SAFETY DATA SHEET

Issue Date: 03-May-2012 **Revision Date:** 12-Nov-2021 **Version** 1

1. Identification

Product identifier
Product Name: Chlorine - EPA Reg. No. 7870-2

Other means of identification
Product Code: 4800
UN/ID No: UN1017

Recommended use of the chemical and restrictions on use
Recommended Use: Industrial, Manufacturing or Laboratory use.
Restrictions on Use: Pesticidal use only.

Details of the supplier of the safety data sheet
Manufacturer: Hawkins, Inc.
2381 Rosegate
Roseville, MN 55113
(612) 331-6910

Emergency telephone number
Emergency Telephone: CHEMTREC: 1-800-424-9300 (US) / +1 703-741-5970 (International)

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Gases)	Category 2
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Oxidizing gases	Category 1
Gases under pressure	Liquefied gas
Corrosive to metals	Category 1

Hazards not otherwise classified (HNOC)
Contact with product may cause frostbite
Combines with water to produce hydrochloric and hypochlorous acid.

Label elements
Signal word: Danger

Hazard statements:
Fatal if inhaled
Causes severe skin burns and eye damage
May cause respiratory irritation
May cause or intensify fire; oxidizer
Contains gas under pressure; may explode if heated
May be corrosive to metals

Target Organ Effects: Respiratory system. Eyes. Skin.

Precautionary Statements - Prevention:
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep/Store away from clothing/ combustible materials
Keep reduction valves/valves and fittings free from oil and grease
Keep only in original container

Precautionary Statements - Response:
Immediately call a POISON CENTER or doctor
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing
Immediately call a POISON CENTER or doctor
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
In case of fire: Stop leak if safe to do so
Absorb spillage to prevent material damage

Precautionary Statements - Storage:
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Store in corrosion resistant container with a resistant inner liner
Protect from sunlight

Precautionary Statements - Disposal:
Dispose of contents/container to an approved waste disposal plant

Unknown Acute toxicity: Not applicable

Other Information
Chlorine is extremely corrosive to most metals in the presence of moisture (>150 ppm water) or at high temperatures.
Severe, short-term exposures may cause long-lasting respiratory effects, e.g. Reactive Airways Dysfunction (RADS), due to the material's severe irritating properties.

3. Composition/information on ingredients

Chemical name	CAS No	Weight-%
Chlorine (elemental Cl and hypochlorite salts)	7782-50-5	>=99.5

Any concentration shown as a range is due to batch variation or the exact percentage has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

General advice Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Inhalation Get immediate medical advice/attention. Remove to fresh air. If breathing has stopped, give

	artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Pulmonary edema may be delayed 24-78 hrs. Dangerous to life or health at 10 ppm.
Eye contact	In case of contact with substance, immediately flush eyes with running water for at least 30 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
Skin contact	In case of contact with liquefied gas, thaw frosted parts with lukewarm water. Immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical advice/attention.
Ingestion	Not an expected route of exposure. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing. Potential frostbite

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Severe, short-term exposures may cause long-lasting respiratory effects, e.g. Reactive Airways Dysfunction (RADS), due to the material's severe irritating properties.

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient. DO NOT GET WATER INSIDE CONTAINERS.
Unsuitable extinguishing media	DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.
Specific hazards arising from the chemical	Cylinders may rupture under extreme heat. Damaged cylinders should be handled only by specialists. Containers may explode when heated. Ruptured cylinders may rocket. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of toxic and corrosive gases/vapors. Most vapors are heavier than air. Vapors may spread along ground and collect in low or confined areas (sewers, basements, tanks). May cause fire or explosion; strong oxidizer. Intense local heat (>200◦C) causes iron/chlorine fire resulting in cylinder rupture. Water used for fire extinguishing, which has been in contact with the product, may be corrosive. Water spray on the active leak may promote accelerated corrosion of container and accelerate rate of leakage. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Hazardous combustion products	Hydrogen chloride (HCl). Hypochlorous acid.

