



# MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

## BASIC CHEMICAL SOLUTIONS

### **PART I** *What is the material and what do I need to know in an emergency?*

#### 1. PRODUCT IDENTIFICATION

**TRADE NAME (AS LABELED):** **BCS SODIUM HYPOCHLORITE SOLUTION (5 - 12.5%)**

**CHEMICAL NAME/CLASS:** Hypochlorous acid salt

**PRODUCT USE:** Bleach, disinfectant, waste water treatment additive.

**SUPPLIER/MANUFACTURER'S NAME:** **BASIC CHEMICAL SOLUTIONS**

**ADDRESS:** **Corporate Office**  
525 Seaport Blvd.  
Redwood City, CA 94063

**BUSINESS PHONE:** 800-411-4227

**EMERGENCY PHONE:** **CHEMTREC:** 800-424-9300

**DATE OF PREPARATION:** November 13, 2003

Si usted no entiende las Hojas de Informacion de Seguridad sobre Materials, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the Material Safety Data Sheet, find someone to explain it to you in detail.)

#### 2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA		NIOSH IDLH mg/m <sup>3</sup>	OTHER mg/m <sup>3</sup>
			TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	PEL mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>		
Sodium Hypochlorite Solution	7681-52-9	5-15	0.5 ppm as Cl <sub>2</sub>	1 ppm as Cl <sub>2</sub>	0.5 ppm as Cl <sub>2</sub>	1 ppm as Cl <sub>2</sub>	10 ppm as Cl <sub>2</sub>	NE
Water and other ingredients. The other ingredients are each present in less than 1 percent concentration in this product.		Balance	The components present in the balance of this product do not contribute any significant, additional hazards. All hazard information pertinent to this product has been presented in the remaining sections of this Material Safety Data Sheet, per the requirements of Federal Occupational Safety and Health Hazard Communication Standard (29 CFR 1910.1200).					

NE = Not Established. C = Ceiling Limit. See Section 16 for Definitions of Terms Used.  
NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

### 3. HAZARD IDENTIFICATION

**EMERGENCY OVERVIEW:** This product is light-yellow to green solution with a strong chlorine-like smell. This solution is corrosive to skin. Causes burns to skin, eyes, respiratory tract and mucous membranes. Harmful or fatal if swallowed. In the event of fire or spill, adequate precautions must be taken. This product will react with acids to release toxic chlorine gas. If involved in a fire, this product may decompose to produce a variety of compounds (i.e. chlorine, sodium oxide, oxygen). Emergency responders must wear the proper personal protective equipment suitable for the situation to which they are responding.

**SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE:** The most significant route of occupational overexposure are inhalation and contact with skin and eyes. The symptoms of overexposure to this product are as follows:

**INHALATION:** If mists or sprays of this solution are inhaled, this product may cause pulmonary irritation, irritation of the mucus membranes, coughing, and a sore throat. Inhalation of this product may cause damage to the tissues of the respiratory system producing potentially fatal lung disorders (chemical pneumonitis and pulmonary edema). If mixed with acids, hypochlorite solutions release large amounts of chlorine gas. This gas can cause severe irritation of the nose and throat. Exposure to high levels of chlorine gas may result in severe lung damage.

**CONTACT WITH SKIN or EYES:** Severe irritation and/or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage possibly blindness. Sodium hypochlorite mist and solutions can cause skin irritation. In severe cases, chemical burns may result. This product is a skin sensitizer; prolonged or repeated over-exposures can result in allergic contact dermatitis.

**SKIN ABSORPTION:** Skin absorption is not anticipated to be a significant route of over-exposure to any component of this product.

**INGESTION:** Though ingestion is not anticipated to be a significant route of over-exposure to this product. If ingestion does occur, hypochlorite solutions release hypochlorous acid on contact with gastric juices, and ingestion causes irritation and corrosion of mucous membranes, pain, vomiting, and edema of the pharynx and larynx; reduced blood pressure, delirium and coma may occur. Ingestion of large quantities may be fatal.

**INJECTION:** Though injection is not anticipated to be a significant route of over-exposure to this product, if it occurs, local reddening, tissue swelling, and discomfort may result.

**HEALTH EFFECTS OR RISKS FROM EXPOSURE:** An Explanation in **Lay Terms**.

**ACUTE:** This solution is corrosive, and can burn and damage eyes, skin, mucous membranes, and any other exposed tissue. If inhaled, irritation of the respiratory system may occur, with coughing, and breathing difficulty. Though unlikely to occur during occupational use, ingestion or inhalation of large quantities may be fatal.

