

SODIUM HYPOCHLORITE 12.5%

Cromag Pty Ltd

Safety Data Sheet according to WHS and ADG requirements

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING**Product Identifier**

Product name	SODIUM HYPOCHLORITE, Hypo-Chlor, Sigma Liquid Chlorine
Chemical Name	Sodium Hypochlorite
Synonyms	Liquid Chlorine, Hypo-Chlor, Bleach
Proper shipping name	HYPOCHLORITE SOLUTION
Chemical formula	NaOCl, NaClO, ClNaO
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant Identified Uses	Bleaching Agent, Disinfectant, Oxidising Agent
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Details of the supplier of the safety data sheet

Company Name	Cromag Pty Ltd – Trading as Sigma Telford Group
Address	7 Valentine Street Kewdale WA 6105 Australia
Telephone	+61 8 9345 2233
Website	www.sigmatelford.com.au
Email	info@sigmatelford.com.au

Emergency telephone number

Association/Organisation	Not Available
Emergency telephone numbers	DFES: 000 (HAZMAT EMERGENCIES)
Other Emergency telephone numbers	POISONS: 13 11 26

SECTION 2 HAZARDS IDENTIFICATION**Classification of the substance or mixture****HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.**

Poisons Schedule	S5
Classification	Metal Corrosion Category 1, Skin Corrosion/Irritation Category 1B, Serious Eye Damage Category 1, Acute Aquatic Hazard Category 1

Label Elements

GHS label elements	
SIGNAL WORD	DANGER

Hazard statement(s)

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
AUH031	Contact with acid liberates toxic gas

Precautionary statement(s) Prevention

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P234	Keep only in original container.
P264	Wash hands thoroughly after handling.
P273	Avoid release to the environment.

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
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 or doctor/physician.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P391	Collect spillage.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Precautionary statement(s) Storage

P405	Store locked up.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS
Substances

CAS No	% [weight]	Name
7681-52-9	10-30%	Sodium hypochlorite
1310-73-2	< 1%	Sodium hydroxide
7732-18-5	> 60%	Water

SECTION 4 FIRST AID MEASURES
Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: <ul style="list-style-type: none"> ➤ Immediately hold eyelids apart and flush the eye continuously with running water. ➤ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ➤ Continue flushing until advised to stop by the Poisons Information Centre or for at least 15 minutes. ➤ Transport to hospital or doctor without delay.
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	<ul style="list-style-type: none"> ➤ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ➤ Immediately flush body and clothes with large amounts of water, using safety shower if available. ➤ Quickly remove all contaminated clothing, including footwear. ➤ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ➤ Transport to hospital, or doctor.
Inhalation	<ul style="list-style-type: none"> ➤ If fumes or combustion products are inhaled remove from contaminated area. ➤ Lay patient down. Keep warm and rested. ➤ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ➤ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ➤ Transport to hospital, or doctor, without delay. ➤ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. ➤ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.
Ingestion	<ul style="list-style-type: none"> ➤ For advice, contact a Poisons Information Centre or a doctor at once. ➤ Urgent hospital treatment is likely to be needed. ➤ If swallowed do NOT induce vomiting. ➤ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ➤ Observe the patient carefully. ➤ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ➤ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ➤ Transport to hospital or doctor without delay.

Indication of any immediate medical attention and special treatment needed

Excellent warning properties force rapid escape of personnel from chlorine vapour thus most inhalations are mild to moderate. If escape is not possible, exposure to high concentrations for a very short time can result in dyspnea, haemophysis and cyanosis with later complications being tracheobroncho pneumonitis and pulmonary oedema. Oxygen, intermittent positive pressure breathing apparatus and aerosolised bronchodilators are of therapeutic value where chlorine inhalation has been light to moderate. Severe inhalation should result in hospitalisation and treatment for a respiratory emergency.

Any chlorine inhalation in an individual with compromised pulmonary function (COPD) should be regarded as a severe inhalation and a respiratory emergency. [CCINFO, Dow 1988]

Effects from exposure to chlorine gas include pulmonary oedema which may be delayed. Observation in hospital for 48 hours is recommended

Diagnosed asthmatics and those people suffering from certain types of chronic bronchitis should receive medical approval before being employed in occupations involving chlorine exposure.

