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KR-150L

MATERIAL SAFETY DATA SHEET

FOR EMERGENCY ASSISTANCE
 CALL: 1-800-424-9300 CHEMTREC

FOR ADDITIONAL INFORMATION
 CALL: 412-321-9800

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **KR-150L**
 CHEMICAL DESCRIPTION: Sodium hypochlorite solution
 PRODUCT CLASS: Biocide
 MSDS REVISION: 7-12-2012

SECTION 2: INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Sodium hypochlorite	7681-52-9	12.5-16.0	As chlorine: TWA: 0.5 ppm STEL: 1.0 ppm	As chlorine: TWA: 0.5 ppm STEL: 1.0 ppm
Sodium hydroxide	1310-73-2	0.3-4.0	Ceiling: 2 mg/m ³	Ceiling: 2 mg/m ³

SECTION 3: HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

Clear, green to yellow liquid.
DANGER! CORROSIVE!
 Causes burns to eyes, skin, respiratory tract, and mucous membranes.
 May cause sensitization by skin contact.
 Harmful or fatal if swallowed.
 Contact with acid liberates toxic chlorine gas.

PRIMARY ROUTES OF ENTRY: Eye contact, skin contact, ingestion, and inhalation

TARGET ORGAN: Eye, skin, and mucous membranes

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin irritation may be aggravated individuals with existing skin lesions. Breathing of vapors or mists may aggravate acute or chronic asthma and chronic pulmonary disease such as emphysema and bronchitis.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Contact can cause severe eye irritation and burns. Damage may be permanent.

SKIN CONTACT: Sodium hypochlorite mist and solutions can cause skin irritation. In severe cases, chemical burns may result. Contact may cause skin sensitization.

INGESTION: Ingestion may cause irritation, pain, and inflammation of the mouth, throat, esophagus, and stomach. Nausea, vomiting, shock, confusion, delirium, coma, and in severe cases, death may occur. Perforation of the esophagus or stomach may occur.

INHALATION: Product mist and vapor can irritate the nose and throat. If mixed with acids, sodium hypochlorite solutions can 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.

SUBCHRONIC, CHRONIC: Prolonged or repeated skin contact with solutions containing as little 4-6% sodium hypochlorite can cause an allergic contact dermatitis. Symptoms include chronic, itchy eczema. Sensitized people can react to dilute (0.04-0.06% sodium hypochlorite) solutions that touch their skin.

CARCINOGENICITY:

NTP: No ingredients listed in this section

IARC: No ingredients listed in this section

OSHA: No ingredients listed in this section

SECTION 4: FIRST AID MEASURES

EYE CONTACT: In case of contact, immediately flush eyes with running water for at least 20 minutes, lifting the upper and lower eyelids to ensure complete rinsing. If irritation persists, repeat flushing. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport. Seek medical aid immediately.

SKIN CONTACT: Immediately flush skin with running water for at least 15-20 minutes while removing contaminated clothing, jewelry, and shoes. If irritation persists, repeat flushing. Seek medical attention immediately. Discard heavily contaminated clothing and shoes in a manner which limits further exposure. Otherwise wash clothing separately before reuse.

INGESTION: If swallowed, do NOT induce vomiting. If victim is conscious and alert, rinse out mouth and give large quantities of water. If spontaneous vomiting occurs, have the victim lean forward with head down to avoid breathing vomitus. Rinse out

mouth and administer more water. Immediately transport victim to an emergency facility. Never give anything by mouth to an unconscious person.

NOTE TO PHYSICIANS: Symptomatic. Provide treatment and supportive therapy as indicated. Do not give acidic antidotes such as juice, soft drinks, 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 an 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.

INHALATION: Remove victim to fresh air. Give artificial respiration only if breathing has stopped. Do not use the mouth-to-mouth method if the victim has ingested or inhaled this substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give cardiopulmonary resuscitation (CPR) only if there is no pulse and no breathing. Obtain medical attention immediately.

SECTION 5: FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable. Not combustible.
LOWER FLAMMABLE LIMIT: Not applicable
UPPER FLAMMABLE LIMIT: Not applicable
AUTO-IGNITION TEMPERATURE: Not applicable

EXTINGUISHING MEDIA: For large fires, use an all purpose type AFFF alcohol foam resistant medium expansion according to foam manufacturer's recommended techniques. The foam supplier should be consulted for recommendations regarding foam types and delivery rates for specific applications. Use carbon dioxide or dry chemical media for small fires. If only water is available, use it in the form of a fog.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. Fire-fighters should wear a self-contained breathing apparatus with a full facepiece operated in a positive pressure mode and protective clothing. Water may be used to cool fire-exposed containers. This should be done from a safe distance since containers may rupture. operated in a positive pressure mode and protective clothing. Water may be used to cool fire-exposed containers. Move containers from fire area if you can do it without risk. Dike fire control water for later disposal; do not scatter the material.

