norweco®

SAFETY DATA SHEET
BIO-SANITIZER® DISINFECTING TABLETS

EMERGENCY TELEPHONE: (800) 424-9300
CHEMTREC #16012
DATE PREPARED: JANUARY 2015

I. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME	Bio-Sanitizer®
CHEMICAL NAME	Calcium Hypochlorite, Hydrated, Tablets
CHEMICAL ABSTRACT SERVICE NO.	CAS #7778-54-3
CHEMICAL FAMILY	Hypochlorite
FORMULA	$Ca(OCl)_2 \cdot H_2O$
SUPPLIER	Norweco, Inc. 220 Republic St. Norwalk, OH USA 44857
EMERGENCY TELEPHONE NUMBER	(800) 424-9300
TECHNICAL PHONE NUMBER	(800) NORWECO, (800) 667-9326

II. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER!

STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. DO NOT MIX WITH OTHER CHEMICALS, INCLUDING ANY OTHER POOL CHEMICALS OF ANY KIND. MIXING WITH OTHER CHEMICALS COULD CAUSE A FIRE OR EXPLOSION. Contamination with moisture, acids, organic matter, other chemicals (including, but not limited to cleaning chemicals and other pool chemicals), petroleum or paint products or other easily combustible materials may start a chemical reaction with generation of heat, liberation of hazardous gases and possible violent reaction leading to fire or explosion. ALWAYS ADD PRODUCT TO LARGE QUANTITIES OF WATER TO FULLY DISSOLVE PRODUCT. DO NOT POUR WATER INTO PRODUCT, ALWAYS ADD PRODUCT TO WATER. DO NOT USE WITH STABILIZED CHLORINE OR BROMINE TABLET CHEMICAL FEEDERS. Do not add this product to any dispensing device containing remnants of any other product or pool chemical.

CAUSES EYE AND SKIN BURNS. CAUSES RESPIRATORY TRACT IRRITATION. HARMFUL IF INHALED. HARMFUL OR FATAL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Very toxic to aquatic organisms.
Keep away from heat, sparks, flames, direct sunlight, and other sources of heat, including lighted tobacco products. Keep away from incompatible materials and combustible materials. Do not swallow. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container closed. If product becomes contaminated or decomposes do not reseal container. If possible isolate container in open air or well-ventilated area. Wash thoroughly after handling. Keep out of waterways.

POTENTIAL ACUTE HEALTH EFFECTS

INHALATION	Harmful if inhaled. Severely irritating to the respiratory system. Can irritate eyes, nose, mouth and throat.
INGESTION	Harmful or fatal if swallowed. May cause burns to mouth, throat and stomach.
SKIN	Corrosive to the skin. Causes burns. Harmful if contact with skin.
EYES	Corrosive to the eyes. Causes burns.

OVER EXPOSURE SIGNS/SYMPTOMS

INHALATION
Adverse symptoms may include the following:
- respiratory tract irritation
- coughing
- breathing difficulty or shortness of breath
- pulmonary edema

INGESTION
Adverse symptoms may include the following:
- stomach pains
- nausea or vomiting
- gastric perforation

SKIN
Adverse symptoms may include the following:
- pain or irritation
- redness
- blistering may occur

EYES
Adverse symptoms may include the following:
- pain
- watering
- redness
- cornea opacity
- Direct contact with the eyes can cause irreversible damage, including blindness.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: Pre-existing disorders involving any target organs mentioned in this SDS as being at risk may be aggravated by overexposure to this product.

This Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200)

III. CONSUMPTION/INFORMATION ON INGREDIENTS

CALCIUM HYPOCHLORITE (70% Available Chlorine)	73%
INERT INGREDIENTS (Includes 5.5-10% Moisture)	27%

THERE ARE NO ADDITIONAL INGREDIENTS PRESENT, WITHIN THE CURRENT KNOWLEDGE OF THE SUPPLIER AND IN THE CONCENTRATIONS APPLICABLE THAT ARE CLASSIFIED AS HAZARDOUS TO HEALTH OR THE ENVIRONMENT AND HENCE REQUIRE REPORTING IN THIS SECTION.

