

 al kout industrial projects الكوت للمشروعات الصناعية	AL KOUT INDUSTRIAL PROJECTS	Document No:	C-SM-XX-D-009
		Issue No:	1
	Rev no:	4	
	Safety Data Sheet SODIUM HYPOCHLORITE-12%	Date revision	10.10.2021
		Page number	Page 1 of 8


1.0 Chemical Identity		
1.1	Product Name	Sodium Hypochlorite (12 %)
	Synonyms	Bleach; Hypochlorous Acid, Sodium Salt; Soda Bleach; Sodium Oxychloride
	Formula	NaOCl
1.2	Recommended Use and Restrictions	
	Use of substance	For general purpose cleaning, sanitizing, bleaching and for controlling bacteria, algae and fungal slimes in pool and industrial waters.
1.3	Company Information	
		Name: Al Kout Industrial Projects , Kuwait Plant: Salt & Chlorine Plant, Shuaiba, Kuwait Company's Post Box No.: 10277, Shuaiba-65453, Kuwait Tel No.: 00-(965)-22283726 Intercom: 3726, 3725 Fax No.: 00-(965)- 22284043 Company's Emergency Phone No: 00-(965)-, 23261029, 97216020, 99794511
1.4	Emergency Telephone Number	00-(965)-, 23261029, 97216020
2.0 Hazards Identification		
2.1	Classification of the Substance or Mixture	
GHS US Classification		
	Met. Corr. 1 H290 Skin Corr. 1C H314 Eye Dam. 1 H318 STOT SE 3 H335	
2.2	Label Elements	
GHS US Labeling		
Hazard Pictograms (GHS – US)		
Single Word (GHS-US)		: Danger
Hazard Statements (GHS-US)		: H290 - May be corrosive to metals H314 - Causes severe skin burns and eye damage H335 - May cause respiratory irritation
Precautionary Statements (GHS – US)		: P234 - Keep only in original container P260 - Do not breathe dust or mist P264 - Wash hands, forearms, and face thoroughly after handling P280 - Wear protective gloves, protective clothing, eye protection, face protection
vomiting		: P271 - Use only outdoors or in a well-ventilated area P390 - Absorb spillage to prevent material damage P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
contaminated clothing. Rinse skin with water or shower		: P310 - Immediately call a POISON CENTER/doctor P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
comfortable for breathing		: P363 - Wash contaminated clothing before reuse P310 - Immediately call a POISON CENTER/doctor P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

 al kout industrial projects الكوت للمشروعات الصناعية	AL KOUT INDUSTRIAL PROJECTS	Document No:	C-SM-XX-D-009
		Issue No:	1
	Rev no:	4	
	Safety Data Sheet SODIUM HYPOCHLORITE-12%	Date revision	10.10.2021
		Page number	Page 2 of 8

P310 - Immediately call a POISON CENTER/doctor P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P310 - Immediately call a POISON CENTER/doctor P405 - Store locked up P403+P233 - Store in a well-ventilated place. Keep container tightly closed P406 - Store in a corrosion resistant container with a resistant inner liner P501 - Dispose of contents/container in accordance with local/regional/national/international regulation	
2.3	Other Hazards
No additional information available	
2.4	Unknown acute toxicity (GHS US)
Not Applicable	

3.0 Composition/ Information on ingredients		
3.1	Substances	
Not Applicable		
3.2	Mixtures	
	Finished product specification	Sodium Hypochlorite (12 %) NaOCl
	CAS Number	Chemical Name
	7681-52-9	Sodium Hypochlorite (as NaOCl)
	7732-185	Water
	%	GHS-US Classification
		Not classified
		Unst.Expl, H200 Ox. Sol. H272 Skin Corr. IB, H314 STOT SE 3, H335 Aquatic Acute 1, H400
	Chemical Analysis	
	PARAMETERS	Specification
	Appearance	Clear greenish yellow aqueous solution
	Ph	11.5---13.0
	Specific Gravity at 20 °C	1.220- 1.270
	Sodium Hypochlorite as NaOCl % wt	12.0---15.0
	Available Chlorine as Cl ₂ (gpl)	140---190
	Excess Alkali as NaOH (gpl)	7.0---12.0
	Excess Alkali as Na ₂ CO ₃ (gpl)	8.0---16.0
	Iron as Fe+3 ppm	≤ 1.0
	Copper as Cu+2 ppm	≤ 0.50
	Nickel as Ni+2 ppm	≤ 0.30
	Details of ingredients that could be released from the product in Excess of the PEL value	
	Warmed to > 40 o C ,or mixed with acids, toxic chlorine gas in excess of the PEL will be evolved.	

