Safety Data Sheet

SODIUM HYPOCHLORITE

Update: January 22nd ,2019

1. Identification

Product identifiers

Product name: SODIUM HYPOCHLORITE

Indication in other:

CAS #:7681-52-9 **EC/EINECS:** 231-668-3 **RTECS#:**NH3486300

UN#:1791 **EC Index #:**017-011-00-1

Manufacturer Info:

Aditya Birla Chemicals (Thailand) Co., Ltd (Chlor Alkali Division)

3 Soi G-2, Prakornsongkrorad Rd, Tambol HuayPong Amphur Muang Rayong, Rayong 21150

- Tel. +66-3868-7356-9
- Fax +66-3868-5074
- **Emergency contact number: +66-3868-7354 (Thailand)**

2. Hazards Identification

GHS Classification of the substance or mixture

Skin corrosion/Irritation	Category 1
Serious eye damage/eye irritation	Category 1
Skin sensitizer	Category 1
Specific target organ toxicity - single exposure (respiratory system)	Category 1
Specific target organ toxicity – repeat exposure (Respiratory system)	Category 1
Hazardous to the aquatic environment	Category 1

Label elements

Signal word DANGER

Hazard statement(s)

- **H372** Causes damage to respiratory organs through prolonged or repeated exposure
- **H314** Causes severe skin burns and eye damage
- **H400** Very Toxic to Aquatic life
- **EUH031** Contact with acid liberates toxic gas

Precautionary statement(s)

- **P201** Obtain special instructions before use.
- **P261** Avoid breathing fumes/vapors
- **P281** use personal protective equipment as required.
- **P403** Store in well ventilated area
- **P273** Avoid release to the environment.

Other hazards which do not result in classification: none

3. Composition/Information on Ingredients

Substances

Formula: NaOCl

Synonyms: Hichlor; Chloros; Surchlor

Molecular Weight: 74.442 g/mol

Component	CAS No	Wt.%
Sodium Hypochlorite	7681-52-9	More than 10%
Sodium Chloride	7647-14-5	Less than 12%
Sodium Hydroxide	1310-73-2	Less than 2%
Water	7732-18-5	76%

4. First Aid Measures

Inhalation Move victim to fresh air. If not breathing, give artificial respiration Get medical attention immediately.

Skin contact Take off clothing and Wash with plenty of water. Get medical attention immediately.

Eye contact Rinse thoroughly with plenty of water, keeping eyelids open and rinse for 20 minutes. Get medical attention immediately.

Ingestion Gargle, Don't vomit. Get medical attention immediately.

Most important symptoms and effects, both acute and delayed:

If inhaled: Cause severe irritation of mucous membranes of the nose, throat, coughing and feeling of suffocation.

Skin contact: Cause serious burns, blistering and tissue destruction.

Eye contact: Cause severe eye damage. Symptoms may include stinging, tearing, redness.

If swallowed : Ingestion of liquid sodium hypochlorite may result in severe irritation or ulceration of the mouth, throat and digestive tract which may be displayed by nausea, pain, vomiting, and in severe cases, collapse and shock.

Indication of any immediate medical attention and special treatment needed: Chest x-ray

5. Fire Fighting Measures

Suitable extinguishing media

Water, Carbon dioxide (CO_2), Foams, Dry chemicals

Unsuitable extinguishing media

None

Special hazards arising from the substance or mixture

Incombustible. This material is evaporated to corrosive gas and chlorine when heated.

Special protective equipment and precautions for fire-fighters

Wear full chemical resistant clothing with self-contained breathing apparatus (SCBA) for firefighting.
Use water to keep fire-exposed containers cool and continue until well after fire is out.

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6. Accidental Release Measure

General Information: Use proper personal protective equipment as indicated in Section 8.

Personal Precautions

- In event of leak or spill, keep upwind
- Evacuate personnel to safe areas.
- Avoid inhalation of vapors, gas .

Personal Protective Equipment

- Chemical Suit, respirator mask and gloves

Environmental Precautions

- Do not let this chemical enter the environment.

7. Handling and Storage

Handling:

- Do not breathe vapor or mist
- Ensure adequate ventilation in working area.

Storage:

- Do not store in direct sunlight.
- Keep away from heat, light, acid and reducing agent.
- Store in a tightly closed container. Store in cool and dry place.
- Store chemical containers in well ventilated areas of low fire potential, away from incompatible materials and away from sources of heat and ignition.

