

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Sodium hypochlorite 10% sol.
HCl PRODUCT ID NUMBER: 02744
SYNONYMS: Liquid bleach; Liquid chlorine
CHEMICAL FAMILY NAME: Inorganic, salt

NFPA HAZARD RATINGS (H-F-R): 2-0-1
HMIS HAZARD RATINGS (H-F-R): 2-0-1

DISTRIBUTOR: HCl U.S.A. DISTRIBUTION COMPANIES, INC.
TECHNICAL RESOURCE CENTER
6529 S. BROADWAY
ST. LOUIS, MO 63111
(314) 353-6500

IN CASE OF EMERGENCY CALL: CHEMTREC 1-800-424-9300

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	CAS No.	PERCENT
sodium hypochlorite	007681-52-9	10

Trace impurities and additional material names not listed above may also appear in the Regulatory Information Section (Section 15) towards the end of the MSDS. These materials may be listed for local "Right to Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

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

Danger!
Oxidizer!
This material may cause burns to skin, eyes, respiratory tract and mucous membranes.
Pulmonary aspiration hazard- can enter lungs and cause damage.

Continued

POTENTIAL HEALTH EFFECTS

SKIN: May cause moderate to severe irritation consisting of discomfort, itching, reddening and swelling.
Contact with the skin can cause chemical burns.
May cause eczema.

EYES: Contact with the eyes causes redness, tearing, and blurred vision.
May cause burns to eyes.

INGESTION: Ingestion causes pain and inflammation of the mouth, gastrointestinal tract, and erosion of the mucous membranes.

INHALATION: Inhalation may cause irritation, burning sensation, coughing, wheezing, laryngitis, shortness of breath or headache.
May cause lung damage/edema.

Components found on one of the OSHA designated carcinogen lists are listed below.

INGREDIENT	NTP	IARC	OSHA
Sodium hypochlorite	N	N	N

This product does not contain any chemicals reportable under California Proposition 65.

4. FIRST AID MEASURES

SKIN CONTACT: Remove contaminated clothing and shoes.
Wash exposed areas with soap and water.
Call a physician if irritation persists.

EYE CONTACT: Flush eyes with water for at least 15 minutes.
Get immediate medical attention.

INGESTION: Do not induce vomiting. Give 1-2 glasses of water to dilute. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.
Do not give anything by mouth to an unconscious person.
Get immediate medical attention.

INHALATION: Remove to fresh air.
If breathing has stopped, give artificial respiration.
Get immediate medical attention.

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RE FIGHTING MEASURES

FLAMMABILITY AND EXPLOSIVE PROPERTIES

FLASHPOINT: N/AP
FLASH POINT METHOD: N/AP
LOWER FLAMMABILITY LIMIT(% IN AIR): N/AV
UPPER FLAMMABILITY LIMIT(% IN AIR): N/AV
AUTOIGNITION TEMPERATURE: N/AV
FLAMMABILITY CLASSIFICATION: Non-flammable

EXTING. MEDIA: This product is not flammable. Use extinguishing media for surrounding fire.

FIRE FIGHTING: Use NIOSH-approved self-contained breathing apparatus and complete protective clothing when fighting chemical fires.
Cool fire-exposed containers with water spray.
Use water spray to disperse vapors and to provide protection for persons attempting to stop leak.

FIRE HAZARDS: Closed containers of this product may explode when exposed to excessive heat.
During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Avoid contact with combustible materials. May ignite or explode on contact with combustible materials.

5. ACCIDENTAL RELEASE MEASURES

SMALL SPILLS: Contain spill and ventilate area. Absorb on inert media and containerize for disposal.

LARGE SPILLS: Contain spill and ventilate area. Permit only trained personnel wearing full protective equipment to enter the spill area. Collect the spill in a waste container or remove with a vacuum truck.
Prevent spill from entering natural watercourses.

OTHER: Do not use combustible absorbents.

Wear complete protective clothing when cleaning up chemical spills.

Spills and releases may have to be reported to federal and/or local authorities. See the Regulatory Information section (section 15) regarding reporting requirements.

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1. HANDLING AND STORAGE INFORMATION

HANDLING: Avoid contact with skin, eyes, and clothing.
Avoid breathing product vapors and mists.
Do not take internally.
Wash thoroughly after handling this material.
Use this material only with adequate ventilation.

STORAGE: Keep container closed when not in use.
This material should be stored in a dry, cool place. Store in well
ventilated areas and at moderate temperatures.
Protect against physical damage.
The empty container is hazardous.

2. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

Good general ventilation (typically 10 air changes/hour) should be used. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

SKIN: Wear protective gloves made of neoprene or rubber.

EYES: Wear chemical safety goggles.

RESPIRATORY: If engineering controls do not maintain airborne concentrations below recommended limits, wear a NIOSH-approved respirator for dusts and mists.

OTHER: Emergency showers, eye-wash stations, and fire blankets should be accessible. Wear protective clothing.

EXPOSURE GUIDELINES

INGREDIENT	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
Sodium hypochlorite	N/EST	N/EST	N/EST	N/EST

See 29 CFR 1910.1000 (D)(2) and ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices" booklet (Appendix C) for the determination of exposure limits for mixtures. Consult an industrial hygienist or similar professional to confirm that the calculated exposure limits are appropriate.

