

Document No: MSDS-05

Issue Status: 001

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Approved by: General Manager

Author: Manager HSE

Dev. Date: 01-01-19

Issued To: All Concerned

Title: **Material Safety Data Sheet Sodium Hypochlorite**

MSDS NaOCl

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Approved By	Engr. Yazeed Ali Al-Ayed / General Manager
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AMENDMENT PAGE

Sr. No.	Date Of Amendment	Page No.	Issue Status	Description
1	23-10-2022	3	00	Global Harmonized System (GHS) Labeling incorporated.
2				
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SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFIER: SODIUM HYPOCHLORITE SOLUTION

RECOMMENDED USAGE: BLEACHING AGENT; DESINFECTANT; WATER TREATMENT; DEODORIZER, SOURCE OF AVAILABLE CHLORINE

MANUFACTURER:

Saudi Factory for Chlorine & Alkalies

PO Box 262000 Riyadh 11342

Tel: +966 11 810 1219

Fax: +966 11 415 5198

Contact Department: Logistics Department

EMERGENCY PHONE NUMBER: +966 554 098 650

SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY: SODIUM HYPOCHLORITE SOLUTION 12%

TRADE NAMES/SYNONYMS:

BLEACH; HYPOCHLOROUS ACID, SODIUM SALT; SODA BLEACH; SODIUM OXYCHLORIDE; JAVEL WATER; HYPO; HOUSEHOLD BLEACH; INDUSTRIAL BLEACH; LIQUID CHLORINE

CAS NUMBER: 7681-52-9

EC NUMBER (EINECS): 231-668-3

EC INDEX NUMBER:

MINIMUM PERCENTAGE: 12

SECTION 3: HAZARDS IDENTIFICATION

GHS (GLOBAL HARMONIZED SYSTEM) LABELING FOR CAUSTIC SODA SOLUTION:



Corrosive



Oxidizing Agent



Danger to Aquatic Environment

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NFPA Rating:

Health Rating: 2 - Severe (Poison)

Flammability Rating: 0 - None

Reactivity Rating: 1 - Moderate

Lab Protective Equip: GOGGLES; COAT; VENT HOOD; PROPER GLOVES



SECTION 4: FIRST AID MEASURES

INHALATION:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

SKIN CONTACT:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

EYE CONTACT:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

INGESTION:

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Wash mouth with water, then give plenty of milk or water to drink and obtain urgent medical attention.

NOTE TO PHYSICIAN:

Consider oral administration of sodium thiosulfate solutions if sodium hypochlorite is ingested. Do not administer neutralizing substances since the resultant exothermic reaction could further damage tissue. Endotracheal intubation could be needed if glottic edema compromises the airway. For individuals with significant inhalation exposure, monitor arterial blood gases and chest x-ray.

SECTION 5: FIRE FIGHTING MEASURES

FIRE HAZARD:

Not considered to be a fire hazard. Substance releases oxygen when heated or react with some metals, which may increase the severity of an existing fire. Containers may rupture from pressure build-up.

EXPLOSION HAZARD:

This solution is not considered to be an explosion hazard. Anhydrous sodium hypochlorite is very explosive.

SUITABLE EXTINGUISHING MEDIA:

Use any means suitable for extinguishing surrounding fire. Use water spray to cool fire-exposed containers, to dilute liquid, and control vapor.

SPECIAL INFORMATION:

In the event of fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Wear appropriate personal protective equipment as specified in Section 8.

ENVIRONMENTAL PRECAUTIONS:

Ventilate area of leak or spill. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible.

METHODS & MATERIALS FOR CONTAINMENT & CLEANING UP

Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:

Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Avoid contact with eyes and skin.

PRECAUTIONS FOR SAFE STORAGE (including any incompatibilities):

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Do not store near acids, heat, oxidizable materials or organics.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

CONTROL PARAMETERS:

OCCUPATIONAL EXPOSURE LIMIT or BIOLOGICAL LIMIT VALUE:

Airborne Exposure Limits:

AIHA (WEEL) -

Sodium Hypochlorite: 2 mg/m³ (STEL)

OSHA Permissible Exposure Limit (PEL) -

Sodium Hydroxide: 2 mg/m³ Ceiling

Chlorine (from Sodium Hypochlorite): 0.5 ppm (TWA), 1 ppm (STEL)

ACGIH Threshold Limit Value (TLV) -

Sodium Hydroxide: 2 mg/m³ Ceiling

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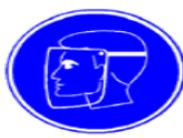
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APPROPRIATE ENGINEERING CONTROLS:

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally 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 ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.



PERSONAL RESPIRATORS (NIOSH APPROVED):

If the exposure limit is exceeded, a full face piece respirator with an acid gas cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

SKIN PROTECTION:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

EYE PROTECTION:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:

PHYSICAL STATE: Clear Liquid.

COLOR: Banana-colored

ODOR: Pungent, chlorine-like odor.