8. Exposure Controls/Personal Protection

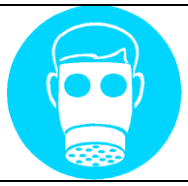
Control parameters

PEL-TWA 0.5 ppm (OSHA 2010)

PEL-Ceiling: 2 mg/m^3 (OSHA 2010)
TLV-STEL 1 ppm (ACGIH 2010)

Appropriate engineering controls
Ensure ventilation is adequate.

Personal Protective Equipment:

		
Hand Protection Gloves for chemical protection)	Respiratory Protection (Toxic gas masks)	Eye Protection (Chemical protective goggles)
		
Body Protection (Body Suit)	Face Protection (Face Shield)	

Work / Hygienic Practices:

- Wash contaminated clothing prior to reuse.
- Always wash hands before eating, drinking or using the toilet.
- Do not eat, drink, or smoke during work

9. Physical and Chemical Properties

1.)	Appearance	Greenish-yellow liquid
2.)	Odour	Pungent
3.)	Odour Threshold	0.77 ppm
4.)	pH	10.8-13.0
5.)	Melting point/freezing point	-19.4°C
6.)	Boiling point	111°C
7.)	Flash point	Not Applicable
8.)	Evaporation rate	No data available
9.)	Flammability (solid, gas)	No data available
10.)	Upper/lower flammability or explosive limits	No data available
11.)	Vapour pressure	17.5mmHg (1.6 kPa)@20^{o}C
12.)	Vapour density (Air =1)	2.61
13.)	Relative density	1.20 at 20°C (12.28% available chlorine)
14.)	Water solubility	Soluble in water
15.)	Partition coefficient: n-octanol/water log Pow	No data available
16.)	Auto ignition temperature	Not Applicable
17.)	Decomposition temperature	No data available
18.)	Viscosity	2.6 cP at 20°C

10. Stability and Reactivity

Reactivity

- Highly reactivity with Strong acid (such as Hydrochloric Acid, Nitric Acid), Acid compounds (such as Aluminium Chloride, Ferric Chloride, Alum), Acid-based cleaning compounds (such as Brick, Concrete cleaners), Ammonia compounds (such as Ammonium Chloride, Ammonium hydroxide,

Quaternary Ammonium salts) to release Chlorine gas and poison gas, reducing materials organic and inorganic Amines.

- React with Organic polymer cause Chlorine, Chlorinated organic compounds and explosion
- React with Reducing agent (Sodium Bisulfite, Sodium Thiosulfate) cause heat.

Chemical stability Stable under normal ambient handling conditions.
Possibility of hazardous reactions Hazardous polymerization will not occur.
Conditions to avoid Heat, Light
Incompatible materials Hydrogen Peroxide, Reducing agent, Metal (Copper, Nickel, Cobalt and Steel)
Hazardous decomposition products Oxygen (O_2), Chlorine (Cl_2)

11. Toxicological Information

Inhalation: Cough, Sore throat, Shortness of breath, Wheezing and Labored breathing.
Skin contact: Redness, Burning sensation, Pain and Skin burns.
Eye contact: Causes watering of the eyes, Redness, Pain and burns.
Ingestion: Ingestion of liquid chemicals may result in severe irritation or ulceration of the mouth, throat and digestive tract which may be displayed by nausea, pain, vomiting, cyanosis (lack of oxygen in the blood), and, in severe cases, collapse, shock and death.
Symptoms related to the physical, chemical and toxicological characteristic:
Inhalation may cause pneumonitis. Inhalation may cause lung edema, coughing, feeling of suffocation and vomit
Immediate effects:
Corrosive to the eyes, the skin and the respiratory tract.
Corrosive on ingestion, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, feeling of suffocation.
Sodium Hydroxide effects:
Cause dermatitis, bronchitis, permanent lung damage.
Numerical measures of toxicity:
Acute toxicity
LD_{50} Oral - rat > 5,000 mg/kg
LC_{50} Inhalation - rat >10,500 mg/m^3
LD_{50} Dermal – rabbit >10,000 mg/kg

12. Ecological Information

Eco toxicity

Fish	:Clupea harengusLC_{50}	0.065 mg/l - 96 h
Crustacea:	Daphnia magna EC_{50}	0.032 mg/l - 48 h
Algae	: Gracilariatenuistipiata red algae EC_{50}	46 mg/l - 96 h

Persistence and degradability Bio-degrable.
Bio-accumulative potential not Bio-accumulative
Mobility in soil No data available
Other adverse effects No data available