If burn is present, treat as any thermal burn, after decontamination.

For corrosives:

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- Where eyes have been exposed, flush immediately with water and continue to irrigate with normal saline during transport to hospital.
- DO NOT use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- Skin burns should be covered with dry, sterile bandages, following decontamination.
- DO NOT attempt neutralisation as exothermic reaction may occur.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

- Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime.
 - Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
 - Consider endoscopy to evaluate oral injury.
 - Consult a toxicologist as necessary.
- BRONSTEIN, A.C. and CURRANCE, P.L. EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

SECTION 5 FIREFIGHTING MEASURES
Extinguishing Media

- Water spray or fog
- Foam
- Dry chemical powder
- Carbon dioxide

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ➤ Alert Fire Brigade and tell them location and nature of hazard. ➤ Wear full body protective clothing with breathing apparatus. ➤ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ➤ Non combustible. ➤ Not considered a significant fire risk, however containers may burn. <p>Decomposition may produce toxic fumes of: May emit corrosive fumes.</p>
HAZCHEM	2X

SECTION 6 ACCIDENTAL RELEASE MEASURES
Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ➤ Clean up all spills immediately. ➤ Avoid contact with skin and eyes. ➤ Control personal contact with the substance, by using protective equipment. ➤ Use dry clean up procedures and avoid generating dust. ➤ Place in a suitable, labeled container for waste disposal. ➤ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. ➤ Neutralize with sodium metabisulphite or sodium thiosulphate.
Major Spills	<ul style="list-style-type: none"> ➤ Clear area of personnel and move upwind. ➤ Alert Fire Brigade and tell them location and nature of hazard. ➤ Wear full body protective clothing with breathing apparatus. ➤ Prevent, by any means available, spillage from entering drains or water course.

	<ul style="list-style-type: none"> ➤ Consider evacuation (or protect in place). ➤ Contain spill with sand, earth or vermiculite. ➤ Collect recoverable product into labelled containers for recycling. ➤ Neutralize/decontaminate residue (see Section 13 for specific agent). ➤ Collect solid residues and seal in labelled drums for disposal. ➤ Wash area and prevent runoff into drains. ➤ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ➤ If contamination of drains or waterways occurs, advise emergency services.
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Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ➤ Avoid all personal contact, including inhalation. ➤ Wear protective clothing when risk of exposure occurs. ➤ <u>When handling DO NOT eat, drink or smoke.</u> ➤ Keep containers securely sealed when not in use. ➤ Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice. ➤ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained
Other Information	<ul style="list-style-type: none"> ➤ Store in an upright position. ➤ Store in original containers. ➤ Store in a cool, dry, well-ventilated area. ➤ Store away from incompatible materials and foodstuff containers. ➤ Protect containers against physical damage and check regularly for leaks. ➤ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable Container	<p>Liquid inorganic hypochlorite shall not be transported in unlined metal drums. Inner packaging shall be fitted with vented closures and plastics drums and carboys shall have vented closures or be performance tested to a minimum of 250 kPa. All non-vented packaging shall be filled so that the ullage is at least 10% at 21-25 deg C. Vented packaging may be filled to an ullage not less than 5% at 21-25 deg C, provided that this ullage does not result in leakage from, nor distortion of, the packaging.</p> <ul style="list-style-type: none"> ➤ Lined metal can, lined metal pail/ can. ➤ Plastic pail. ➤ Polyliner ➤ Drum ➤ Packing as recommended by manufacturer. ➤ Check all containers are clearly labelled and free from leaks.
Storage Incompatibility	<ul style="list-style-type: none"> ➤ The state of subdivision may affect the results. ➤ Contact with acids produces toxic fumes of chlorine. ➤ Bottles of strong sodium hypochlorite solution (10-14% available chlorine) burst in storage due to failure of the cap designed to vent oxygen slowly during storage. A hot summer may have exacerbated the situation. Vent caps should be checked regularly (using full personal protection) and hypochlorite should not be stored in direct sunlight or at temperatures exceeding 18 deg. C ➤ Inorganic hypochlorite reacts violently with many incompatible materials including fuels, oils, wood, paper, etc. which become readily ignitable. Avoid contact with peroxides glycerine, lubricating oil, combustibles, amines, solvents, charcoal, metal oxides and salts, copper, mercaptan, sulfur, organic sulfides, turpentine. <p>Contact of hypochlorite with nitro methane, alcohols, glycerol, phenol or diethylene glycol monomethyl ether results in ignition.</p> <ul style="list-style-type: none"> ➤ Metal oxides catalyse the oxygen decomposition of the hypochlorite. ➤ Explosions following reaction with methanol are attributed to formation of methyl hypochlorite. ➤ When finely divided materials such as sugar, wood dust and paper are contaminated with hypochlorite solution they burn more readily when dry. ➤ Incompatible with sanitising bowl cleaners containing bisulphite.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material Name	TWA	STEL	Peak	Notes
Australia Exposure Standards	Sodium hydroxide	Sodium hydroxide	Not Available	2 mg/m3	Not Available	Not Available


