



Office: 021 577 1544
Cell: 079 958 2446
Fax: 086 614 7936

Email: Info@cl2cape.co.za
VAT No: 4220259859
Reg. No: 2011/117365/07

MATERIAL SAFETY DATA SHEET

SODIUM HYPOCHLORITE NaOCl

1. PRODUCT IDENTIFICATION

TRADE NAME: Sodium Hypochlorite
CHEMICAL FAMILY: Inorganic Hypochlorite
CHEMICAL NAME: Sodium Hypochlorite
SYNONYMS: Javel water, Household bleach.
MOLECULAR FORMULA: NaOCl
CHEMICAL ABSTRACTS No: 7681-52-9
EINECS No: 231-668-3
NIOSH No: NH3486300
HAZCHEM CODE: 2R
UN No: 1791

2. COMPOSITION

HAZARDOUS COMPONENTS: 15 % m/v Available Chlorine.
1.5 – 2.95 % Sodium Hydroxide

EEC CLASSIFICATION: [C; R31] Corrosive; Contact with acids liberates toxic gas

RISK PHRASES: **R:31- 34** Contact with acids liberates toxic gas. Causes burns.
R:36 Irritating to eyes
R:38 Irritating to skin

SAFETY PHRASES: **S:(1/2-) 28-45-50** Keep locked up and out of the reach of children.
After contact with skin, wash immediately with plenty of water. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). Do not mix with acids

3. HAZARD IDENTIFICATION

Hazard rating (NFPA Classification): Health Hazard: 3
Fire Hazard: 0
Reactivity Hazard: 0
Specific hazards: OX



CHEMICAL HAZARDOUS

Chlorine gas is released on contact with acids; oxygen is released by contact with metals. Contact with ammonia and urea produce nitrogen gas and chloramines. Contact with oxidizable material produces heat, which may generate chlorine gas.

MAIN HAZARDS

Highly corrosive material which causes severe irritation of the mucous membranes of the eyes and may result in permanent damage if not treated promptly.

A severe skin irritant and repeated exposure can lead to sensitization.

Inhalation can result in irritation of the respiratory tract, severe lung damage, oedema and finally death.

If ingested may cause severe irritation of the digestive tract, irritation, pain, inflammation, perforation, vomiting, shock, confusion, delirium, coma and death.

HEALTH EFFECTS - EYES

Highly corrosive solution. Causes severe irritation of the mucous membranes of the eyes. May cause permanent damage if not treated promptly.

HEALTH EFFECTS - SKIN

Highly corrosive solution. Causes severe skin irritation with blistering and ulceration. May cause temporary or permanent damage if not treated promptly.

HEALTH EFFECTS - INGESTION

Highly corrosive solution. May cause severe irritation of the mouth, throat and digestive tract. May cause permanent damage if not treated promptly. May lead to shock, abdominal cramps, nausea, vomiting, diarrhoea convulsions, coma and death.

HEALTH EFFECTS - INHALATION

May cause irritation of the nose and throat, coughing, difficulty breathing; may cause pulmonary oedema.

4. FIRST AID MEASURES

PRODUCT IN EYE

Immediately flush the contaminated eye(s) with gently flowing water for at least 20-30 minutes, by the clock, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. If irritation persists, repeat flushing. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting. Quickly transport victim to an emergency medical facility.

PRODUCT ON SKIN

As quickly as possible, thoroughly flush contaminated area with running water or shower for at least 15 minutes. If irritation persists, repeat flushing. Under running water, remove contaminated clothing, shoes, and leather goods. All contaminated clothing must be laundered before reuse.

Obtain medical attention immediately.

PRODUCT INGESTED

Have victim rinse mouth thoroughly with water. Do not induce vomiting. If conscious give one cup (250-300 ml) of water to drink immediately. Give repeated drinks of water at a rate of one cup every 10 minutes. If spontaneous



vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. Never give anything by mouth to an unconscious person.

Check breathing and pulse. If breathing has stopped trained personnel should give artificial respiration. If heart has stopped give cardiopulmonary resuscitation (CPR).

Immediately transport victim to an emergency medical facility.