Explosion Data

Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.

Special protective equipment for Firefighters should wear self-contained breathing apparatus and full firefighting turnout

fire-fighters gear. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture of weld containers. Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Vapors are heavier than air. Vapors may spread along ground and collect in low or confined areas (sewers, basements, tanks).

Other information Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Keep out of drains, sewers, ditches and waterways.

Methods for cleaning up Call/contact emergency personnel (Chemtrec (1-800-424-9300)). As an immediate precautionary measure, isolate spill or leak area. Keep unauthorized personnel away.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture of weld containers. Never attempt to lift a cylinder by its valve protection cap. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing leak to occur. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials. Keep away from heat. Regularly inspect and test piping and containers used for chlorine service. Liquid chlorine lines must have suitable expansion chambers between block valves due to high coefficient of expansion. Keep valves and fittings free from grease and oil. Hawkins, Inc. recommends the storage/handling of chlorine be in accordance with AWWA B301 - Liquid Chlorine.

Incompatible Materials Reducing agent. Acids. Alkali. Organic material. Hydrocarbons. Ammonia. Hydrogen gas. Ether. Metals. Metal oxides. Sulfides. Carbides. Metal hydrides. Metal hydroxides. Nitrides. Phosphides. Reacts with most organic and inorganic compounds.

8. Exposure controls/personal protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chlorine (elemental Cl and hypochlorite salts) 7782-50-5	STEL: 0.4 ppm TWA: 0.1 ppm	(vacated) TWA: 0.5 ppm (vacated) TWA: 1.5 mg/m^3 (vacated) STEL: 1 ppm (vacated) STEL: 3 mg/m^3 Ceiling: 1 ppm	IDLH: 10 ppm Ceiling: 0.5 ppm 15 min Ceiling: 1.45 mg/m^3 15 min

		Ceiling: 3 mg/m^3	

Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Face protection shield. Tight sealing safety goggles.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Respiratory protection Use appropriate respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water. Prevent product from entering drains.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical State:	Liquid Gas
Appearance:	Clear
Color:	Amber color, vaporizes to greenish, yellow gas
Odor:	Sharp Pungent
Odor Threshold:	0.06ppm (detection); 0.2 ppm (perception)
pH:	Acidic when mixed with water
Salt Out Point:	No information available
Melting Point/Freezing Point:	-101 °C / -150 °F
Boiling Point/Boiling Range:	-35 °C / -31 °F
Flash Point:	No information available
Evaporation Rate (BuAc=1):	No information available
Flammability (solid, gas):	No information available
Flammability Limits in Air:	No information available
Vapor Pressure (mm Hg):	4788 at 20 ◦C
Vapor density (Air =1):	2.49 @ 0 ◦C
Specific Gravity (H_2O=1):	No information available
Water Solubility:	Slightly soluble
Solubility(ies):	Soluble in dimethylformamide, disulfur dichloride, benzene, chloroform, carbon tetrachloride, hexachlorobutadiene, tetrachloroethane, pentachloroethane, chlorobenzene, nitrobenzene, glacial acetic acid (99.84%) and other chlorides.
Partition Coefficient (n-octanol/water):	No information available
Autoignition Temperature:	No information available
Decomposition Temperature:	No information available
Kinematic Viscosity:	No information available
Dynamic Viscosity:	No information available

Other information

Explosive properties No information available

Oxidizing properties	No information available
Molecular Weight:	70.90
Liquid Density	1401.97g/Liter @ 15.6°C

10. Stability and reactivity

Reactivity Oxidizer. Moist chlorine is very corrosive to most common metals. Intense heat (>215◦C) on steel container walls cause cause steel to ignite chlorine. Do not spray water on chlorine leaks on steel vessels.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions Metal halides, carbon, finely divided metals and sulfides can accelerate the rate of chlorine reactions. Chlorine will combine with carbon monoxide and sulfur dioxide to form phosgene and sulfuryl chloride; which will hydrolyze to hydrochloric acid and sulfuric acids.Dry material is highly reactive with titanium and tin. Reacts with most metals at high temperatures or in the presence of moisture. Avoid contact with water. Reactions with water to form corrosive acidic solution (hydrochloric acid). May react explosively with organic matter.