EMERGENCY LIMITS

Ingredient	Material Name	TEEL-1	TEEL-2	TEEL-3
sodium hypochlorite	Sodium hypochlorite pentahydrate	13 mg/m3	140 mg/m3	290 mg/m3
sodium hypochlorite	Sodium hypochlorite	2 mg/m3	54 mg/m3	630 mg/m3
sodium hydroxide	Sodium hydroxide	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
sodium hypochlorite	Not Available	Not Available
sodium hydroxide	250 mg/m3	10 mg/m3

MATERIAL DATA

Exposure controls

Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.</p> <p>An approved self contained breathing apparatus (SCBA) may be required in some situations.</p> <p>Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> <p>CARE: Use of a quantity of this material in confined space or poorly ventilated area, where rapid build up of concentrated atmosphere may occur, could require increased ventilation and/or protective gear</p>
Personal Protection	
Eye and Face protection	<ul style="list-style-type: none"> ➤ Safety glasses with imperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure. ➤ Chemical goggle. whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. ➤ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes. ➤ Alternatively a gas mask may replace splash goggles and face shields.
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ➤ Elbow length PVC gloves ➤ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ➤ Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Body protection	See Other protection below

Other protection	<ul style="list-style-type: none"> ➤ Overalls. ➤ PVC Apron. ➤ PVC protective suit may be required if exposure severe. ➤ Eyewash unit. ➤ Ensure there is ready access to a safety shower.
Thermal hazards	Not Available

Respiratory protection

Type B-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Clear yellow coloured alkaline liquid with chlorine odour; miscible with water.		
Physical state	Liquid	Flash point (°C)	Not Applicable
Odour	Chlorine odour	Evaporation rate	Not Available
Odour threshold	Not Available	Flammability	Not Applicable
Relative density (water=1)	1.16	Upper Explosive Limit (%)	Not Applicable
Colour	Pale Yellow - Green - Greenish Yellow	Lower Explosive Limit (%)	Not Applicable
pH (as supplied)	>11.5	Vapour pressure (kPa)	Not Available
Melting point/Freezing point (°C)	-25	Solubility in water (g/L)	Miscible
Initial boiling point and boiling range (°C)	>100	Vapour density (Air = 1)	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ➤ Unstable in the presence of incompatible materials. ➤ Product is considered stable. ➤ Hazardous polymerisation will not occur. ➤ Sodium hypochlorite solutions slowly decompose when exposed to heat, light.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION**Information on toxicological effects**

