Harcros Chemicals Inc
Kansas City, Kansas

MATERIAL SAFETY DATA SHEET  Page 1

PRODUCT NAME : SODIUM HYPOCHLORITE 12.5%+CL2
PRODUCT CODE : 10461
CAS #: 037681529
FORMULA: NaOCl

CHEM. FAMILY: bleaching agents (oxidizers)

CHEMICAL NAME AND SYNONYMS:
Sodium Hypochlorite Solutions;
Bleach;
Soda Bleach Liquor;
Chlorine Bleach;
Chenland Extract 2;
Extract 2;

MSDS NO. 001767 DETAIL NO. 01308
SUPPLIERS NAME : Harcros Chemicals Inc
5200 Speaker Road
Kansas City  KS 66106-1095

SUPPLIERS PHONE NUMBER : 913-321-3131
TRANSPORTATION EMERGENCY PHONE NUMBER : 1-800-424-9300

S.A.R.A. INFORMATION
HAZARDS : Acute Fire Chronic
PHYSICAL DATA : Mixture Liquid

SECTION I  HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>MAX Wt</th>
<th>SARA APPLIES</th>
<th>AIR CONTAMINANT LEVELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hypochlorite</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypochlorous Acid, Sodium Salt</td>
<td>15.0</td>
<td>Y</td>
<td>As Chlorine</td>
</tr>
<tr>
<td>(CAS # 7681-52-9)</td>
<td></td>
<td></td>
<td>TWA/TLV 0.5 ppm</td>
</tr>
<tr>
<td>Caustic Soda</td>
<td></td>
<td></td>
<td>STEL 1 ppm</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>3.0</td>
<td>Y</td>
<td>As Sodium Hydroxide</td>
</tr>
<tr>
<td>(CAS # 1310-73-2)</td>
<td></td>
<td></td>
<td>TWA/TLV 2 mg/m3 (Ceiling)</td>
</tr>
</tbody>
</table>

SECTION II  HEALTH HAZARDS

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Kansas City, Kansas

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PRODUCT NAME: SODIUM HYPOCHLORITE 12.5%+Cl2
PRODUCT CODE: 10461 55 GAL POLY

SECTION II HEALTH HAZARDS

(CONTINUED)

POTENTIAL EFFECTS OF EXPOSURE
EYES
Eye contact with product may cause severe irritation eye damage blindness

SKIN
Skin contact may cause irritation burns
Prolonged or repeated skin contact may cause skin damage

INHALATION
Inhalation may cause severe irritation sneezing
Prolonged or repeated overexposure by inhalation may cause pneumonia lung damage, damage to respiratory system even death

INGESTION
Ingestion may cause severe irritation tissue ulceration gastrointestinal damage circulatory collapse convulsions coma even death

TARGET ORGANS
OVEREXPOSURE MAY CAUSE DAMAGE TO,

DISORDERS OF OR ADVERSELY AFFECT THE FOLLOWING SYSTEMS, FUNCTIONS, ORGANS:
destruction of all body tissues

FIRST AID
FIRST AID EYES
Immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids apart to ensure flushing of entire surface. Call a physician.

FIRST AID SKIN
Immediately flush skin with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Thoroughly clean clothing and shoes before reuse. Call a physician.

FIRST AID INHALATION
Remove to fresh air. If not breathing give artificial respiration, preferably mouth to mouth. If breathing is difficult give oxygen. Call a physician.

FIRST AID INGESTION
Do not induce vomiting. Rinse mouth with water. Dilute stomach contents by drinking water. If vomiting occurs spontaneously, keep head below hips to prevent breathing vomit into lungs. Call a physician immediately.

OTHER INFORMATION
ROUTES OF ENTRY
eye contact skin contact inhalation

OVEREXPOSURE MAY AGGRAVATE DISORDERS OF THE
eyes skin respiratory system

CARCINOGEN STATUS
No components, present in excess of 0.1% by weight are listed as carcinogens by IARC, NTP, or OSHA

SECTION III SPECIAL PROTECTION

Continued On Page 3
SECTION III SPECIAL PROTECTION

PROTECTIVE EQUIPMENT

PROTECTIVE EQUIPMENT EYES
chemical goggles faceshield

PROTECTIVE EQUIPMENT SKIN
impervious gloves rubber apron clean body covering clothing

PROTECTIVE EQUIPMENT INHALATION
If exposure limits are exceeded, or if exposure may occur, use a NIOSH/MSHA respirator approved for your conditions of exposure. Refer to the most recent NIOSH publications concerning chemical hazards, or consult your safety equipment supplier. Respiratory protection programs must be in compliance with OSHA requirements in 29 CFR 1910.134. For emergencies, a NIOSH/MSHA approved positive pressure breathing apparatus should be readily available.

VENTILATION REQUIRED:
Adequate ventilation is required to minimize exposure or to maintain exposure levels below OSHA/ACGIH requirements. Local mechanical ventilation may be required.

ADDITIONAL PROTECTIVE MEASURES
Safety shower, eye wash fountain, and washing facilities should be readily available.