13. Disposal Considerations

Waste treatment methods
Waste treatment should be managed in an appropriate and approved waste facility. Dispose of all contained and contaminated spill residue in accordance with local/regional/national/international regulations.
Contaminated packaging
Dispose of as unused product

14. Transport Information

UN Number:	1791
UN Proper Shipping Name:	HYPOCHLORITE SOLUTION
Transport hazard class (es)	8
Packaging group	III
Marine pollutant	No

ADR

- UN Number: 1791
- UN Proper Shipping Name: HYPOCHLORITE SOLUTION
- Transport Hazard Class (es)
  Class: 8
- Packing Group: III
- Transport in bulk L4BV (+)

RID

- UN Number: 1791
- UN Proper Shipping Name: HYPOCHLORITE SOLUTION
- Transport Hazard Class (es)
  Class: 8
- Packing Group: III

IMDG

- UN Number: 1791
- UN Proper Shipping Name: HYPOCHLORITE SOLUTION
- Transport Hazard Class (es)
  - Class: 8
  - EmS No.: F-A, S-B
- Packing Group: III
- IBC Code: IBC03

IATA

- UN Number: 1791
- UN Proper Shipping Name: HYPOCHLORITE SOLUTION
- Transport Hazard Class (es):
  - Class: 8
- Packing Group: III

15. Regulatory Information

Thailand Regulations:

- Hazardous Substances Act: Class of Hazardous Substance: Type 1

U.S. Regulations:

- **SARA TITLE III of the Emergency Planning and Community Right-To Know Act (EPCRA) of 1986 and of 40 CFR 372:**
- **Section 302 Extremely Hazardous Substance (EHS):** CAS # 7782-50-5 100 Lbs. (45.4 Kilograms) (8.77Gals.) Threshold Planning Quantity (TPQ)
- **Section 304 Extremely Hazardous Substance (EHS):** CAS # 7782-50-5 10 Lbs. (4.54 Kilograms) (0.877Gals.) Reportable Quantity (RQ).

OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

- **29 CFR Part 1910.119:** Process Safety Management of Highly Hazardous Chemicals. Requires facilities to develop a process safety management program based on Threshold Quantities (TQ) of highly hazardous chemicals, listed on Appendix A of the standard

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: C, N

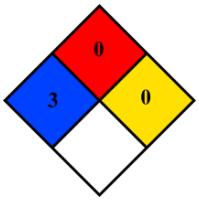
Risk Phrases:

- **R31** Contact with acids liberates toxic gas.
- **R34** Causes burns.
- **R36/38** Irritating to eyes and skin.
- **R50** Very toxic to aquatic organisms.

Safety Phrases:

- **S1/2** Keep locked up and out of reach of children.
- **S28** After contact with skin, wash immediately with plenty of water
- **S45** In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- **S50** Do not mix with acid
- **S61** Avoid release to the environment. Refer to special instructions/ Safety data sheets.

NFPA: 704



GHS:

16. Other Information

The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its accuracy and/or completeness. User should consult experts in their review of this SDS prior to use of the product.

1. The National Institute for Occupational Safety and Health (NIOSH): NIOSH Pocket Guide to Chemical Hazardshttp://www.cdc.gov/niosh/npg/npgdcas.html
2. United Nations Recommendations on the Transport of Dangerous Goods (UNRTDG)
3. European chemical Substances Information System (ECB): ESIS, Annex VI
http://ecb.jrc.ec.europa.eu/esis/
http://ecb.jrc.ec.europa.eu/classification-labelling/clp/ghs/search.php
4. International Programme on Chemical Safety (IPCS): Chemical Safety Information from Intergovernmental Organizations (INCHEM) http://www.inchem.org/
5. United Stated National Library of Medicine: Chem ID-plus Lite (ID PLUS)
http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM
6. New Jersey Department of Health (DOH)
http://web.doh.state.nj.us/rtkhsfs/qrsearch.aspx.
7. International Uniform Chemical Information Database (IUCLID)
http://ecb.jrc.ec.europa.eu/esis/index.php?PGM=dat
8. Hazardous Substances Data Bank (HSDB)
http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB
9. NTP Study Reports Abstract for TR-392-Chlorinated Water (CAS Nos. 7782-50-5 and 7681-52-9) National Toxicology Program, Department of Health and Human Services, 1992
http://ntp.niehs.nih.gov/
10. CRC Handbook of Chemistry and Physics 91st edition 2010-2011