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9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
APPEARANCE:	Clear, pale yellow or green
ODOR:	Chlorine odor
MOLECULAR WEIGHT:	N/AV
SPECIFIC GRAVITY:	1.2
SOLUBILITY (IN WATER):	Complete
BOILING POINT:	N/AV
FREEZING POINT:	N/AV
MELTING POINT:	N/AV
PRODUCT pH (at 23 °C):	12-13
VAPOR PRESSURE:	17.5 mmHg @ 20°C
VAPOR DENSITY:	N/AV
EVAPORATION RATE (BUTYL ACETATE=1):	N/AV
% VOLATILES:	N/AV

10. STABILITY AND REACTIVITY INFORMATION

STABILITY: Stable

COND. TO AVOID: Containers may rupture or explode if exposed to heat.

INCOMPATIBILITY: Acids
Metals
Combustible materials
Amines
Reducing agents

DECOMPOSITION: Oxides of chlorine

POLYMERIZATION: Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Continued

IMMEDIATE EFFECTS

Corrosive: inhalation, skin, eye, ingestion

Slightly toxic: ingestion.

LD50: 5800 mg/kg - oral - mouse

LD50: 8.91 g/kg - oral - rat

LD50: >10.0 g/kg - dermal - rabbit

LC50: >10.5 mg/L - inhalation - rat

Irritation data: 10 mg - eyes - rabbit - moderate

DELAYED EFFECTS (CHRONIC AND SUBCHRONIC)

CARCINOGENICITY: No data available

MUTAGENICITY: Mutation in microorganisms - *Salmonella typhimurium* 1 mg/plate (-S9); DNA repair - *Escherichia coli* 20 ug/disc; DNA damage - *Escherichia coli* 420 umol/L; phage inhibition capacity - *Escherichia coli* 103 ug/well; micronucleus test - non-mammalian species multiple 200 ppb; cytogenetic analysis - non-mammalian species multiple 120 ug/L; cytogenetic analysis - human lymphocyte 100 ppm 24 hour(s); sister chromatid exchange - human embryo 149 mg/L; cytogenetic analysis - hamster lung 100 mg/L

EPIDEMIOLOGY: No data available

TERATOGENICITY: No data available

REPRODUCTIVITY: No data available

NEUROTOXICITY: No data available

12. ECOLOGICAL INFORMATION

This product is highly toxic to aquatic life.

Fish toxicity: 94.0 ug/L 96 hour(s) LC50 (mortality) Cutthroat trout (*Oncorhynchus clarkii*)

Invertebrate toxicity: 31.6 ug/L 7 hour(s) IC50 (species diversity) Protozoan phylum (Protozoa)

Algal toxicity: 90 ug/L 96 hour(s) LC50 (mortality) Algae, phytoplankton, algal mat (Algae)

Phytotoxicity: 230 ug/L 35 hour(s) (Biomass) Curled pondweed (*Potamogeton crispus*)

Other toxicity: 2.1 ug/L 28 day(s) (Chlorophyl) Aquatic community (Aquatic community)

Continued

13. DISPOSAL CONSIDERATIONS

A WASTE: No
RCRA ID NUMBER: N/AP

VOC CONTENT (lbs/gal): N/AP

Discharge, treatment, or disposal may be subject to Federal, State, or local laws. State and Local regulations and restrictions are complex and may differ from Federal disposal regulation.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA Classification and the proper disposal method.

14. TRANSPORTATION INFORMATION

DOT SHIPPING NAME: Hypochlorite solutions
UN1791

DOT HAZARD CLASS: 8
DOT ID NUMBER: UN1791
PACKING GROUP: III

Labels required: Corrosive

IMDG HAZARD CLASS: 8

ICAO HAZARD CLASS: 8

15. REGULATORY INFORMATION

CERCLA "REPORTABLE QUANTITY" (RQ): 1000 lbs. (Sodium hypochlorite)

Spills/releases resulting in the loss of this product at or above its RQ requires immediate notification to the National Response Center (1-800-424-8802) and to your Local Emergency Planning Committee.

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TSCA

TSCA INVENTORY STATUS: Yes

SARA TITLE III

INGREDIENT	SECTION 313	SECTION 302
Sodium hypochlorite	no	no

SECTION 311/312 HAZARD CLASS: Immediate (acute) health hazard

WHMIS CLASSIFICATION (CANADA)

Class E

FOREIGN INVENTORY STATUS

No data available

ADDITIONAL REGULATORY INFORMATION

This product does not contain any chemicals reportable under California Proposition 65.

MASSACHUSETTS SUBSTANCE LIST:

Sodium hypochlorite

NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST:

Sodium hypochlorite

PENNSYLVANIA HAZARDOUS SUBSTANCE LIST:

Sodium hypochlorite

15. OTHER INFORMATION

CREATION DATE: 10/10/1997

REVISION DATE: 10/10/1997

The information herein is presented in good faith and is believed to be correct as of the date hereof. However, HCI makes no representation as to the completeness and accuracy thereof. Users must make their own determination as to the suitability of the product for their purposes prior to use.

No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other

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