Inhaled	Chlorine vapour is extremely irritating to the upper respiratory tract and lungs Symptoms of exposure to chlorine include coughing, choking, breathing difficulty, chest pain, headache, vomiting and pulmonary oedema. Inhalation may cause lung congestion, bronchitis and loss of consciousness. Effects may be delayed. Delayed effects of exposure to chlorine vapour can include shortness of breath, violent headaches, pulmonary oedema and pneumonia.
Ingestion	The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion. Accidental ingestion of the material may be damaging to the health of the individual. Ingestion of hypochlorite may cause burning in the mouth and throat, abdominal cramps, nausea, vomiting, diarrhoea, pain and inflammation of the mouth and stomach, fall of blood pressure, shock, confusion, and delirium
Skin Contact	The material can produce severe chemical burns following direct contact with the skin. Skin contact is not thought to have harmful health effects (as classified under EC Directives); The material may still produce health damage following entry through wounds, lesions or abrasions.
Eye	The material can produce severe chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation. Hypochlorite in pool water at concentrations of 1 ppm chlorine or less is non irritating to eyes if the pH is higher than 7.2 (slightly alkaline). At lower pH, a sensation of stinging, smarting of eyes with transient reddening may occur but generally no injury. Eye contact with a 5% hypochlorite solution may produce a temporary burning discomfort and slight irritation of the corneal epithelium with no injury
Chronic	Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Reduced respiratory capacity may result from chronic low level exposure to chlorine gas. Chronic poisoning may result in coughing, severe chest pains, sore throat and haemoptysis (bloody sputum). Moderate to severe exposures over 3 years produced decreased lung capacity in a number of workers.

Product Name	TOXICITY	IRRITATION
Sodium hypochlorite	Dermal (rabbit) LD50: >10000 mg/kg ^[1]	Eye (rabbit): 10 mg - moderate
	Oral (rat) LD50: >237 mg/kg ^[1]	Eye (rabbit): 100 mg - moderate
		Skin (rabbit): 500 mg/24h-moderate
Sodium hydroxide	Oral (rabbit) LD50: 325 mg/kg ^[1]	Eye (rabbit): 0.05 mg/24h SEVERE
		Eye (rabbit):1 mg/24h SEVERE
		Eye (rabbit):1 mg/30s rinsed-SEVERE
		Skin (rabbit): 500 mg/24h SEVERE
Water	Oral (rat) LD50: >90000 mg/kg ^[2]	Not Available

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Sodium Hypochlorite	Evidence of carcinogenicity may be inadequate or limited in animal testing. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. In biological systems, characterised by pH values in the range of 6-8, the most abundant active chemical species is (hypochlorous acid) HOCl, in equilibrium with hypochlorite anion (ClO ⁻). Such available chlorine is readily absorbed via the oral route and distributed into plasma, bone marrow, testis, skin, kidney and lung. HOCl is not enzymatically metabolised.
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Sodium hydroxide	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (non allergic).
Sodium hypochlorite & Sodium hydroxide	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.

Acute Toxicity	⊘	Carcinogenicity	⊘
Skin Irritation/Corrosion	✓	Reproductivity	⊘
Serious Eye Damage/Irritation	✓	STOT – single exposure	⊘
Respiratory or Skin sensitisation	⊘	STOT – repeated exposure	⊘
Mutagenicity	⊘	Aspiration Hazard	⊘

Legend:
 ✗ – Data available but does not fill the criteria for classification
 ✓ – Data required to make classification available
 ⊘ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
Sodium hypochlorite	LC50	96	Fish	0.032 mg/L	4
Sodium hypochlorite	EC50	48	Crustacean	0.026 mg/L	2
Sodium hypochlorite	EC50	72	Algae or other aquatic plants	0.0183 mg/L	2
Sodium hypochlorite	EC50	0.08	Crustacean	0.002 mg/L	4
Sodium hypochlorite	NOEC	72	Algae or other aquatic plants	0.0054 mg/L	2
Sodium hydroxide	LC50	96	Fish	4.16158 mg/L	3
Sodium hydroxide	EC50	96	Algae or other aquatic plants	1034.10043 mg/L	3
Sodium hydroxide	EC50	384	Crustacean	27901.643 mg/L	3
Sodium hydroxide	NOEC	96	Fish	56 mg/L	4
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Sodium hydroxide	LOW	LOW
Water	LOW	LOW

