



Safety Data Sheet

Issuing Date
15-November-10

Revision Date
27-September-12

Revision Number
2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Sodium Hypochlorite Solution
UN-No	UN1791
Synonyms	Bleach; hypochlorous acid, sodium salt; soda bleach; sodium oxychloride.
Recommended use	Raw material in chemical processing.
Manufactured by	National Titanium Dioxide Company, Ltd. P.O. Box 13586 Jeddah 21414, Kingdom of Saudi Arabia Telephone: +966(0)2-652-9966 Fax: +966(0)2-652-9933
Other Information	E-mail contact: cldemille@cristal.com
Emergency Telephone Number	SGS +966-3-362-21-93 (Al-Jubail)

2. HAZARDS IDENTIFICATION

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO EYES AND RESPIRATORY TRACT.

Appearance
Colourless to yellow

Physical State
Liquid

Odor
Slight chlorine

OSHA Regulatory Status This product is considered hazardous under the criteria of the U.S. Federal OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential Health Effects

Acute Toxicity

Skin	May cause skin irritation and/or dermatitis.
Inhalation	Irritating to mucous membranes. Symptoms may include coughing and sore throat.
Ingestion	May cause nausea, vomiting.
Eyes	Contact may cause severe irritation and damage, especially at higher concentration.

Chronic Toxicity

Chronic effects Prolonged skin contact may defat the skin and produce dermatitis.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Weight %
Sodium hypochlorite	7681-52-9	10 - 12

4. FIRST AID MEASURES

Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash off immediately with plenty of water removing all contaminated clothes and shoes. Remove all contaminated clothing and shoes. Seek immediate medical attention/advice
Inhalation	Move to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult and you are trained. Seek immediate medical attention/advice.
Ingestion	Do NOT induce vomiting. Give large amounts of water. Get medical attention immediately.
Notes 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.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Not considered to be a fire hazard. Substance releases oxygen when heated, which may increase the severity of an existing fire. Containers may rupture from pressure build up.
Flash Point	Not applicable.
Instructions to Firefighters	In the event of a fire, wear full protective clothing and NIOSH approved self contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.
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.
Hazardous Combustion Products	Oxygen and chlorine.
Health Hazard	2
Flammability	0
Stability	1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Wear full protective clothing. Instruct others to stay at a safe distance.
Methods for Containment	Prevent further leakage or spillage if safe to do so. Use dyking or absorbant to prevent run-off from entering waterways.

Methods for Cleaning Up	Absorb with inert material (e.g. sand, earth, vermiculite) and place into a chemical waste container for disposal. DO NOT use combustible materials such as saw dust. DO NOT flush to sewer.
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7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided in areas where accidental exposure is possible. Wash thoroughly after handling. Do not breathe vapors or spray mist.
Storage	Keep containers tightly closed in a cool, well-ventilated place. Protect against physical damage. Isolate from incompatible substances. Store in rubber lined mild steel, PVC lined plastic or high density polyethylene containers

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures	A local and/or general exhaust is recommended to keep employee exposures as low as possible.
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Personal Protective Equipment

Eye/Face Protection	Chemical splash goggles or full length faceshield and safety glasses with sideshields. Eyewash stations should be located and available where this product is used.
Skin and Body Protection	Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Respiratory Protection	If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece 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 facepiece positive pressure, air supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen deficient atmospheres.
Hygiene Measures	Immediately remove contaminated clothing. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colourless to yellow	Odor	Slight chlorine
Physical State	Liquid	pH	9-10
Flash Point	Not applicable	Autoignition Temperature	Not applicable
Boiling Point/Range	40 °C / 104 °F	Melting Point/Range	Not applicable 6 °C / 21 °F
Explosion Limits	Not applicable	Flammability Limits in Air	Not flammable
Specific Gravity	1.07-1.14	Water Solubility	Soluble in water
Evaporation Rate	Not determined	Vapor Pressure	17.5 mm Hg @ 20° C
Vapor Density	Not determined	VOC Content(%)	None
Viscosity	Not determined		

10. STABILITY AND REACTIVITY

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.
Incompatible Products	Ammonia (chloramine gas may evolve), amines, ammonium salts, aziridine, methanol, phenyl acetonitrile, cellulose, ethyleneimine, oxidizable metals, acids, soaps, and bisulfates.
Conditions to avoid	Protect from light. Excessive heat.
Hazardous decomposition products	Emits toxic fumes of chlorine when heated to decomposition. Sodium oxide at high temperatures.
Hazardous Reactions	Refer to Incompatible Products.
Hazardous Polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product information Toxic by inhalation, in contact with skin and if swallowed.

Animal Toxicology Rabbit - eye: moderate irritation

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium hypochlorite	8200 mg/kg (Rat)	10000 mg/kg (Rabbit)	

Chronic effects Prolonged skin contact may defat the skin and produce dermatitis.

Target organ effects Mucous membranes.

12. ECOLOGICAL INFORMATION

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Sodium hypochlorite	EC50 = 0.095 mg/L 24 h	LC50 0.22 - 0.62 mg/L Pimephales promelas 96 h LC50= 5.9 mg/L Pimephales promelas 96 h		EC50 = 2.1 mg/L 96 h

Persistence and degradability Not persistent. Degradable.

Bioaccumulation/Accumulation Does not bioaccumulate.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of in accordance with local regulations.

Contaminated packaging Containers of this material may be hazardous when empty since they retain residues (liquid & vapor). Clean with water. Dispose of in accordance with local regulations.

Chemical Name	California Hazardous Waste Status
Sodium hypochlorite	Toxic; Ignitable; Reactive

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name Hydrochloric acid (Mixture)
Hazard Class 8
UN-No UN1791
Packing Group II

Proper Shipping Name Hydrochloric acid (Mixture)

15. REGULATORY INFORMATION

International Inventories

USA (TSCA) Complies
Canada (DSL) Complies
European Union (EINECS) Complies
Japan (ENCS) Complies
China (IECSC) Complies
Korea (KECL) Complies
Philippines (PICCS) Complies
Australia (AICS) Complies
New Zealand (NZIoC) Complies

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.

SARA 311/312 Hazard Categories

Acute Health Hazard Yes
Chronic Health Hazard No
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactivity Hazard No

Clean Water Act

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).

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium hypochlorite 7681-52-9 (10 - 12)	100 lb			X

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

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
Sodium hypochlorite	100 lb	

U.S. State Regulations

U.S. State Right-to-Know Regulations

This product contains one or more substances regulated by state right-to-know regulations.

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sodium hypochlorite	X	X	X		

Other International Regulations

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

- C Oxidizing materials
- E Corrosive material
- F Dangerously reactive material





Legend

X - Listed

NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION

HMIS Rating

Health Hazard	2
Flammability Hazard	0
Physical Hazard	1
Personal Protection	D

Note

This Personal Protection rating will generally suffice for normal operating conditions. Please note, however, that the type of personal protection utilized may change based on specific use conditions. Consult the Exposure Controls/Personal Protection section of this SDS.

Revision Date 27-September-12

Reason for revision Company Logo.

Disclaimer

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of SDS