT: Sulfuric acid
 TOXICITY: LD50(oral-rat): 2140 mg/kg
 PEL: 1 mg/m3 TLV: 1 mg/m3
 STEL: 3 mg/m3

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X
 TARGET ORGAN(S): Eyes, skin
 CARCINOGENICITY: NTP No IARC No OSHA No
 HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:
 EYES: Irritant. Contact may cause burns.
 SKIN: Irritant. Contact may cause burns.
 INGESTION: Irritant. May cause gastrointestinal irritation.
 INHALATION: NA
 MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water or large amounts of water with milk of magnesia. Call physician. DO NOT INDUCE VOMITING. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Neutralize with soda ash. Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: October 2005