Conditions to avoid Protect from moisture. Heat.

Incompatible Materials Reducing agent. Acids. Alkali. Organic material. Hydrocarbons. Ammonia. Hydrogen gas. Ether. Metals. Metal oxides. Sulfides. Carbides. Metal hydrides. Metal hydroxides. Nitrides. Phosphides. Reacts with most organic and inorganic compounds.

Hazardous decomposition products Hydrogen chloride (HCl). Hypochlorous acid.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.

Eye contact Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. Causes severe burns.

Ingestion Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Numerical measures of toxicity

Not applicable

Acute Toxicity:

ppm

Component Information

Chemical name	Oral LD_{50} :	Dermal LD_{50} :	LC_{50} (Lethal Concentration):
Chlorine (elemental Cl and hypochlorite salts) 7782-50-5	= 5800 mg/kg (Rat)	-	= 293 ppm (Rat) 1 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes severe burns.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Reproductive toxicity No information available.

STOT - single exposure May cause respiratory irritation.

STOT - repeated exposure No information available.

Target Organ Effects: Respiratory system, Eyes, Skin.

Aspiration hazard No information available.

Other Adverse Effects: No information available.

12. Ecological information

Ecotoxicity The environmental impact of this product has not been fully investigated.

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Chlorine (elemental Cl and hypochlorite salts) 7782-50-5	-	0.44 mg/L (LC50 96 h flow-through - Lepomis macrochirus) 0.014 mg/L (LC50 96 h flow-through - Oncorhynchus mykiss) 0.014 mg/L (LC50 96 h - Oncorhynchus mykiss) 0.104 - 0.168 mg/L (LC50 96 h static - Oncorhynchus mykiss) 0.08 mg/L (LC50 96 h flow-through - Pimephales promelas) 0.1 mg/L (LC50 96 h - Pimephales promelas)	-	0.017 mg/L (LC50 48 h - Daphnia magna)

Persistence and Degradability: No information available.

Bioaccumulation: There is no data for this product.

Mobility: No information available.

Other Adverse Effects: No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local, state, and national regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

US EPA Waste Number (product as supplied) D001.

14. Transport information

DOT

UN/ID No	UN1017
Proper shipping name	Chlorine
Hazard Class	2.3
Subsidiary Class	8
Subsidiary Class 2	5.1
Description	UN1017, CHLORINE, 2.3 (8, 5.1), POISON INHALATION HAZARD ZONE B, MARINE POLLUTANT

15. Regulatory information

International Inventories

Chemical name	TSCA	AICS	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS
Chlorine (elemental Cl and hypochlorite salts) 7782-50-5	Present ACTIVE	Present	Present	-	Present	-	Present	Present	Present	Present

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AICS - Australian Inventory of Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical

or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
Chlorine (elemental Cl and hypochlorite salts) 7782-50-5	1.0

SARA 311/312 Hazard Categories
Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 and later calendar years will need to be consistent with updated hazard classifications.

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	SARA Extremely Hazardous Substances TPQ
Chlorine (elemental Cl and hypochlorite salts) 7782-50-5	10 lb	10 lb	100 lb TPQ

Clean Water Act (CWA)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Chlorine (elemental Cl and hypochlorite salts) 7782-50-5	10 lb	-	-	X

OSHA - Process Safety Management - Highly Hazardous Chemicals
This product contains one or more substances regulated under Process Safety Management (29 CFR 1910.119).

