SAFETY DATA SHEET

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

1. Identification

Product identifier	**Sodium Hypochlorite, 4%-30%**
Other means of identification	Hypo, Liquid Bleach, Soda Bleach, Bleach
Recommended use	Swimming pool sanitizer, bleach for textiles, wood pulp and in effluent treatment, Water treatment chemical.
Recommended restrictions	None known

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	ERCO Worldwide
Address	101 Highway 73 South Nekoosa, WI 54457 USA
Telephone	(715)-887-4000
Website	http://www.ercoworldwide.com
E-mail	productinfo@ercoworldwide.com
Emergency phone number	Canada & USA: 1-800-424-9300 (CHEMTREC)

Supplier Refer to Manufacturer

2. Hazard(s) Identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion	Category 1
	Serious eye damage	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long term hazard	Category 2
OSHA defined hazards	Not Classified	

Label elements

Signal word Danger

Hazard statement
May be corrosive to metals.
Causes severe skin bums and eye damage.
May cause respiratory irritation.
Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Keep only in original container. Do not breathe dusts, fume, gas, mist, vapors, spray. Wash hands and face thoroughly after handling. Wear protective gloves, protective clothing, eye protection, face protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment.

Response **IF SWALLOWED:** Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Absorb spillage to prevent material damage.

Storage Store in corrosive resistant container with a resistant inner liner. Store locked up. Store in a well-ventilated place.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Contact with acids liberates toxic gas.

3. Composition/Information on Ingredients

Chemical name	Common name and synonyms	CAS number	Conc. % By Weight
Sodium Hypochlorite	None	7681-52-9	4-30 w/w%
Sodium Hydroxide	None	1310-73-2	1-5 w/w%

4. First-Aid Measures

Inhalation Move to fresh air. Call a physician or poison control center immediately. If breathing is difficult, trained personnel should give oxygen. If breathing

	stops, provide artificial respiration. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Skin Contact	Take off immediately all contaminated clothing. Immediately flush skin with running water for at least 20 minutes. Cover wound with sterile dressing. Do not rub area of contact. Wash contaminated clothing before reuse. Leather and shoes that have been contaminated with the solution may need to be destroyed. Call a physician or poison control center immediately.
Eye Contact	Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Take care not to rinse contaminated water into the unaffected eye or onto the face. Call a physician or poison control center immediately.
Ingestion	If swallowed: Rinse mouth. Do NOT induce vomiting. If vomiting occurs, keep head low so stomach content doesn't get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. Call a physician or poison control center immediately.
Most important symptoms/effects, acute and delayed	Corrosive effects. Symptoms may include stinging, tearing, redness, swelling and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-Fighting Measures

Suitable extinguishing media	Use as appropriate: Water Fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO_2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire. Do no use dry extinguishing media that contains ammonium compounds.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and	Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn.

precautions for firefighters	
Firefighting equipment/instructions	In case of fire and/or explosion, do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth, and place into containers for later disposal. Following product recovery, flush area with water. Never return spills to original containers for re-use. Contaminated absorbent material may pose the same hazards as the spilled product. For waste disposal, see section 13 of the SDS.
Environmental precautions	Do not discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.

7. Handling and Storage

Precautions for safe handling	Wear chemically resistant protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Avoid contact with eyes, skin and clothing. Do not apply heat or direct sunlight. Chemical attack increases with solution strength. Use with adequate ventilation. Observe good Industrial hygiene practices. Temperature and product concentration affect product quality and decomposition rates.
Conditions for safe storage, including any incompatibilities	Store in a cool and well-ventilated place. Store in a corrosive resistant container. Consult container manufacturer for additional guidance. Store away from and do not mix with incompatible materials such as acids,

oxidizers, organics, reducing agents and all metals except titanium. For frozen product, contact manufacturer for guidance.

8. Exposure Controls/Personal Protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium Hydroxide (CAS 1310-73-2)	PEL	2 mg/m^3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium Hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m^3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium Hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m^3

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Sodium Hypochlorite (CAS 7681-52-9)	STEL	2 mg/m^3

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye Wash facilities and emergency showers must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Reports indicate that sodium hypochlorite can react with various fabrics usually increasing with concentration. Reactions vary significantly depending on strength of chemical, material, fabric treatment and color of dyes. FRC treated cotton has a stronger response than plain cotton. Poly blend fabrics and Meta aramid fabrics have a weaker response than natural fibers. Contact the Personal Protective Equipment manufacturer for specific information about their products.

Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal Hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and Chemical Properties

Appearance	
Physical state	Liquid
Form	Liquid
Colour	Yellow to greenish
Odor	Pungent
Odor threshold	0.9 mg/m^3
pH	12 - 14 (25°C/77°F)
Melting point/ Freezing point	-17°F (-27.22°C) (16% solution)
Initial boiling point and boiling range	Not available
Flash point	Not applicable
Evaporation rate	No data available
Flammability (solid, gas)	Not available
Upper/lower flammability or explosive limits	
Flammability limit – lower (%)	Not applicable
Flammability limit – upper (%)	Not applicable
Explosive limit – lower (%)	Not applicable
Explosive limit – upper (%)	Not applicable
Vapor pressure	12 mm Hg (12.5% solution)
Vapor density	Not available
Relative density	Not available
Relative density temperature	Not available
Solubility (ies)	
Solubility (water)	Completely miscible.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available
Viscosity	Not available
Other information	
Bulk Density	Not applicable
Molecular weight	74.5 g/mol

10. Stability and Reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to Avoid	Contact with incompatible materials. Avoid ultraviolet (UV) light sources. Excessive heat. Reacts violently with strong acids. Acid contact will produce chlorine gas. Amine contact will product chloramines.
Incompatible materials	Strong oxidizing agents. Acids. Metals. Organic compounds. Ammonia.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological Information

Information on likely routes of exposure

Inhalation	Vapors and spray mist may irritate throat and respiratory system and cause coughing.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may produce bums to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
Symptoms related to the physical, chemical and toxicological characteristics	Corrosive effects. Symptoms may include stinging, tearing, redness, swelling and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Occupational exposure to the substance or mixture may cause adverse effects.

Components	Species	Test Results
Sodium hypochlorite Solution 17%-30% (CAS Mixture)		
Dermal		
LD_{50}	Rabbit	>2 g/kg
Oral		
LD_{50}	Rat	3 – 5 g/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization No data available.

Skin sensitizer No data available.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Sodium hypochlorite (CAS 7681-52-9)

Overall Evaluation of Carcinogenicity 3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity No data available.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure No data available.

Aspiration toxicity No classified, however droplets of the product may be aspirated into the lungs through ingestion or vomiting and may cause a serious chemical pneumonia.

Chronic effects Prolonged or repeated overexposure causes lung damage.

Further Information Prolonged inhalation may be harmful.

12. Ecological Information

Ecotoxicity Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Sodium hypochlorite. 17-30% (CAS Mixture)			
Aquatic			
Acute			
Fish	LC_{50}	Bluegill (*Lepornis macrochirus*)	2.9 mg/l, 96 hours
		Oncorhynchus mykiss	0.9 mg/l, 0.5 hours
		Pimephales promelas	1.4 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bio accumulative potential No data available for this product.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal Considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

DOT

UN number	UN 1791
UN proper shipping name	Hypochlorite solutions
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB3, N34, T4, TP2, TP24
Packaging exceptions	154
Packaging non bulk	203
Packaging bulk	241

IATA

UN number	UN 1791
UN proper shipping name	HYPOCHLORITE SOLUTION
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	Yes
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN 1791
UN proper shipping name	HYPOCHLORITE SOLUTION
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory Information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.	
CERCLA Hazardous Substance List (40 CFR 302.4)	Sodium hydroxide (CAS 1310-73-2)	Listed
	Sodium hypochlorite (CAS 7681-52-9)	Listed
U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.	
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard -No	
SARA 302 Extremely hazardous substance	Not listed.	
SARA 311/312 Hazardous chemical	Yes	
SARA 313 (TRI reporting)	Not regulated	
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Not regulated.	
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)	Not regulated.	
Safe Drinking Water Act (SDWA)		

US state regulations

US. Massachusetts RTK - Substance List	Sodium hydroxide (CAS 1310-73-2) Sodium hypochlorite (CAS 7681-52-9)
US. New Jersey Worker and Community Right-to-Know Act	Sodium hydroxide (CAS 1310-73-2) Sodium hypochlorite (CAS 7681-52-9)
US. Pennsylvania Worker and Community Right-to-Know Law	Sodium hydroxide (CAS 1310-73-2) Sodium hypochlorite (CAS 7681-52-9)
US. Rhode Island RTK	Sodium hydroxide (CAS 1310-73-2) Sodium hypochlorite (CAS 7681-52-9)
US. California Proposition 65	California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.
US. California Proposition 65 – Carcinogens & Reproductive Toxicity (CRT): Listed substance	Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16.Other Information

Issue date	3/31/2022
Revision #	8
Revision Indicator	Clarified precautionary statements and address updated.
NFPA Ratings	

List of abbreviations	LD_{50}: Lethal Dose, 50% LC_{50}: Lethal Concentration, 50% EC_{50}: Effective Concentration, 50% TWA: Time Weighted Average
Bibliography	EPA: AQUIRE database HSDB®: Hazardous Substance Data Bank US. IARC Monographs on Occupational Exposure to Chemical Agents IARC monographs. Overall Evaluation of Carcinogenicity ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer

Information presented in this SDS is furnished in accordance with OSHA's Hazard Communication Standard (HCS) 2012.

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