IV. FIRST AID PROCEDURES

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

EYE CONTACT	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Continue rinsing until medical attention can be obtained.
SKIN CONTACT	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention.
INHALATION	Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention immediately.
INGESTION	If swallowed, seek medical advice immediately and show this Safety Data Sheet, container or label. Keep person warm and at rest. Do not induce vomiting. Get medical attention immediately.
NOTE TO PHYSICIAN	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

V. FIRE-FIGHTING MEASURES

FLAMMABILITY OF THE PRODUCT	Product is not known to be flammable, combustible, or pyrophoric. This material increases the risk of fire and may aid combustion. Contact with combustible material may cause fire. This product is a strong oxidizer which is capable of intensifying a fire once started. Container may rupture.
EXTINGUISHING MEDIA	
SUITABLE	Drench with large quantities of water only.
NOT SUITABLE	Do not use dry chemicals or foams. Product supplies own oxygen, therefore attempts to smother fire with a wet blanket, carbon dioxide, dry chemical extinguisher or other means are not effective. Product has the potential to cause a violent reaction if dry chemical fire extinguishers are used.
SPECIAL EXPOSURE HAZARDS	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Emits toxic fumes under fire conditions. Chlorine gas may be generated. This material is very toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
HAZARDOUS COMBUSTION PRODUCTS	Decomposition products may include the following materials: carbon oxides halogenated compounds metal oxide/oxides
SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS	Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

VI. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
ENVIRONMENTAL PRECAUTIONS	Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.
LARGE SPILL	Use extreme caution in handling spilled material. Use spark-proof tools and explosion-proof equipment. Do not mix this product with any other chemicals, including any other pool chemicals of any kind, such as other disinfection or “shock” pool products. Contamination with moisture, acids, organic matter, other chemicals (including, but not limited to cleaning chemicals and other pool chemicals), petroleum or paint products or other easily combustible materials may start a chemical reaction with generation of heat, liberation of hazardous gases and possible violent reaction leading to fire or explosion. If fire or decomposition occurs in area of spill, immediately douse with plenty of water. Otherwise, sweep up all visible material using a clean (new, if possible), dry shovel and broom and immediately dissolve material in a water-filled container. Spilled material that has been swept up and dissolved in water should be used immediately in the normal application for which this product is being consumed. Prevent entry into sewers, water courses, basements or confined areas. Dispose of via a licensed waste disposal contractor.
SMALL SPILL	Use extreme caution in handling spilled material. Use spark-proof tools and explosion-proof equipment. Do not mix this product with any other chemicals, including any other pool chemicals of any kind, such as disinfection or “shock” pool products. Contamination with moisture, acids, organic matter, other chemicals (including, but not limited to cleaning chemicals and other pool chemicals), petroleum or paint products or other easily combustible materials may start a chemical reaction with generation of heat, liberation of hazardous gases and possible violent reaction leading to fire or explosion. If fire or decomposition occurs in area of spill, immediately douse with plenty of water. Otherwise, sweep up all visible material using a clean (new, if possible), dry shovel and broom and immediately dissolve material in a water-filled container. Spilled material that has been swept up and dissolved in water should be used immediately in the normal application for which this product is being consumed. Prevent entry into sewers, water courses, basements or confined areas.
REFERENCE TO OTHER SECTIONS	See Section I for emergency contact information. See Section VIII for information on appropriate personal protective equipment. See Section XIII for additional waste treatment information.

VII. HANDLING AND STORAGE

HANDLING	Use extreme caution in handling spilled material. Put on appropriate personal protective equipment (see Section VIII). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not swallow. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container with the lid securely closed. Keep away from heat, sparks, flames, direct sunlight, and other sources of heat, including lighted tobacco products. Keep away from combustible material. Add this product only to water. Never add water to this product. Always add the product to large quantities of water. Do not mix this product with any other chemicals, including any other pool chemicals of any kind, such as other disinfection or “shock” pool products. Fire may result if contaminated with acids, organic materials and other easily combustible materials such as oil, kerosene, gasoline, paint products, wood and paper. Use only clean, dry utensils made of metal or plastic. Do not add this product to any dispensing device containing remnants of any other products or pool chemicals. Such use may cause violent reaction leading to fire or explosion. Empty containers retain product residue and can be hazardous. Do not reuse container. Residual material remaining in empty container can react to cause fire. Thoroughly flush empty container with water then destroy by placing in trash collection.
STORAGE	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section X) and food and drink. Separate from acids, alkalies, reducing agents and combustibles. See NFPA 400, Hazardous Material Code for further information. (Please note that NFPA 400, Hazardous Materials Code recently replaced NFPA 430, Code for Storage of Liquid and Solid Oxidizers.) Keep container closed. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. If product becomes contaminated or decomposes do not reseal container. If possible isolate container in open air or well-ventilated area. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Do not contaminate water, food, or feed by storage or disposal of this product.

