MATERIAL SAFETY DATA SHEET
SODIUM HYPOCHLORITE

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1. Product and Company Identification

Product Name	Sodium hypochlorite
Structure Formula	NaOCl
CAS Number	7681-52-9
Synonyms	Bleach, HICHLOR
Manufaturer's Name	AGC Chemicals (Thailand) Co., Ltd.
Address	
Head Office	24th floor, Bangkok Insurance Building, 25 South Sathorn Road, Bangkok 10120, Thailand Tel. (662) 679-1600 Fax. (662) 677-3177
Phrapadaeng Factory	202 Suksawasdi Rd., Km.17, Samutprakarn, 10290, Thailand Tel. (662) 463-6345-8 Fax. (662) 463-3728
Rayong Factory	4 Soi G-12, Pakorn Songkrohrad Rd., Eastern Industrial Estate, Map-Ta-Phut, Muang, Rayong 21150, Thailand Tel. (038) 683-572-5 Fax. (038) 683-576

2. Composition / Information on Ingredient

Substance	Concentration (by weight)
Sodium hypochlorite	≥ 10% $AB.Cl_2$

3. Physical / Chemical Properties

Molecular Weight	74.4	**pH**	11
Melting Point (°C)	-6 (5% solution)	**Density (g/cm^3)**	1.2
Boiling Point (°C)	Decomposition above 40°C	**Status**	Liquid
Appearance and Odor	Greenish yellow with a chlorine odor		
Solubility in water	Soluble in all proportions.		

4. Fire and Explosion Hazard Data

Extinguishing Media	Use any means suitable for extinguishing surrounding fire and/or materials.
Fire Hazard Comments	Fire-exposure or excessive heat may cause the rupture of containers.
Special Fire Fighting Procedures	Use water to cool the containers.
Protective Equipments for Fire Fighters	Wear fire-resistant suit, chemical resistant suit and self-contained breathing apparatus.
Flash Point (°C)	Non-flammable
Autoignition Temperature (°C)	Non-flammable

NFPA Symbol

Flammability	0	: Will not burn
Reactivity	2	: May undergo violent change at elevated temperature and pressure.
Health	2	: Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical treatment is given.
Special data	OXY	: Oxidizer

5. Reactivity Data

Stabilization	Solution decomposes slowly. Rate of decomposition depends on heat and light.
Prevention	Keep away from heat and light.
Explosion Data	Not explosive
Reaction with Water	Will not occur
Oxidation	Oxidizer
Hazardous Decomposition Products	Chlorine, oxygen, sodium chlorate
Protection from Decomposition Products	Use chemical cartridge respirator containing the chlorine cartridge.

6. Health Hazard Data

Special Precaution A corrosive chemical.

Health Effects

Routes of Entry Inhalation, skin, eye and swallow

Hazard (Skin, Eye and Mucous membrane)

Causes irritation.

Effects of Short-Term (Acute) Exposure

- **Inhalation** : May irritate nose and the respiratory tract.
- **Skin Contact** : May cause skin irritation. In severe cases, burn may occur.
- **Eye Contact** : May cause severe eye irritation.
- **Ingestion** : May cause irritation and pain. Causes severe burn to mouth and stomach, vomiting, shock and death.

Effects of Long-Term (Chronic) Exposure

- **Skin** : Causes dryness, cracking and dermatitis.

First Aid Procedure

Skin Contact	Remove contaminated clothing and shoes under runnning water for at least 15 minutes. Obtain medical attention immediately.
Eye Contact	Flush with running water for at least 15 minutes, occasionally lifting the eyelids. Do not allow the contaminated water into the non-affected eye. Obtain medical attention immediately.
Inhalation	Move victim to fresh air. If breathing is difficult, give oxygen. Obtain medical attention immediately.
Ingestion	Never give anything by mouth if victim is unconscious. Rinse mouth thoroughly with water. Do not induce vomiting. Drink 240 to 300 ml. of water. Obtain medical attention immediately.
Exposure Guidelines	TLV-C: 2 mg/m^3

Toxicological Information

Acute Toxicity

LD_{50} ingestion (mg/l)	5800	(Rat)
LD_{50} skin (mg/l)	> 10000	(Rabbit)
LC_{50} inhalation (ppm)	> 10000 for 1 h.	(Rat)
Eye Contact	Severe irritation	
Skin Contact	Irritation	
Sub-Acute Toxicity	Slightly liver damage on rat when administered with 0.4% of sodium hypochloride for 13 consecutive weeks.	
Allergenic Effects	Not information available	

Chronic Toxicity

Carcinogenic Effects	Not classified as carcinogen.
Embryologic Effects	Not information available
Teratologenic Effects	Not information available
Mutagenic Effects	Not information available
Neurogenic Effects	Not information available

7. Precaution for Handling and Use

Handling

Warning	Avoid generating mist for decreasing the dispersion. Do not allow react with acid which lead to chlorine gas.
Precaution	All equipments will be cleaned before using.
Ventilation	Adequate ventilation should be provided.
Safety Handling	Use smallest possible amount in designated areas with adequate ventilation. Prepare appropriate safety measures and protective equipment. Keep containers tightly closed.
Imcompatible Materials	Reducing agents, Strong acids, Nitrogen compound, Copper, Nickel, Cobolt

Exposure Controls

Personal Protection	Restrict access to exposure area. Use appropriate personal protective equipments. Have a well-ventilated system.
Environment Protection	Prevent liquid run-off into sewers, which lead to water ways. Use sand or soil to make a dike.
Spill and Leakage Procedures	Contain spill with soil, sand, or absorbent material. Sweep up material and place into a suitable labelled disposal container. Flush area with water.

Waste Disposal Method

Products	React with reducing agents such as sodium metabisulfite and then neutralize with sodium carbonate or sodium thiosulfate.
Empty Containers	Clean up with water and neutralize with sodium carbonate. Dispose containers with all compliance in law regulations.

8. Control Measure

Engineering Controls	Totally enclose processes and personal. Control the condition of process. Normal ventilation is generally adequate. If generated heat or vapors, local exhaust ventilation should be provided.
Respiratory Protection	Not specification but chemical cartridge respirator with a chlorine cartridge should be provided.
Body Protection	Protective clothing
Hand Protection	Chemical resistant gloves
Eye Protection	Chemical safety goggles, or glasses. Face shield may be used in properly.
Others Protection	Chemical resistant boots, Eyewash fountain and safety shower. Do not eat, drink or smoke in work areas.

9. Regulatory Information

ORANGE SYMBOL	LABEL
80 1791 : Corrosive substance and react violently with water. : UN Number	 For transportation. Label sizing : more than 250 x 250 mm. Picture sizing : 12.5 mm. far from edge 5 mm.

Hazchem Code

2R
1791

2 : Use water spray or fog to reduce or direct vapors.
R : Use chemical protective full body and self contained breathing apparatus. Dilute with water before release to sewers, water ways.
1791 : UN number

10. Transportation Information

UN Number	1791	**UN Class**	8
UN Packing Group	III	**IMDG-Ems Number**	8-08
IMDG-Class	8	**IMDG Packing Group**	III
IATA-Class	8	**Tank Number**	L4BV (+)
IATA-Packing Group	III		

11. Other Informations

Bioaccumulation	Not available
Ecotoxicological Information	Not available