Note: Half Shelf life period at 20° C (Winter) : 10 Days
 Half Shelf life period at 40°C (Summer) : < 5 Days
 Filled containers should be kept under shelter

 al kout industrial projects الكوت للمشاريع الصناعية	AL KOUT INDUSTRIAL PROJECTS	Document No:	C-SM-XX-D-009
		Issue No:	1
	Rev no:	4	
	Safety Data Sheet SODIUM HYPOCHLORITE-12%	Date revision	10.10.2021
		Page number	Page 3 of 8

4.0 First Aid Measures

4.1. Description of first aid measures


Inhalation	May cause irritation to the respiratory tract, (nose and throat); symptoms may include coughing and sore throat Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately
Skin	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse
Eyes	Contact may cause severe irritation and damage, especially at higher concentration Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately
Ingestion	If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by in mouth to an unconscious person. Get medical attention immediately.
4.2. Most important symptoms and effects (acute and delayed)	
Symptoms/injuries after inhalation	May cause respiratory irritation. May cause burns.
Symptoms/injuries after skin contact	Causes severe skin burns. Symptoms may include redness, pain, blisters.
Symptoms/injuries after eye contact	Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.
Symptoms/injuries after ingestion	May be harmful if swallowed. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. May cause stomach distress, nausea or vomiting.
4.3. Immediate medical attention and special treatment, if necessary	
Other medical advice or treatment	Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

5.0 Fire Fighting Measures

5.1	Fire and Explosion hazards	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. This solution is not considered to be an explosion hazard
5.2	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
5.3	Special Information.	In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face-piece operated in the pressure demand or other positive pressure mode.
5.4	Protection during firefighting	Keep upwind of fire. Wear full fire-fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Cool closed containers exposed to fire with water spray.

6.0 Accidental Release Measures

6.1	Personal Precautions	Ventilate area of leak or spill. Wear appropriate personal protective equipment. A full face-piece 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
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 al kout industrial projects الكوت للمشاريع الصناعية	AL KOUT INDUSTRIAL PROJECTS	Document No:	C-SM-XX-D-009
		Issue No:	1
	Rev no:	4	
	Safety Data Sheet SODIUM HYPOCHLORITE-12%	Date revision	10.10.2021
		Page number	Page 4 of 8

		instances where the exposure levels are not known, use a full-face-piece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
6.2	Clean Up Methods	For large spills, evacuate the hazard area of unprotected personnel. Wear appropriate protective clothing. Dike and contain. Neutralize with sodium sulfite, bisulfite or thiosulfite. Remove with vacuum trucks or pump to storage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material; place in non-leaking containers for proper disposal. Flush area with water to remove trace residue; dispose of flush solutions as above. For small spills, take up with an absorbent material and place in non-leaking containers; seal tightly for proper disposal. This material is alkaline and may raise the pH of surface waters with low buffering capacity.
6.3	Reference to other sections	For further information refer to section 8: "Exposure controls/personal protection"

7.0 Handling and Storage

7.1. Precautions for safe handling

Precautions for safe handling	Do not get in eyes, on skin, or on clothing. Do not breathe dust, mist. Do not swallow. Use only outdoors or in a well-ventilated area. Avoid the formation of mists in the atmosphere. Never add water to this product. Always add corrosives to water. Never return unused material to original container. Handle and open container with care. When using do not eat, drink or smoke.
Hygiene measures	Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.
Additional hazards when processed	May be corrosive to metals.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	Comply with applicable regulations.
Storage conditions	Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool, and well-ventilated place. Keep only in the original container in a cool, well-ventilated place. Strong solutions (greater than 10% available chlorine) may slowly give off chlorine during storage, especially when warm (above 18°C). Vent caps may be required to prevent a build-up of pressure that could cause containers to burst.
Incompatible materials	Amines. Ammonium salts. Phenylacetone nitrile. Ammonia. Acids. Metals. Reducing agents. Ethyleneimine. Methanol. Formic acid. Sodium hydroxide.

8.0 Exposure Controls/Personal Protection

8.1. Control parameters

Sodium Hypochlorite Solution 12%

ACGIH	ACGIH TWA (ppm)	0.3 ppm (Cl ₂)
ACGIH	ACGIH TWA (mg/m ³)	1.5 mg/m ³ (Cl ₂)
ACGIH	ACGIH STEL (ppm)	1.0 ppm (Cl ₂)
ACGIH	ACGIH STEL (mg/m ³)	2.9 mg/m ³ (Cl ₂)


8.2. Appropriate engineering controls

Appropriate engineering controls	Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, etc.) below recommended exposure limits.
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8.3. Individual protection measures/Personal protective equipment



Hand protection	Neoprene or nitrile rubber gloves.
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 al kout industrial projects الكوت للمشروعات الصناعية	AL KOUT INDUSTRIAL PROJECTS	Document No:	C-SM-XX-D-009
		Issue No:	1
	Safety Data Sheet SODIUM HYPOCHLORITE-12%	Rev no:	4
		Date revision	10.10.2021
		Page number	Page 5 of 8

Eye protection	Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).
Skin and body protection	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Environmental exposure controls	Maintain levels below Community environmental protection thresholds.
Other information	Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

9.0 Physical and Chemical Properties

9.1	Appearance/ Colour	Colorless to pale yellow watery liquid
9.2	Odour	Pungent chlorine odor
9.3	Molecular Weight	75.45
9.4	Melting Point	-5°C to -25°C
9.5	Boiling Point	40°C -76°C (104-169°F)
9.6	Specific gravity	1.220-1.270 @ 20°C (Water=1)
9.7	Vapour Density (Air = 1)	2.61
9.8	Vapour Pressure @ 20°C	12-17 mm Hg
9.9	Solubility (water)	Very soluble
9.10	Vapour pressure	17.5 (Torr) at 20 ° C
9.11	Relative density	1.165 at 20° C