VIII. EXPOSURE CONTROLS AND PERSONAL PROTECTION

CONSULT LOCAL AUTHORITIES FOR ACCEPTABLE EXPOSURE LIMITS

RECOMMENDED MONITORING PROCEDURES	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
ENGINEERING MEASURES	Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineer controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Engineering controls may be required to control the primary or secondary risks associated with this product.
HYGIENE MEASURES	Wash hands, forearms and face throughly after handling chemical products, before eating, smoking, using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
PERSONAL PROTECTION	
EYES	Chemical splash goggles and face shield.
HANDS	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

VIII. EXPOSURE CONTROLS AND PERSONAL PROTECTION (continued)

GLOVES	Nitrile, neoprene, butyl rubber.
RESPIRATORY	If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
SKIN	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
ENVIRONMENTAL EXPOSURE CONTROLS	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of the environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

IX. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Solid
FLASH POINT	Closed cup: Not applicable
DECOMPOSITION TEMPERATURE	170 TO 180°C (338 to 356°F)
MATERIAL SUPPORTS COMBUSTION	Yes
COLOR	White
ODOR	CHLORINE (Slight)
pH	Alkaline
BOILING/CONDENSATION POINT	Decomposes @ 170-180°C (338 to 356°F)
MELTING/FREEZING POINT	Not available
SPECIFIC GRAVITY	Not available
DENSITY (lbs/gal)	Not available
BULK DENSITY (G/CM^3)	1.07 to 1.4 (67-71 lbs/ft3)
VAPOR PRESSURE	Not available
VAPOR DENSITY	Not available
VOLATILITY	0% (w/w)
EVAPORATION RATE	Not available
VISCOSITY	Not applicable
SOLUBILITY	Soluble in the following materials: cold water
WATER SOLUBILITY AT ROOM TEMPERATURE	217 g/l (27°C)
PARTITION COEFFICIENT NOCTANOL/WATER	Not available
% SOLID (W/W)	100

X. STABILITY AND REACTIVITY

STABILITY	The product may not be stable under certain conditions of storage or use. See “Possibility of Hazardous Reactions” for further information. Product decomposes at approximately 170-180°C (338-356°F) releasing oxygen gas and some chlorine gas.
CONDITIONS TO AVOID	Stable under recommended storage and handling conditions (see Section VII). Heating may cause a fire or explosion. Excessive heat will cause decomposition resulting in the release of oxygen and chlorine gas.
MATERIALS TO AVOID	Highly reactive or incompatible with the following materials: moisture, combustible materials, organic materials, metals, acids, alkalis, oxidizing materials, reducing materials, ammonia, petroleum products, paint products, wood, paper and pool chemicals. Acid or ammonia contamination will release toxic gases.
HAZARDOUS DECOMPOSITION PRODUCTS	Product slowly releases chlorine gas.
POSSIBILITY OF HAZARDOUS REACTIONS	Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following: contact with combustible materials contact with acids/ammonia Reactions may include the following: risk of causing or intensifying fire liberation of toxic gas

XI. TOXICOLOGICAL INFORMATION

PERMISSIBLE	No permissible exposure limits have been established by OSHA.
ACUTE	
INHALATION	Inhalation of this material is irritating to the nose, mouth, throat and lungs. It may also cause burns to the respiratory tract with the production of lung edema which can result in shortness of breath, wheezing, choking, chest pain and impairment of lung function. Inhalation of high concentrations can result in permanent lung damage. Chronic (repeated) inhalation exposure may cause impairment of lung function and permanent lung damage.
EYE/SKIN	Severe irritation and/or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage. Contact with skin may cause severe irritation, burns, or tissue destruction.
INGESTION	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.
CHRONIC	There are no known or reported effects from chronic exposure.

XII. ECOLOGICAL INFORMATION

OVERVIEW	Highly toxic to fish and other aquatic organisms
ECOLOGICAL TOXICITY VALUES FOR CALCIUM HYPOCHLORITE	
BLUEGILL	Nominal, static - 96 h LC50 0.008 mg/l
RAINBOW TROUT (SALMO GAIRDNERI)	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	Oral LD50 3,474 mg/kg
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 (PIMEPHALES PROMELAS)	Nominal, static - 96 h LC50 = 4,630 mg/l
DAPHNIA MAGNA	Nominal, static - 48 h LC50 = 2,770 mg/l

XII. ECOLOGICAL INFORMATION (continued)

CERIODAPHNIA DUBIA	Nominal, static - 48 h LC50 = 1,830 mg/l
NITZSCHIA LINEARIS (DIATOM)	Nominal, static - 5 day LC50 = 3,130 mg/l

XIII. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

The generation of waste should be avoided or minimized wherever possible. This material and its container must be disposed of in a safe way. Spilled material that has been swept up and dissolved in water should be used immediately in the normal application for which this product is being consumed. If this is not possible, material may be neutralized. Please contact Norweco, Inc. for guidance. Note: Only properly neutralized material should be flushed to sewer. Unneutralized material can cause environmental damage to receiving water or can interfere with treatment plant operation. Care must be taken when using or disposing of chemical materials and/or their containers to prevent environmental contamination. Empty containers retain product residue and can be hazardous. Residual material remaining in empty container can react to cause fire. Thoroughly flush empty container with water then destroy by placing in trash collection. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers.