**CHRONIC:** Repeated skin contact with this product may result in dermatitis (inflammation and reddening of the skin). Sodium Hypochlorite, a component of this product, is a skin sensitizer; prolonged or repeated over-exposures can result in allergic contact dermatitis.

HAZARDOUS MATERIAL INFORMATION SYSTEM			
HEALTH		(BLUE)	3
FLAMMABILITY		(RED)	0
REACTIVITY		(YELLOW)	2
PROTECTIVE			D
EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		
For routine industrial applications			

## PART II *What should I do if a hazardous situation occurs?*

### 4. FIRST-AID MEASURES

**SKIN EXPOSURE:** If the product contaminates the skin, Rinse skin immediately with plenty of water for 15-20 minutes. Take off contaminated clothing, taking care not to contaminate eyes. Washing with large amounts of clean water should continue until affected skin surface no longer feels slippery. Victim must seek medical attention. Call a poison control center or doctor for treatment advice.

## 4. FIRST-AID MEASURES (Continued)

**EYE EXPOSURE:** If this product enters the eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Do not attempt to neutralize. Oils or ointments should not be used at this time. Call a poison control center or doctor for treatment advice. Victim must seek immediate medical attention.

**INHALATION:** If vapors, mists, or sprays of this product are inhaled, remove victim to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Remove or cover gross contamination to avoid exposure to rescuers. Do not give anything by mouth to an unconscious person.

**INGESTION:** If this product is swallowed, call a poison control center or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control center or doctor. Have person sip a glass of water if able to swallow. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water.

Victims of chemical exposure must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take a copy of label and MSDS to health professional with victim.

**Note to Physicians:** Symptomatic. Treatment and supportive therapy as indicated. Do NOT give acidic antidotes such as juice, soft drink, vinegar, etc. This product contains materials that may cause severe pneumonitis if aspirated. If ingestion has occurred less than 2 hours earlier, carry out careful gastric lavage; use endotracheal cuff if available, to prevent aspiration. Observe patient for respiratory difficulty from aspiration pneumonitis. Give artificial resuscitation and appropriate chemotherapy if respiration is depressed. Following exposure the patient should be kept under medical review for at least 48 hours as delayed pneumonitis may occur. Pulmonary edema is likely and may be delayed. Steroid therapy, if given early, may be effective in preventing or alleviating edema.

## 5. FIRE-FIGHTING MEASURES

**FLASH POINT, °C (method):** Not flammable.

**AUTOIGNITION TEMPERATURE, °C:** Not flammable.

**FLAMMABLE LIMITS (in air by volume, %):** Lower (LEL): Not applicable.

Upper (UEL): Not applicable.

### FIRE EXTINGUISHING MATERIALS:

Water Spray: YES

Foam: YES

Halon: YES

Carbon Dioxide: YES

Dry Chemical: YES

Other: Any "ABC" Class.

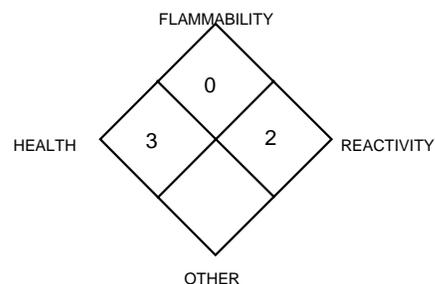
**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Sodium hypochlorite is a strong chemical oxidant, but solutions do not support combustion. Not considered flammable or combustible. Reaction with nitrogen compounds, chloroorganic compounds, or easily oxidizable compounds (reducing agents) may be explosive. This material is non-flammable but is decomposed by heat and light, causing a pressure build-up, which could result in an explosion. When heated, it may release chlorine gas. Vigorous reaction with oxidizable or organic materials may result in fire. Contact with aluminum, tin or zinc will result in the generation of heat and release of hydrogen gas. Run-off from fire control may cause pollution. Keep fire-exposed containers cool with water spray to prevent rupture due to excessive heat. High pressure water hose may spread product from broken containers increasing contamination. If involved in a fire, this product may decompose to produce a variety of compounds (i.e. chlorine, sodium oxide, oxygen). Emergency responders must wear the proper personal protective equipment suitable for the situation to which they are responding. Products of combustion are irritating to the respiratory tract and may cause breathing difficulty. Symptoms may be delayed several hours or longer depending upon the extent of exposure

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

**SPECIAL FIRE-FIGHTING PROCEDURES:** Incipient fire responders should wear eye protection. Structural fire fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move fire-exposed containers, if it can be done without risk to firefighters. If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, discard or decontaminate fire response equipment using water and sodium bicarbonate before returning such equipment to service.