Bio accumulative potential

Ingredient	Bioaccumulation
Sodium hydroxide	LOW (Log KOW= -3.8796)
Water	LOW (Log KOW= -1.38)



Mobility in Soil

Ingredient	Mobility
Sodium hydroxide	LOW (KOC=14.3)
Water	LOW (KOC=14.3)

SECTION 13 DISPOSAL CONSIDERATIONS**Waste treatment methods**

Product/Packaging disposal	<ul style="list-style-type: none"> ➤ Containers may still present a chemical hazard/ danger when empty. ➤ Return to supplier for reuse/ recycling if possible. ➤ DO NOT allow wash water from cleaning or process equipment to enter drains. ➤ In all cases disposal to sewer may be subject to local laws and regulations. ➤ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ➤ Treat and neutralise at an approved treatment plant. Treatment should involve: Mixing or slurring in water; Neutralisation, burial in a land-fill licenced to accept chemical or Incineration in a licenced apparatus. ➤ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
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SECTION 14 TRANSPORT INFORMATION**Labels Required**

	
Marine Pollutant	
HAZCHEM	2X

Land transport (ADG)

UN Number	1791	
UN proper shipping name	HYPOCHLORITE SOLUTION	
Transport Hazard class(es)	Class	8
	Sub Risk	Not Applicable
Packing group	III	
Environmental Hazard	Not Applicable	
Special precautions for user	Special provisions	223
	Limited quantity	5 L

Air transport (ICAO-IATA / DGR)

UN Number	1791	
UN proper shipping name	HYPOCHLORITE SOLUTION	
Transport Hazard class(es)	ICAO/IATA Class	8
	ICAO/IATA Sub Risk	Not Applicable
Packing group	III	
Environmental Hazard	Not Applicable	
Special precautions for user	Special provisions	A3
	Cargo Only Packing Instructions	Not Available
	Cargo Only Maximum Qty/Pack	Not Available
	Passenger and Cargo Packing Instructions	852
	Passenger and Cargo Maximum Qty/Pack	5 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y841
	Passenger and Cargo Limited Maximum Qty / Pack	1 L

Sea transport (IMDG-Code / GGVSee)

UN Number	1791	
UN proper shipping name	HYPOCHLORITE SOLUTION	
Transport Hazard class(es)	IMDG Class	8
	IMDG Sub Risk	Not Applicable
Packing group	III	
Environmental Hazard	Marine Pollutant	
Special precautions for user	EMS, Fire	F-A
	EMS, Spillage	S-B

Transport in bulk according to Annex II of MARPOL and the IBC code

Source	Product Name	Pollution Category	Ship Type
IMO MARPOL (Annex II) – List of Noxious Liquid Substances Carried in Bulk	Sodium hypochlorite solution (15% or less)	Y	2

SECTION 15 REGULATORY INFORMATION**Safety, health and environmental regulations / legislation specific for the substance or mixture****SODIUM HYPOCHLORITE (7681-52-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Hazardous Substances Information System - Consolidated List
Australia Inventory of Chemical Substances (AICS)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monograph

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (sodium hypochlorite)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION**Ingredients with multiple CAS numbers**

Name	CAS No
Sodium hypochlorite	7681-52-9, 10022-70-5
Sodium hydroxide	1310-73-2, 12200-64-5

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

Name	CAS No		
PC–TWA	Permissible Concentration-Time Weighted Average	PC–STEL	Permissible Concentration-Short Term Exposure Limit
IARC	International Agency for Research on Cancer	ACGIH	American Conference of Governmental Industrial Hygienists
STEL	Short Term Exposure Limit	TEEL	Temporary Emergency Exposure Limit
IDLH	Immediately Dangerous to Life or Health Concentrations	OSF	Odour Safety Factor
NOAEL	No Observed Adverse Effect Level	LOAEL	Lowest Observed Adverse Effect Level
TLV	Threshold Limit Value	LOD	Limit Of Detection
OTV	Odour Threshold Value	BCF	BioConcentration Factors
BEI	Biological Exposure Index		

END OF SDS