DISPOSAL SHOULD BE IN ACCORDANCE WITH APPLICABLE NATIONAL, REGIONAL, STATE AND LOCAL LAWS AND REGULATIONS.
REFER TO SECTION VII: HANDLING AND STORAGE , SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION FOR ADDITIONAL HANDLING INFORMATION AND PROTECTION OF EMPLOYEES AND SECTION VI: ACCIDENTAL RELEASE MEASURES.

XIV. TRANSPORTATION INFORMATION

IDENTIFICATION NUMBER	UN 2880
PACKING GROUP	I I
REPORTABLE QUANTITY	10 pound/4.5 Kg
HMIS/NFPA RATING	3/0/1
I.M.O. DESCRIPTION	Calcium Hypochlorite Hydrated, Class 5.1, UN 2880 Packing Group I I, RQ 10, IMDG Code Page 5138
U.S. DOT SHIPPING NAME	Calcium Hypochlorite, Hydrated
U.S. DOT HAZARD CLASS	5.1 Oxidizer

XV. REGULATORY INFORMATION

UNITED STATES INVENTORY (TSCA 8b)	All components are listed or exempted
AUSTRALIA INVENTORY (AICS)	All components are listed or exempted
CANADA INVENTORY (DSL)	All components are listed or exempted
CHINA INVENTORY (IECSC)	All components are listed or exempted
EUROPE INVENTORY (REACH)	Please contact your supplier for information on the inventory status of this material
JAPAN INVENTORY (ENCS)	All components are listed or exempted
KOREA INVENTORY (KECI)	All components are listed or exempted
NEW ZEALAND (NZLoC)	All components are listed or exempted
PHILIPPINES INVENTORY (PICCS)	All components are listed or exempted

UNITED STATES

EPA ID NO. - PESTICIDE: Please contact your supplier to get the information

SARA 302/304: No products were found

CERCLA: Hazardous substances:
- pentasodium triphosphate 5000 lbs (2270 kg)
- calcium hypochlorite 10 lbs (4.54 kg)

CHEMICAL NAME	CAS#	ACUTE	CHRONIC	FIRE	REACTIVE	PRESSURE
CALCIUM HYPOCHLORITE	**7778-54-3**	**Y**	**N**	**N**	**Y**	**N**
SODIUM CHLORIDE	**7647-14-5**	**N**	**N**	**N**	**N**	**N**
CALCIUM DIHYDROXIDE	**1305-62-0**	**Y**	**N**	**N**	**N**	**N**
CALCIUM CARBONATE	**471-34-1**	**N**	**N**	**N**	**N**	**N**
CALCIUM CHLORATE	**10137-74-3**	**Y**	**N**	**N**	**Y**	**N**
PRODUCT AS SUPPLIED		**Y**	**N**	**N**	**Y**	**N**

CALIFORNIA PROP.
NOT APPLICABLE

CANADA
WHMIS (CANADA): Class E Corrosive solid

MEXICO
CLASSIFICATION
FLAMMABILITY 0 HEALTH 3 REACTIVITY 2

XVI. OTHER INFORMATION

OTHER SPECIAL	NSF Standard 60 Drinking Water Treatment Chemicals - Some calcium hypochlorite brands have Health Effect Listing and are certified for maximum use of 14-15 mg/l. This product is registered with USEPA as a pesticide in all 50 states.
DATE OF ISSUE	January 21, 2015

THIS SAFETY DATA SHEET IS OFFERED SOLELY FOR YOUR INFORMATION, CONSIDERATION AND INVESTIGATION. THE INFORMATION CONTAINED IN THIS DATA SHEET IS BASED ON PRESENT SCIENTIFIC AND TECHNICAL KNOWLEDGE. THE PURPOSE OF THIS INFORMATION IS TO DRAW ATTENTION TO THE HEALTH AND SAFETY ASPECTS CONCERNING THE PRODUCT AND TO RECOMMEND PRECAUTIONARY MEASURES FOR THE STORAGE AND HANDLING OF THE PRODUCT. NORWALK WASTEWATER EQUIPMENT COMPANY PROVIDES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE DATA CONTAINED HEREIN. NO LIABILITY CAN BE ACCEPTED FOR ANY FAILURE TO OBSERVE THE PRECAUTIONARY MEASURES DESCRIBED IN THIS DATA SHEET OR FOR ANY MISUSE OF THIS PRODUCT.