### NFPA RATING



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## 6. ACCIDENTAL RELEASE MEASURES

**SPILL AND LEAK RESPONSE:** Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel.

The proper personal protective equipment for incidental releases (e.g.-1 L of the product released in a well-ventilated area) use impermeable gloves, specific for the material handled, goggles, face shield, and appropriate body protection. In the event of a large release, use impermeable gloves, specific for the material handled, chemically resistant suit and boots, and hard-hat. Self Contained Breathing Apparatus or respirator may be required where engineering controls are not adequate or conditions for potential exposure exist. When respirators are required, Select NIOSH/MSHA approved based on actual or potential airborne concentrations in accordance with latest OSHA and/or ANSI recommendations.

Absorb spilled liquid with polypads or other suitable absorbent materials. Neutralize residue with sodium bicarbonate and water rinse. Decontaminate the area thoroughly. Test area with litmus paper to confirm neutralization. Place all spill residue in a suitable container. Dispose of in accordance with Federal, State, and local hazardous waste disposal regulations (see Section 13, Disposal Considerations).

**Deactivation For Small Spills:** Hypochlorite can be broken down by covering it with a reducing agent such as sodium sulfite or sodium thiosulfate.

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## **PART III** *How can I prevent hazardous situations from occurring*

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### 7. HANDLING and STORAGE

**WORK PRACTICES AND HYGIENE PRACTICES:** As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash hands after handling this product. Do not eat or drink while handling this material. Remove contaminated clothing immediately. Discard contaminated clothing items, or launder before re-use. Inform anyone handling such contaminated laundry of the hazards associated with this product. Use ventilation and other engineering controls to minimize potential exposure to this product.

**STORAGE AND HANDLING PRACTICES:** All employees who handle this material should be trained to handle it safely. Avoid breathing mists or sprays generated by this product. Use in a well-ventilated location.

**For Non-Bulk Containers:** Open containers slowly, on a stable surface. Containers of this product must be properly labeled. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers, or in a diked area, as appropriate. Store containers away from incompatible chemicals. Keep container tightly closed when not in use. Wash thoroughly after using this material. Storage areas should be made of fire-resistant materials. If appropriate, post warning signs in storage and use areas. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Empty containers may contain residual liquid, therefore, empty containers should be handled with care.

**Bulk Containers:** All tanks and pipelines which contain this material must be labeled. Perform routine maintenance on tanks or pipelines which contain this product. Report all leaks immediately to the proper personnel.

**Tank Car Shipments:** Tank cars carrying this product should be loaded and unloaded in strict accordance with tank-car manufacturer's recommendation and all established on-site safety procedures. Appropriate personal protective equipment must be used (see Section 8, Engineering Controls and Personal Protective Equipment.). All loading and unloading equipment must be inspected, prior to each use. Loading and unloading operations must be attended, at all times. Tank cars must be level, brakes must be set or wheels must be locked or blocked prior to loading or unloading. Tank car (for loading) or storage tank (for unloading) must be verified to be correct for receiving this product and be properly prepared, prior to starting the transfer operations. Hoses must be verified to be clean and free of incompatible chemicals, prior to connection to the tank car or vessel. Valves and hoses must be verified to be in the correct positions, before starting transfer operations. A sample (if required) must be taken and verified (if required) prior to starting transfer operations. All lines must be blown-down and purged before disconnecting them from the tank car or vessel.

**PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:** Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment before maintenance begins by a triple-rinse with water followed, if necessary, by using sodium bicarbonate and an additional rinse. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures.

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## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: If required use a corrosion-resistant ventilation system separate from other exhaust ventilation systems to ensure that there is no potential for overexposure to sprays, or mists of this product and that exposures are below those in section 2 (Composition and Information on Ingredients). Ensure eyewash/safety shower stations are available near areas where this product is used.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below exposure limits listed in Section 2 (Composition and Information on Ingredients). If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134, or applicable State regulations. If adequate ventilation is not available or if there is potential for airborne exposure above the exposure limits (listed in Section 2) a respirator may be worn up to respirator exposure limitations, check with respirator equipment manufactures recommendations/limitations. For a higher level of protection use positive pressure supplied air respiration protection or Self Contained Breathing Apparatus or if oxygen levels are below 19.5% or are unknown.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS:

Positive pressure, full-facepiece Self Contained Breathing Apparatus; or positive pressure, full-facepiece Self Contained Breathing Apparatus with an auxiliary positive pressure Self Contained Breathing Apparatus.