ODOR THRESHOLD: Not available

Molecular Weight: 74.45

Chemical Formula: NaOCl

pH: (11-14)

MELTING POINT: -18.3C

BOILING POINT: 103.8C (219F)

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FLASH POINT: Not available

EVAPORATION RATE (BuAc=1): Not applicable. (Similar to water)

FLAMMABILITY (solid, gas): Not available

VAPOR PRESSURE (mm Hg): Approx. 2.5 KPA at 20°C

VAPOR DENSITY (Air=1): Not applicable.

SPECIFIC GRAVITY: (1.168 – 1.238) @ 60 °F

SOLUBILITY IN WATER: Completely soluble

% Volatiles by volume @ 21C (70F): Decompose leaving salt solution.

PARTITION COEFFICIENT n-octanol / water: Not available

AUTO-IGNITION TEMPERATURE: Not available

DECOMPOSITION TEMPERATURE: Not determined, since sodium hypochlorite is unstable.

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Slowly decomposes on contact with air. Rate increases with the concentration and temperature. Exposure to sunlight accelerates decomposition. Sodium hypochlorite becomes less toxic with age.

CONDITIONS TO AVOID: Light, heat, air and incompatibles. Do not mix with other chemicals

INCOMPATIBILITIES: Ammonia (chloramine gas may evolve), amines, ammonium salts, aziridine, methanol, phenyl acetonitrile, cellulose, ethyleneimine, oxidizable metals, acids, soaps, and bisulfates.

HAZARDOUS DECOMPOSITION PRODUCTS: Emits toxic fumes of chlorine when heated to decomposition. Sodium oxide at high temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Irritation data: eye, rabbit, 10 mg - Moderate Investigated as a tumorigen, mutagen.

POTENTIAL HEALTH EFFECTS

INHALATION:

Excessive inhalation of vapors, mists, or fumes may cause bronchial irritation, coughing, labored breathing, nausea, and pulmonary edema. Additional effects have included circulatory collapse and confusion, delirium, coma.

INGESTION:

May cause erosion of the mucous membranes. Symptoms include vomiting, circulatory collapse, confusion, coma, and death. May cause edema of pharynx, glottis, and larynx and perforation of the esophagus or stomach. Effects are less damaging at lower concentrations.

SKIN CONTACT:

Contact may cause severe irritation with blistering and eczema, especially at higher concentrations. Prolonged exposure may cause destruction of the dermis with impairment of the skin. Burn may not be immediately apparent.

EYE CONTACT:

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Contact may cause impairment of vision and corneal damage, especially at higher concentration. Severe irritation and burn can occur.

CHRONIC EXPOSURE:

A constant irritant to the eyes and throat. May cause lung damage, tissue destruction, & eye burns. May act as a sensitizer.

AGGRAVATION OF PRE-EXISTING CONDITIONS:

Persons with impaired respiratory function may be more susceptible to the effects of the substance.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY:

This material will not harm biological sewage treatment work in normal use.

The surfactant(s) contained in this preparation complies (comply) with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents.

FATE AND TRANSPORT: This material is not expected to bio-accumulate under normal use.

SECTION 13: DISPOSAL CONSIDERATIONS

Product does not contain any prescribed substances under the Environmental Protection Act Regs (1991) but is classified as special waste under the Control of Substances (Special Waste) Regs 1996. Dilute with water and flush to sewer if local ordinances allow, otherwise, whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. For small quantities dilute with at least 1000 parts of water and pour down waste water drain (foul sewer). Rinse out empty containers thoroughly and recycle if facilities exist or dispose of as commercial waste. For larger quantities contact a licensed waste contractor.

SECTION 14: TRANSPORT INFORMATION

Domestic (Land, D.O.T.) & International (Water, I.M.O.)

Proper Shipping Name: HYPOCHLORITE SOLUTION

Hazard Class: 8

UN/NA: UN1791

Packing Group: III

Information reported for product/size: 4L



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SECTION 15: REGULATORY INFORMATION

-----\Chemical Inventory Status - Part 2\-----Canada--
 Korea: Yes DSL: Yes NDSL: No Phil.: Yes

-----\Federal, State & International Regulations - Part 1\-----SARA 302- -----SARA 313-----
 RQ: No TPQ: No List: No Chemical Catg.: No

-----\Federal, State & International Regulations - Part 2\-----RCRA- -TSCA-
 CERCLA: 100 261.33: No 8(d): No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
 Reactivity: No (Mixture / Liquid)

Australian Hazchem Code: 2R

Poison Schedule: S5

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe Flammability Rating: 0 - None Reactivity Rating: 1 - Slight

Contact Rating: 4 - Extreme (Corrosive)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: White (Corrosive)

Risk Phrase: 31, 34, 36, 38, 50

Safety Phrase: 1, 2, 26, 36, 37, 39, 45

SECTION 16: OTHER INFORMATION

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