PRODUCT INHALED

Can release corrosive chlorine gas. Take proper precautions to ensure your own safety before attempting rescue; (e.g. wear appropriate protective equipment). Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure. Avoid mouth-to-mouth contact by using mouth guards or shields. Immediately transport victim to an emergency medical facility.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Material is non-flammable but is decomposed by heat and light causing a pressure build-up in containers which could result in an explosion.

Small fires - use dry chemical or CO₂.

Large fires - Water spray, fog or foam. Do not get water inside containers, move containers from fire area if without risk. Cool containers with water from maximum distance until well after the fire is out.

Use appropriate media to extinguish surrounding fire.

SPECIAL HAZARDS

Sodium hypochlorite is non-flammable, but is decomposed by heat, light and acidic conditions. Pressure build-up in containers could result in an explosion when heated or on contact with acidic fumes. Vigorous reaction with oxidizable organic materials may result in a fire.

PROTECTIVE CLOTHING

Protect firemen against corrosive fumes and liquids. Full protection equipment, including a self-contained breathing apparatus, should be worn.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Extinguish or remove all ignition sources and ventilate the area.

Wear adequate personal protective equipment: -

Wear tight fitting safety goggles. Where there is any possibility of splashing or spraying of this chemical wear a face shield/chemical splash goggle combination, rubber apron, rubber boots and protective coveralls made of rubber, PVC or some other impervious material. Use a NIOSH approved canister type respirators suitable for chlorine. Full respiratory protection (including self-contained breathing apparatus) should be readily available in case of an emergency.

ENVIRONMENTAL PRECAUTIONS

Harmful to aquatic life in low concentrations.

CLEAN-UP METHODS



Small Spills

Contain the spill. Neutralize with sodium sulphite or sodium bisulphite. Mop up or soak up with absorbent clay for disposal. Wash spill area with large volumes of water.

Dispose of residue in accordance with Local and State Regulations.

Large Spills

Do not touch spilled material. Do not allow the spilled product to enter drains, sewers or surface waters. Contain spill with earth, sand, ash or other inert absorbent material for recovery and disposal. Never use combustibles such as sawdust to absorb and contain a leak or spill. For recovery, pump into polyethylene containers.

Place contaminated product and materials used in cleaning up spills or leaks in polythene containers for disposal at an approved site. Consult appropriate state and local regulatory agencies to ascertain proper disposal procedures. Flush spill site with a large volume of water and allow to drain into a waste treatment system.

7. HANDLING AND STORAGE

SUITABLE MATERIALS

Store in rubber lined, suitable GFRP or suitable plastic tanks.

UNSUITABLE MATERIALS

Metals such as iron, nickel, copper, tin and manganese.

HANDLING/STORAGE PRECAUTIONS

Store in a closed container in a cool, dry well-ventilated area away from direct sunlight, and oxidizable material. Vented containers must be used. Keep storage temperatures below 29°C. Long storage is impossible due to the limited shelf life of sodium hypochlorite.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE STANDARDS

HSE	Not available
MAK	Not available
ACGIH	Not available

ENGINEERING CONTROL MEASURES

Local exhaust ventilation is preferred to maintain concentrations in air below applicable exposure limits. Special ventilation is required if sodium hypochlorite is exposed to decomposition conditions such as spills, or acidic conditions.

Safety showers and eye wash fountains should be installed in storage and handling areas.

PERSONAL PROTECTION – RESPIRATORY

Use NIOSH approved canister type respirators suitable for chlorine.

Full respiratory protection (including self-contained breathing apparatus) should be readily available in case of an emergency.

PERSONAL PROTECTION - HAND

Wear rubber or other impermeable gloves



PERSONAL PROTECTION - EYE

Wear tight fitting chemical goggles. Where there is any possibility of splashing or spraying of this chemical wear a face shield/chemical splash goggle combination.

PERSONAL PROTECTION - SKIN

Wear rubber apron, rubber boots and protective coveralls made of rubber, PVC or some other impervious material.