FIRE & EXPLOSION HAZARDS: Sodium hypochlorite is a strong chemical oxidant, but solutions do not support combustion. 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. (See Section 10.)

DECOMPOSITION PRODUCTS: Thermal decomposition produces chlorine, sodium oxide, oxygen, oxides of chlorine, sodium chlorate, and hydrogen.

NFPA RATINGS: Health = 3 Flammability = 0 Reactivity = 1 Special Hazard = None

Hazard rating scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

SECTION 6: ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

PERSONAL PRECAUTIONS: Do not touch spilled liquid. Wear appropriate personal protective equipment as specified in Section 8. Isolate the hazard area. Keep unnecessary and unprotected personnel from entering the area of the spill. Ventilate the area of the spill or leak. Remove all sources of ignition. All equipment should be grounded and non-sparking. Stop leak if possible without personal risk.

METHODS FOR CLEAN-UP:

Small spills: Cover liquid with an inert material (e.g. dry earth, sand, etc.), and place the used absorbent in a loosely covered plastic containers for later disposal. Do not use combustible materials, such as saw dust. Do not flush to sewer! Rinse area with water.

Large spills: Prevent entry into sewers and confined areas. Dike spill with an inert material (sand, earth, etc.). Contact fire and emergency services and supplier for advice. Collect product for recovery or disposal by pumping it into polyethylene containers. Ensure adequate decontamination of tools and equipment following clean up. Collect contaminated soil, water, and absorbent for proper disposal. Comply with federal, state, and local regulations on reporting releases.

WASTE DISPOSAL METHODS: Dispose of waste material at an approved waste treatment/disposal facility in accordance with applicable regulations. Do not dispose of waste with normal garbage or to sewer systems.

NOTE: Clean-up material may be a RCRA Hazardous waste on disposal. U.S. Regulations (CERCLA) require the reporting of spills and releases to soil, water, and air in excess of reportable quantities. The toll free number for the U.S. Coast Guard National Response Center is 800-424-8802.

SECTION 7: HANDLING AND STORAGE**HANDLING:**

Ensure that people working with this material are properly trained regarding its hazards and its safe use.

Avoid contact with eyes, skin, and clothing.

Avoid breathing vapor or mist.

Avoid generating mist.

Use with adequate ventilation.

Wash thoroughly after handling.

Keep containers tightly closed when not in use and when empty.

Ensure that all containers are properly labeled.

Have emergency equipment (for fires, spills, leaks, etc.) readily available.

Use the smallest possible amounts of product in designated areas with adequate ventilation.

Empty containers may contain hazardous residues.

Use corrosion-resistant transfer equipment when dispensing.

STORAGE:

Store product in a cool, dry, well-ventilated area, away from direct sunlight and incompatibles, such as reducing materials, strong acids, nitrogen compounds, copper, nickel, and cobalt.

Store containers at 59-84 °F (15-29 °C)

Do not store product above 86 °F (30 °C) or below freezing point.

Protect containers from physical damage.

Vent caps should be checked with full personal protection.

Use corrosion-resistant structural materials, lighting, and ventilation systems in storage areas.

This product has a shelf life of up to 6 months at 60 °F (15.6 °C) or lower.

Outdoor storage tanks should be suitably diked or otherwise provided with an adequate means of secondary containment.

Appropriate secondary containment measures should be taken to prevent spills or leaks from indoor storage tanks and tank-truck unloading stations from entering sewers or other channels that discharge directly to a water body or a municipal sewage system.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE/FACE PROTECTION: Splash resistant chemical splash goggles and full face Shield

SKIN PROTECTION: Chemical resistant gloves and impervious protective clothing, including boots, lab coat, apron, rain jacket, pants, and/or coveralls, as appropriate, to prevent skin contact. Recommended materials (resistance to breakthrough longer than 8 hours) include: butyl rubber, natural rubber, neoprene, nitrile rubber, polyethylene, viton, saranex™, and responder™.