9.2. Other information


No additional information available

10.0 Stability and Reactivity

10.1	Reactivity	No dangerous reaction known under conditions of normal use.
10.2	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
10.3	Hazardous decomposition Products	Emits toxic fumes of chlorine when heated to decomposition. Sodium oxide at high temperatures
10.4	Conditions to avoid	Heat. Incompatible materials. Direct sunlight.
10.5	Incompatibilities	Ammonia (chloramine gas may evolve), amines, ammonium salts, aziridine, methanol, phenyl acetonitrile, cellulose, ethyleneimine, oxidizable metals, acid soaps, and bisulfates. Reacts with Hydrochloric Acid, liberating Chlorine gas.


11.0 Toxicological Information

11.1. Information on toxicological effects	
Acute toxicity (oral)	Not classified.
Acute toxicity (dermal)	Not classified.
Acute toxicity (inhalation)	Not classified.
Sodium Hypochlorite Solution 12%	

 al kout industrial projects الكوت للمشروعات الصناعية	AL KOUT INDUSTRIAL PROJECTS	Document No:	C-SM-XX-D-009
		Issue No:	1
	Rev no:	4	
	Safety Data Sheet	Date revision	10.10.2021
	SODIUM HYPOCHLORITE-12%	Page number	Page 6 of 8


LD50 oral rat	> 2000 mg/kg (Calculated acute toxicity estimate)
LD50 dermal rabbit	> 2000 mg/kg (Calculated acute toxicity estimate)
LC50 inhalation rat	No data available
Sodium hypochlorite (7681-52-9)	
LD50 oral rat	8200 mg/kg
LD50 dermal rabbit	> 10000 mg/kg
Skin corrosion/irritation Serious eye damage/irritation	Causes severe skin burns. Causes serious eye damage.
Respiratory or skin sensitization	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.
Sodium hypochlorite (7681-52-9)	
IARC group	3 - Not classifiable
Reproductive toxicity	Not classified.
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	Not classified.
Aspiration hazard	Not classified.
Symptoms/injuries after inhalation	May cause respiratory irritation. May cause burns.
Symptoms/injuries after skin contact	Causes severe skin burns. Symptoms may include redness, pain, blisters.
Symptoms/injuries after eye contact	Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.
Symptoms/injuries after ingestion	May be harmful if swallowed. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. May cause stomach distress, nausea or vomiting.

12.0 Ecological Information	
12.1. Toxicity	
Ecology - general	May cause long-term adverse effects in the aquatic environment.
Sodium hypochlorite (7681-52-9)	
LC50 fish 1	0.06 - 0.11 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 fish 2	4.5 - 7.6 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 1	0.033 - 0.044 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
12.2. Persistence and degradability	
Sodium Hypochlorite Solution 12%	
Persistence and degradability	Not established.
12.3. Bioaccumulative potential	

 al kout industrial projects الكوت للمشروعات الصناعية	AL KOUT INDUSTRIAL PROJECTS	Document No:	C-SM-XX-D-009
		Issue No:	1
	Rev no:	4	
	Safety Data Sheet SODIUM HYPOCHLORITE-12%	Date revision	10.10.2021
		Page number	Page 7 of 8

Sodium Hypochlorite Solution 12%	
Bioaccumulative potential	Not established.
12.4. Mobility in soil	
No additional information available	
12.5. Other adverse effects	
No additional information available	

13.0 Disposal Considerations	
13.1	Dilute with water and flush to sewer if local ordinances allow, otherwise, whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements

14.0 Transport Information		
14.1	UN No	1791
14.2	IMCO Class	8 
14.3	Packaging	III
14.4	ADR/RID classification code	C9
14.5	Proper Shipping Name	HYPOCHLORITE SOLUTION

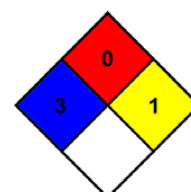
15.0 Regulatory Information	
15.1	Hazardous by definition of Hazard Communication standard (29 CFR 1910: 1200) OSHA


16.0 Other Information		
16.1	Packing	Jerry Cans, IBC's, ISO Tankers & Road Tankers
16.2	Disclaimer	The Information contained in this material data sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for an application or results to be obtained from them. It is upto the manufacturer/seller to ensure that the information contained in the material safety data sheet is relevant to the product manufactured / handled or sold by him as the case may be. The AIPC makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose.

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.



	AL KOUT INDUSTRIAL PROJECTS	Document No:	C-SM-XX-D-009
		Issue No:	1
		Rev no:	4
	Safety Data Sheet SODIUM HYPOCHLORITE-12%	Date revision	10.10.2021
		Page number	Page 8 of 8

Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Personal protection : H
H - Splash goggles, Gloves, Synthetic apron, Vapor respirator

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.