SECTION IV FIRE & EXPLOSION HAZARD DATA

Flash Point (METHOD): > OR = N/A
Flammable Limits (% Volume in Air) UPPER: N/D Lower: N/D

HMIS Info
Health : 2
Fire : 0
React : 2
Special : X

EXTINGUISHING MEDIA
water

FIRE FIGHTING PROCEDURES
Prevent human exposure to fire, fumes, smoke, and products of combustion. Evacuate non essential personnel. Firefighters should wear full face, self contained breathing apparatus and impervious protective clothing.

UNUSUAL FIRE & EXPLOSION HAZARDS
Product does not burn, but can provide oxygen which can intensify a fire. Toxic fumes may be released. Product is an oxidizer. It may react vigorously with organics or other materials resulting in an explosion and fire.

SECTION V PHYSICAL DATA

Continued On Page 4
product name: Sodium Hypochlorite 12.5% Cl₂
product code: 10461
poly 55 gal

section V Physical Data

Boiling Point: N/D
Freezing Point: -15 deg. F
Specific Gravity (H₂O=1): 1.2300 to 1.2800 @ 68 deg. F
Vapor Pressure (MM HG.): > OR = 17.500 @ 68 deg. F
Vapor Density (AIR=1): N/D
Evaporation Rate (NA COMPLETE =1): N/D
Solubility in Water: COMPLETE
Percent Volatile by Volume: N/D
pH: aqueous approx. > OR = 12.000
Appearance: Colorless to lightly colored liquid
Odor: Sharp

section VI Reactivity Data

Stability
Stable when stored in container under proper conditions.
Incompatibility
Amphoteric Metals, Inorganic Acids, Organic Acids, Organic Bases, Hydrocarbons,
Organic Mixture, Avoid contact with amphoteric metals which include aluminum, copper, zinc, and brass. Avoid contact with strong reducing agents which include hydrogen, hydrazine, sulfides, and nitrites. Product is an oxidizer. It may react vigorously with organics or other materials resulting in an explosion and fire.
Hazardous Decomposition Products
Chlorine, Hydrogen Chloride, Oxygen
Hazardous Polymerization
Will not occur

section VII Spill and Leak Procedures

Steps to be taken if material is released or spilled:
Product may be toxic to fish or aquatic life. Evacuate non essential personnel, eliminate ignition sources, and wear protective equipment (See Section III). Shut off source of leak only if safe to do so. Contain spill. Recover free product. To clean up residue, reduce by adding reducing agents such as bisulfites or ferrous salt solutions. Some heat will be produced. May be neutralized with reducing agents. Keep on alkaline side and dilute with copious quantities of water. Principal end product is salt water (NaCl).

Disposal Method

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Kansas City, Kansas

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PRODUCT NAME: SODIUM HYPOCHLORITE 12.5%+CL2
PRODUCT CODE: 10461
SECTION VII SPILL AND LEAK PROCEDURES

Solids must be disposed of in a permitted waste management facility. Recovered liquids may be reprocessed or incinerated. Incineration must be handled in a permitted facility. Dispose of material in accordance with all Federal, State and local regulations. Local regulations may be more stringent than Federal or State.

(Continued)

Proper Shipping Name: HYPOCHLORITE SOLUTIONS
Hazard Class: 8, UN1791, PGIII
Label Requirements: CORROSIVE
Reportable Quantity: None

SECTION IX ADDITIONAL INFORMATION

LABEL SIGNAL WORD
DANGER
PRECAUTIONS
Wear protective equipment when handling. Use only with adequate ventilation. Wash thoroughly after handling. Do Not breathe vapor, mist, or dust. Do Not get in eyes, on skin, or clothing. Keep from contact with clothing or other combustible materials. Do not swallow.

HANDLING
Do Not add any other product to this container. For industrial use only. Do Not apply heat to container. ATTENTION: This container hazardous when emptied. Since emptied container contains product residues (vapor or liquid), all labeled hazard precautions must be observed.

STORAGE
Keep container closed when not in use. Store in a cool dry place. Store out of direct sunlight and away from heat. Decomposition can cause pressure-buildup in closed containers. Relieve internal pressure when received and at least weekly thereafter by slowly loosening bung. Retighten immediately. Wear protective equipment. Keep out of reach of children.

SECTION X COMPLIANCE INFORMATION

NSF INFORMATION
MAXIMUM USE LEVEL IN POTABLE WATER:
For Sodium Hypochlorite 12.5% - 80 mg/L & For Sodium Hypochlorite 10% - 100 mg/L

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Kansas City, Kansas

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PRODUCT NAME: SODIUM HYPOCHLORITE 12.5%+Cl2
PRODUCT CODE: 10461
55 GAL POLY

DATE: 7-MAY-2002 08:35:51.87
NAME: GENE TURNER

< = LESS THAN  N/A = NOT APPLICABLE
> = MORE THAN  N/D = NOT DETERMINED

N/E = NOT ESTABLISHED

DATE ISSUED: 931230
DATE REVISED: 020422
UNK = UNKNOWN

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