EYE PROTECTION: Splash goggles or safety glasses. Face-shields are recommended when the operation can generate splashes, sprays or mists.

HAND PROTECTION: Wear appropriate gloves for routine industrial use. Use appropriate gloves for spill response, as stated in Section 6 of this MSDS (Accidental Release Measures).

BODY PROTECTION: Use body protection appropriate for task. Cover-all, rubber aprons, or chemical protective clothing made from natural rubber are generally acceptable, depending upon the task.

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## 9. PHYSICAL and CHEMICAL PROPERTIES

RELATIVE VAPOR DENSITY (air = 1): Not available.

SPECIFIC GRAVITY (water = 1): 1.198

SOLUBILITY IN WATER: Completely soluble.

VAPOR PRESSURE, mm Hg @ 21 °C: 12 mmHg.

ODOR THRESHOLD: 0.06 ppm (detection), for Chlorine.

LOG WATER/OIL DISTRIBUTION COEFFICIENT: Not available.

EVAPORATION RATE (n-BuAc=1): Similar to water.

MELTING/FREEZING POINT: -13.6°C (7.5°F).

BOILING POINT: Decomposes above 40°C (104°F).

pH: 11-13

APPEARANCE AND COLOR: This product is light-yellow to green solution with a strong chlorine-like smell.

HOW TO DETECT THIS SUBSTANCE (warning properties): Litmus paper will turn blue-purple upon contact with this solution.

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## 10. STABILITY and REACTIVITY

STABILITY: Stable at room temperature.

DECOMPOSITION PRODUCTS: Thermal decomposition products of this solution can include: Chlorine, sodium oxide, oxygen, oxides of chlorine, sodium chlorate, and hydrogen.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product reacts with strong acids producing heat and chlorine gas, which is toxic. Other incompatibles include organic material, cellulose, oxidizable materials, ammonia, urea, ammonium salts, ethyleneimine, cyanides, nitrogen compounds, alcohols, metals, and metal oxides. Reacts with metals to produce flammable hydrogen gas. Metal and metal oxide catalysts decompose hypochlorites, evolving oxygen and often causing explosions. May react explosively with nitrogen containing compounds or form chloroamines, which are explosive. Alkaline hypochlorite solutions may react explosively with some chloroorganic compounds.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure or contact to extreme temperatures and incompatible chemicals.

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## **PART IV** *Is there any other useful information about this material?*

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### **11. TOXICOLOGICAL INFORMATION**

**TOXICITY DATA:** Additional toxicology information for components greater than 1 percent in concentration is provided below.

**SODIUM HYPOCHLORITE:**

Eye effects-Rabbit, adult 10 mg Moderate irritation effects  
Microsomal Mutagenicity Assay-*Salmonella typhimurium* 1 mg/plate  
Cytogenetic Analysis-Human: lymphocyte, 100 ppm/24 hours  
Oral-Woman TDLo: 1 g/kg: Central nervous system effects, Blood pressure effects,  
Intravenous-Man TDLo: 45 mg/kg: Pulmonary system effects  
Oral-Mouse LD<sub>50</sub>: 5800 mg/kg  
Oral-Rat LD<sub>50</sub>: 8910 mg/kg

**SUSPECTED CANCER AGENT:** The major components of this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, CAL/OSHA; and are therefore not considered to be, nor suspected to be, cancer-causing agents by these agencies.

**IRRITANCY OF PRODUCT:** This product is severely irritating and corrosive to contaminated tissue.

**SENSITIZATION TO THE PRODUCT:** Sodium Hypochlorite, a component of this product, is a sensitizer. Prolonged or repeated skin contact can result in the development of rashes, welts, and other allergy-like symptoms.

**REPRODUCTIVE TOXICITY INFORMATION:** Listed below is information concerning the effects of this product and its components on the human reproductive system.

**Mutagenicity:** This product is not reported to produce mutagenic effects in humans. Sodium hypochlorite caused mutations in several short-term studies using bacteria and cultured mammalian cells. The significance of these tests is unclear. It was not mutagenic in tests (chromosome aberration and micronucleus) on live animals.