RESPIRATORY PROTECTION: A NIOSH/MSHA approved air-purifying respirator equipped with acid mist cartridges may be used for concentrations up to 10 times the TLV. Use a supplied air respirator if concentrations are higher or unknown.

ENGINEERING CONTROLS: A system of local and/or general exhaust is recommended to keep employee exposures below irritating levels or airborne exposure limits, whichever is lower. Local exhaust ventilation is preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the latest edition of the ACGIH document *Industrial Ventilation, A Manual of Recommended Practices* for details.

WORK PRACTICES: An eyewash station and safety shower should be accessible in the immediate area of use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH: 11.0-13.0

SPECIFIC GRAVITY: 1.17-1.23 g/mL

SOLUBILITY IN WATER: Complete

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

FREEZING POINT: 7.5 °F (-13.6 °C)

VAPOR PRESSURE: 12 mm Hg at 69.8 °F (21 °C)

VAPOR DENSITY: (air=1): Not available

APPEARANCE AND ODOR: Clear green to yellow liquid with a pungent odor

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable at room temperature

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: Avoid high heat, sunlight, or ultraviolet light. Do not store above 86 °F (30 °C). Do not allow solutions to evaporate to dryness. Keep product away from incompatibles.

INCOMPATIBILITY: Product may react violently with strong acids, producing chlorine gas, which is toxic. Other incompatibilities include organic material, cellulose, oxidizable materials, ammonia, urea, ammonium salts, ethyleneimine, cyanides, nitrogen compounds, alcohols, metals, and metal oxides. This product reacts with metals to produce flammable hydrogen gas. Metal and metal oxide catalysts decompose hypochlorites, evolving oxygen and often causing explosions. Hypochlorite solutions may react explosively with nitrogen containing compounds or form chloramines, which are explosive. Alkaline hypochlorite solutions may react explosively with some chloroorganic compounds. Hypochlorite solutions can be corrosive to many

metals.

DECOMPOSITION PRODUCTS: Thermal decomposition produces chlorine, sodium oxide, oxygen, oxides of chlorine, sodium chlorate, and hydrogen.

SECTION 11: TOXICOLOGICAL INFORMATION

ON PRODUCT:

Chemical Name	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Sodium hypochlorite	8,910 mg/Kg	Not available	>10,500 mg/m ³ /1 hr
Sodium hydroxide	140-340 mg/Kg	1,350 mg/Kg	Not available

Oral TDLo (woman): 1,000 mg/Kg, lowest published toxic dose

Intravenous Man TDLo: 45 mg/Kg

SECTION 12: ECOLOGICAL INFORMATION

ON PRODUCT:

Chemical Name	Aquatic Toxicity Data
Product	96 hr LC50 (Ceriodaphnia dubia): 1.23 mg/L 96 hr LC50 (Fathead minnow): 5.6 - 15.6 mg/L 96 hr LC50 (Bluegill sunfish): 0.1 - 2.48 mg/L 96 hr LC50 (Pimephales promelas): 1.19 mg/L 96 hr LC50 (Rainbow trout): 0.5 - 1.0 mg/L

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA STATUS: Discarded product, as sold, would be considered a RCRA Hazardous Waste based on characteristic of corrosivity. The EPA hazardous waste number is D002.

DISPOSAL: Dispose of in accordance with local, state and federal regulations. Prevent entry into sewers or waterways.

SECTION 14: TRANSPORT INFORMATION

DOT CLASSIFICATION:

Proper Shipping Name: Hypochlorite Solution
(with more than 5% available chlorine)

Primary Hazard Class/Division: 8

UN Number: UN1791

Packing Group: III

Label: Corrosive

DOT ERG #154

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Status: Hazardous

TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA: EPA Hazardous Substances (40 CFR 302):

Chemical Name	CERCLA Reportable Quantity (RQ)
Product	100 lb
(Sodium hypochlorite solution)	(Notify the EPA of spills exceeding this quantity.)

SARA TITLE III (Sections 302, 311, 312, and 313):

Section 302 Extremely Hazardous Substances (40 CFR 355):

Chemical Name	CAS#	RQ	TPQ
None			

Section 311 and 312 Health and Physical Hazards:

Immediate	Delayed	Fire	Pressure	Reactivity
yes	no	no	no	no

Section 313 Toxic Chemicals (40 CFR 372):

Chemical Name	CAS Number	Percent by Weight
None		

EPA Registration Number: 550-198

SECTION 16: OTHER INFORMATION

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

Hazard rating scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

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