OTHER PROTECTION

A safety shower and eye wash facility should be nearby and ready for use.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear, light yellow liquid.
ODOUR:	Strong chlorine odour
pH:	~12
BOILING POINT/RANGE:	~ 110°C
FREEZING POINT:	-25°C
FLASH POINT:	Not applicable
FLAMMABILITY:	Not flammable
AUTOFLAMMABILITY:	Not applicable
EXPLOSIVE PROPERTIES	
OXIDISING PROPERTIES:	Strong oxidising agent
VAPOUR PRESSURE:	17.5 mm Hg at 20°C.
DENSITY:	min 1.20 g/cm ³ at 20°C
SOLUBILITY – WATER:	100 % m/m
SOLUBILITY - SOLVENT	

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID

Decomposes slowly. Do not expose to temperatures above 29°C, sunlight or metals.

INCOMPATIBLE MATERIALS

Acids, oxidizable materials, ammonia, urea, other nitrogenous materials, and metals such as nickel, copper, tin, manganese and iron.

HAZARDOUS DECOMPOSITION PRODUCTS

Chlorine gas is released by contact with acids; oxygen is released by contact with metals. Contact with ammonia and urea produce nitrogen gas and chloramines. Contact with oxidizable material produces heat which may generate chlorine gas.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

No human oral toxicity data available.

AIHA recommends a time weighted average of 2 mg/m³ for 15 minute exposure to sodium hypochlorite, under some circumstances, the exposure limits for chlorine may be applicable.

Animal Toxicity Data

LD50: (oral, rat) - 8910 mg/kg,



LC50: (1 hour, rat) >10500 mg/m³

SKIN AND EYE CONTACT

Highly corrosive solution.

Causes severe irritation of the mucous membranes of the eyes. May cause permanent damage if not treated promptly

Causes severe skin irritation with blistering and ulceration. May cause temporary or permanent damage if not treated promptly.

SUB-CHRONIC TOXICITY

Dermatitis, itchy eczema may result from frequent exposure. If overexposed to the solution, there will be constant irritation of the eyes, nose, and throat.

CARCINOGENICITY

Not classified as carcinogenic by IARC and ACGIH.

MUTAGENICITY

No information available.

REPRODUCTIVE TOXICITY

No data available.

TERATOGENICITY

No information available.

12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY – FISH:	Harmful to fish at low concentrations
AQUATIC TOXICITY – DAPHNIA:	No data available
AQUATIC TOXICITY – ALGAE:	Harmful to algae at low concentrations
BIODEGRADABILITY:	Is not biodegradable
BIO-ACCUMULATION:	Does not bio-accumulate
MOBILITY:	No data available

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Dispose according to municipal, provincial and local regulations.
Care should be taken not to mix waste with incompatible material.

DISPOSAL OF PACKAGING

Empty containers can contain harmful residues and are subject to proper waste disposal.
Always obey hazard warnings.

14. TRANSPORT INFORMATION

UN No.	1791
SUBSTANCE IDENTITY No.	1791
ADR/RID CLASS	8



ADR/RID ITEM No.	Not available
ADR/RID HAZARD IDENTITY No.	85
IMDG - SHIPPING NAME	Sodium Hypochlorite Solution
IMDG - CLASS	Class 8 Corrosive (9.2)
IMDG - PACKAGING GROUP	III
IMDG - MARINE POLLUTANT	Hazardous to the environment
IMDG - EMS No.	Not available
IMDG - MFAG TABLE No.	Not available
IATA - SHIPPING NAME	Sodium Hypochlorite Solution
IATA - CLASS	8
IATA - SUBSIDIARY RISK(S)	Corrosive, Packaging Group III
ADNR - CLASS	Not available
UK - DESCRIPTION	Not available
UK - EMERGENCY ACTION CODE	Not available
UK - CLASSIFICATION	Not available
TREMCARD No.	

15. REGULATORY INFORMATION

EEC CLASSIFICATION:	[C;R31] Corrosive; Contact with acids liberates toxic gas
RISK PHRASES	R:31- 34 Contact with acids liberates toxic gas. Causes burns. R:36 Irritating to eyes R:38 Irritating to skin
SAFETY PHRASES	S:(1/2-) 28-45-50 Keep locked up and out of the reach of children. After contact with skin, wash immediately with plenty of water. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). Do not mix with acids
NATIONAL LEGISLATION	Hazardous Substances Act 15 of 1973 and Regulations, Occupational Health and Safety Act 85 of 1993,