**Embryotoxicity:** This product is not reported to produce embryotoxic effects in humans.

**Teratogenicity:** This product is not reported to cause teratogenic effects in humans.

**Reproductive Toxicity:** This product is not reported to cause reproductive effects in humans.

*A **mutagen** is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An **embryotoxin** is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A **teratogen** is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A **reproductive toxin** is any substance which interferes in any way with the reproductive process.*

**BIOLOGICAL EXPOSURE INDICES:** Currently there are no Biological Exposure Indices (BEIs) associated with the components of this product.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE** Skin disorders can be aggravated by over-exposure to this product. Inhalation of this products mists may aggravate respiratory conditions.

**RECOMMENDATIONS TO PHYSICIANS:** Treat symptoms and eliminate over-exposure to this product.

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### **12. ECOLOGICAL INFORMATION**

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

**ENVIRONMENTAL STABILITY:** The components of this product are relatively stable in the environment; they may degrade, after time, into other organic and inorganic constituents. Additional environmental data are available as follows:

**SODIUM HYPOCHLORITE:** Water solubility = 29.4 g/ 100 mL (25EC).

**EFFECT OF MATERIAL ON PLANTS or ANIMALS:** This product is harmful or fatal to plant and animal life if this product is released into the environment. Refer to Section 11 (Toxicological Information) for further data on the effects of this product's components on test animals.

Invertebrate and Microbial Toxicity: LOEC *Oncorhynchus kisutch* 0.02 mg/ l.

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## 12. ECOLOGICAL INFORMATION (Continued)

EFFECT OF CHEMICAL ON AQUATIC LIFE: This product can substantially raise the pH of an aquatic environment and can be extremely toxic to fish and aquatic plants. As with all chemicals, work practices should be aimed at eliminating environmental releases.

Fish Toxicity: LC50 (48 hr) rainbow trout 0.07 mg/l.  
LC50 (96 hr) fathead minnow 5.9 mg/l.

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## 13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

EPA WASTE NUMBER: D002 (Characteristic, Corrosivity), applicable to wastes consisting only of this solution.

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## 14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Hypochlorite solution  
HAZARD CLASS NUMBER and DESCRIPTION: 8 (Corrosive Material)  
UN IDENTIFICATION NUMBER: UN 1791  
PACKING GROUP: III  
DOT LABEL(S) REQUIRED: Corrosive  
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 154

MARINE POLLUTANT: This product does not contain any components which are designated by the Department of Transportation to be Marine Pollutants. (49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

Note: The latest DOT information is provided, please verify all DOT information as it is subject to change without notice.

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## 15. REGULATORY INFORMATION

SARA REPORTING REQUIREMENTS: The components of this product subject to the reporting requirements of Section 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act are as follows.

COMPONENT	SARA 302	SARA 304	SARA 313
Sodium Hypochlorite	No	Yes	No

SARA Threshold Planning Quantity: Not applicable.

TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory.

CERCLA REPORTABLE QUANTITY (RQ): Sodium Hypochlorite = 100 lbs.

OTHER FEDERAL REGULATIONS: Not applicable.

STATE REGULATORY INFORMATION: Components of this product are covered under specific State regulations, as denoted below:

**Illinois - Toxic Substance List:** Sodium Hypochlorite.

**New Jersey - Right to Know Hazardous Substance List:** Sodium Hypochlorite

**North Dakota - List of Hazardous Chemicals, Reportable Quantities:** Sodium Hypochlorite.

CALIFORNIA PROPOSITION 65 No component of this product is on the California Proposition 65 lists.

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## 15. REGULATORY INFORMATION (Continued)

If this product is used for the purpose of a pesticide it would be a violation of federal law to use this product in a manner inconsistent with its labeling. Call BCS to see if your required use is covered by our label. The following labeling section is taken from our pesticide label but has no directions for use. It does not constitute a pesticide label. It is for information only.

**LABELING (Precautionary Statements):** KEEP OUT OF REACH OF CHILDREN - DANGER - PELIGRO

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS:** DANGER: Corrosive, may cause severe skin or chemical burns to broken skin. Causes eye damage. May be fatal if swallowed. Avoid breathing vapors. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling this product. Wash hands after handling. Vacate poorly ventilated areas as soon as possible. Do not return until odors have dissipated.

**ENVIRONMENTAL HAZARDS:** This product is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) 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.