Chemical name	OSHA - Process Safety Management - Highly Hazardous Chemicals
Chlorine (elemental Cl and hypochlorite salts) 7782-50-5	1500 lb TQ

Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS)
This product contains one or more substances regulated under the Chemical Facility Anti-Terrorism Standards (6 CFR 27).

Chemical name	Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS)
Chlorine (elemental Cl and hypochlorite salts) 7782-50-5	Release - Toxic Theft - Weapons of Mass Effect

16. Other information

NSF/ANSI 60 Certification

Certified to NSF/ANSI 60

Maximum Use (mg/L unless otherwise indicated):	30

Prepared By:	HSE Department
Issue Date:	03-May-2012
Revision Date:	12-Nov-2021
Revision Note:	Format change. Reviewed and Re-issued.

Disclaimer:
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

UN1017, RQ
CAS No. 7782-50-5
CHLORINE
LIQUIFIED GAS UNDER PRESSURE
NONFLAMMABLE

FOR USE AS A DISINFECTANT AND ALGAECIDE from larger stationary cylinders (1-ton and 150 lb.), by experienced personnel only, in municipal water supplies, sewage and water management plants, and in commercial and industrial swimming pools; and as a slimicide in water cooling systems and in paper mills. This product cannot be transferred to portable cylinders for providing a pesticidal service under this registration number. Pool service operators who service swimming pools with portable cylinders must obtain their own registration with EPA. Repackagers and reformulators must obtain their own registration with EPA.

ACTIVE INGREDIENT:	
Chlorine:	99.5%
OTHER INGREDIENTS:	0.5%
Total:	100.0%

KEEP OUT OF REACH OF CHILDREN

DANGER

("danger, graphic, and "poision"will be printed in RED)

POISON

FATAL IF INHALED
LIQUID CAUSES SEVERE BURNS.

EPA REG. NO. 7870-2 EPA EST. NO. 7870-MN-3

NET WT.: LBS.

HAWKINS, INC.
3100 E. HENNEPIN AVE.
MINNEAPOLIS, MN 55413
(612) 331-6910

Meets ANSI/AWWA B301

ACCEPTED
with COMMENTS
EPA Letter Dated:
MAY 11 2005

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 7870-2

PRECAUTIONARY STATEMENTS

ROUTE OF EXPOSURE	FIRST AID
INHALATION	If inhaled, move person to fresh air and get medical attention immediately. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. If breathing is difficult, oxygen should be administered by qualified personnel. Call poison control center or medical physician for treatment advice.
SKIN IRRITATION (SKIN OR CLOTHING CONTACT WITH LIQUID CHLORINE)	In case of skin contact, immediately flush skin with plenty of water for at least 30 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Destroy contaminated shoes.
SKIN IRRIATION (CONTACT WITH GASEOUS CHLORINE)	In case of skin contact, immediately flush skin with plenty of water for at least 30 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Destroy contaminated shoes.
INGESTION	If swallowed, call poison control center or medical physician immediately for treatment advice. Have the product label with you when calling or going for medical treatment. Have exposed 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 medical physician. DO NOT give anything by mouth to an unconscious person.
EYE	In case of eye contact, immediately flush eyes with plenty of water for at least 30 minutes. Remove contact lenses, if present, after the first 5 minutes then continue rinsing eyes. Get medical attention immediately.
NOTE TO PHYSICIAN	Symptoms may become more severe up to 36 hours after exposure including pulmonary edema. Probable mucosal damage may contraindicate the use of gastric lavage.
HAVE THE PRODUCT CONTAINER OR LABEL WITH YOU WHEN CALLING A POISON CONTROL CENTER OR MEDICAL PHYSICIAN, OR GOING FOR TREATMENT.	

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: Fatal if inhaled or absorbed through the skin. Corrosive. Causes irreversible eye damage and skin burns. Do not breathe vapors or get in eyes, on skin or clothing. Wear goggles, protective clothing and rubber gloves as discussed below. Wash hands thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Remove contaminated clothing and wash clothing before reuse. Prolonged frequently repeated skin contact may cause allergic reactions in some individuals.