**PHYSICAL OR CHEMICAL HAZARDS:** STRONG OXIDIZING AGENT: Mix only with water according to label directions. Mixing this product with chemicals (e.g. ammonia, acids, detergents, etc.) or organic matter (e.g. urine, feces, etc.) will release chlorine gas which is irritating to eyes, lungs and mucous membranes.

**STORAGE AND DISPOSAL:** Store this product in a cool dry area, away from direct sunlight and heat to avoid deterioration. In case of spill, flood areas with large quantities of water. Product or rinsates that cannot be used should be diluted with water before disposal in sanitary sewer (see Environmental Hazards). Do not contaminate food or feed by storage, disposal or cleaning of equipment.

**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. Call a poison control center or doctor for further treatment advice.

**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.

**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.

**If inhaled:** If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Do not give anything by mouth to an unconscious person.

**Note to Physician:** Probable mucosal damage may contraindicate the use of gastric lavage.

**In case of fire:** Use dry chemical, CO<sub>2</sub>, or alcohol foam. **In case of spill:** Neutralize residue with sodium bicarbonate and rinse area. Place in suitable container. Refer to MSDS for additional information.

**TARGET ORGANS:** Skin, eyes and respiratory system.

**WHMIS SYMBOLS:**

E- Corrosive Material

D2B- Poisonous and Infectious Materials/Other Effects I



## 16. OTHER INFORMATION

INFORMATION SOURCE:

CHEMICAL SAFETY ASSOCIATES, Inc.

PREPARED BY:

BASIC CHEMICAL SOLUTIONS

THIS INFORMATION IS DRAWN FROM RECOGNIZED SOURCES BELIEVED TO BE RELIABLE. BASIC CHEMICAL SOLUTIONS MAKES NO GUARANTEES NOR ASSUMES ANY LIABILITY IN CONNECTION WITH THIS INFORMATION. THE USER SHOULD BE AWARE OF CHANGING TECHNOLOGY, RESEARCH, REGULATIONS AND ANALYTICAL PROCEDURES THAT MAY REQUIRE CHANGES HEREIN. THE ABOVE DATA IS SUPPLIED UPON THE CONDITION THAT PERSONS WILL EVALUATE THIS INFORMATION AND THEN DETERMINE ITS SUITABILITY FOR THEIR USE.

### DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

**CAS #:** This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

#### EXPOSURE LIMITS IN AIR:

**ACGIH** - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

**TLV - Threshold Limit Value** - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour **Time Weighted Average (TWA)**, the 15-minute **Short Term Exposure Limit**, and the instantaneous **Ceiling Level**. Skin adsorption effects must also be considered.

**OSHA** - U.S. Occupational Safety and Health Administration.

**PEL - Permissible Exposure Limit** - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (**Federal Register**: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.

**IDLH - Immediately Dangerous to Life and Health** - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). NIOSH issues exposure guidelines called **Recommended Exposure Levels (RELs)**. When no exposure guidelines are established, an entry of **NE** is made for reference.

#### HAZARD RATINGS:

**HAZARDOUS MATERIALS IDENTIFICATION SYSTEM:** **Health Hazard:** **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime over-exposure can result in permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime over-exposure can be fatal). **Flammability Hazard:** **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]). **Reactivity Hazard:** **0** (normally stable); **1** (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures).

**NATIONAL FIRE PROTECTION ASSOCIATION:** **Health Hazard:** **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). **Flammability Hazard and Reactivity Hazard:** Refer to definitions for "Hazardous Materials Identification System".

#### FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the **National Fire Protection Association (NFPA)**. **Flash Point** - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. **Autoignition Temperature:** The minimum temperature required to initiate combustion in air with no other source of ignition. **LEL** - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. **UEL** - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

#### TOXICOLOGICAL INFORMATION:

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD<sub>50</sub>** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC<sub>50</sub>** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m<sup>3</sup>** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the **International Agency for Research on Cancer**; **NTP** - the **National Toxicology Program**, **RTECS** - the **Registry of Toxic Effects of Chemical Substances**, **OSHA** and **CAL/OSHA**. **IARC** and **NTP** rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause death. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

#### REGULATORY INFORMATION:

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Other acronyms used are: **Superfund Amendments and Reauthorization Act (SARA)**; the **Toxic Substance Control Act (TSCA)**; Marine Pollutant status according to the **DOT**; California's Safe Drinking Water Act (**Proposition 65**); the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)**; and various state regulations. This section also includes information on the precautionary warnings which appear on the materials package label.