ACCEPTED
with COMMENTS
EPA Letter Dated:

MAY 11 2005

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 7870-2

PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment requirements will vary depending on how the chlorine is being used. Refer to Chlorine Institute Pamphlet # 65 for specific recommendations. Applicators and other handlers must wear long-sleeved shirts, long pants, shoes and socks.

In Case of Spill or Leakage: Under normal use conditions, no protective eyewear, respirator, or gloves are required. However, in case of a leak, handlers must wear chemical-resistant gloves (such as any waterproof material) and a full-face canister-style (gas-mask) respirator with a canister approved for chlorine (MSHA/NIOSH approved number prefix TC-14G). Since there is always the possibility of a leak, gloves and a respirator of a type specified above must be available. Gloves and respirator are required for anyone entering into an affected area in the event of a leak.

ENVIRONMENTAL HAZARDS

This pesticide is toxic or highly toxic to fish and aquatic invertebrates. 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 (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.

PHYSICAL & CHEMICAL HAZARDS:

Chlorine is a non-flammable gas, liquefied, under pressure. Do not drop cylinder. Keep away from intense heat or open sunlight. Corrosive to most metals in the presence of moisture.

DIRECTIONS FOR USE:
GENERAL CLASSIFICATION

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Before working with this product, handlers must be trained how to appropriately handle and use chlorine. Use only in well ventilated areas.

Refer to the appropriate Chlorine Institute Pamphlet for instructions on the required product use and safety procedures. NEVER TAMPER WITH FUSIBLE PLUGS OR ATTEMPT TO ALTER OR REPAIR CYLINDERS, TONS OR VALVES. This product, including dispensing equipment, must be handled and used in accordance with the practices specified by all applicable product labeling and the appropriate Chlorine Institute Pamphlet.

To contact the Chlorine Institute, call (703) 741-5760 or visit its website at www.CL2.com.

Chlorine Manual	CI Pamphlet #1
Piping Systems	CI Pamphlet #6
Chlorine Packaging Plants	CI Pamphlet #17
Cargo Tank Handling	CI Pamphlet #49
Emergency Response	CI Pamphlet #64
Personal Protective Equipment	CI Pamphlet #65
Railcar Handling	CI Pamphlet #66
Cylinders at Swimming Pools	CI Pamphlet #82
Swimming Pool Applicators	CI Pamphlet #97
Potable Water Treatment	CI Pamphlet #155
Wastewater Treatment	CI Pamphlet #155

ACCEPTED
with COMMENTS
EPA Letter Dated:
MAY 11 2005

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 7870-2

STORAGE & DISPOSAL

STORAGE: Cylinders and ton containers of chlorine should be stored in a dry area away from sources of heat and protected from direct sunlight and precipitation. Cylinders must not be stored where they will be exposed to temperatures warmer than 54.5°C (130°F). The should be segregated from other compressed gases and never stored near hydrocarbons, finely divided metals, turpentine, ether, anhydrous ammonia or other flammable materials. All storage containers must have a weather resistant label and must not be accessible to the general public.

DISPOSAL OF CONTAINER: All chlorine containers are returnable and should be properly identified with return tags and returned as promptly as possible to the supplier according to prescribed instructions and practices recommended by the Chlorine Institute. All valves must be closed tight and closures or caps secured. It is illegal to ship a leaking chlorine cylinder.

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, 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 food or animal feed by storage or disposal.

DO NOT STORE IN DIRECT SUNLIGHT
DO NOT DROP CYLINDER

Empty Packages Contain Dangerous Chlorine Gas Residue
Always Return Empty Cylinder with Valve Protective Hood.

CHLORINE, 2.3 (8), UN1017, POISON-INHALATION HAZARD ZONE B, RQ

ACCEPTED
with COMMENTS
EPA Letter Dated:
MAY 11 2005

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 7870-2