Safety Data Sheet
HY-CLOR LIQUID CHLORINE

REVIEW DATE: 3 March 2024
BASED ON: Australian SDS reviewed 3 March 2024
PRINT DATE: 10-May-24

This SDS has been amended to comply with EPA NZ SDS Notice 2017 (as amended) Section Part B Clause 9.

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name:	**HY-CLOR LIQUID CHLORINE**
Chemical Name:	Sodium Hypochlorite (12.5%)
Synonyms:	
Product Code:	HYCLIQCHL125, HYCLIQCHL05X4, HYCLIQCHL125, HYCLIQCHL05X4
Recommended Use of the Chemical and Restrictions on Use:	Swimming Pool disinfectant and Sanitiser
Supplier:	Hy-Clor Australia Pty Ltd
Street Address:	Suite A, Floor 8 Harbourview Building, 152, Quay Street, Auckland Central, Auckland 1010, NZ.
Telephone Number:	+6499732477 8.30 – 4.30 pm Monday to Friday
After Hours Contact:	0404 859 515 (Aus)
Email Contact:	help@hyclor.com.au
Emergency Telephone:	**0800764766** New Zealand National Poisons Centre: (24 hours) **111** (Transport, fire, ambulance only)

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information"

2. HAZARDS IDENTIFICATION

Classified as hazardous according to the criteria of the GHS as adopted in Australia. A Dangerous Good (UN 1791) Class 8 according to ADG 7.8. This product is classified as a hazardous substance according to its GHS classification. This product is also an Environmentally Hazardous Substance, Liquid - meeting the description of UN 3082 and is not subject to the provisions of the Australian Code for the Transport of Dangerous Goods by Road and Rail when transported in packagings that do not incorporate a receptacle exceeding 500 kg(L); or (b) IBCs.. (ADG 7.8 SP AU01).

Poisons Schedule: S5. SIGNAL WORD: CAUTION

GHS Hazard Statement(s) from HCIS

Metal Corrosion	Category 1	H290	May be corrosive to metals
Skin Corrosion irritation	Category 1B	H314	Causes severe skin burns and eye damage
Specific Target Organ Toxicity (single exposure)	Category 3	H335	May cause respiratory irritation

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Aquatic acute toxicity	Category 1	H400	Very Toxic to the aquatic life
		AUH031	Contact with acid liberates toxic gas

Precautionary statements

Prevention:
P234: Keep only in original container
P260: Do not breathe mists.
P264: Wash face and hands thoroughly after handling.
P271: Use only outdoors in a well-ventilated area
P280: Wear protective gloves/ eye protection/ face protection.
P273: Avoid release to the environment. - if this is not the intended use.
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.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310: Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P390: Absorb spillage to prevent material damage
P391: Collect spillage.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P406: Store in corrosive resistant plastic container.
Disposal:
P501: Dispose of contents/container in accordance with local & regional waste disposal legislation

Hazard pictograms

Signal word **DANGER**

Label Statements:	Keep out of reach of Children. Read Label before use. If medical advice is needed, have product container or label at hand. Wash hands after use.

3. COMPOSITION / INFORMATION ON INGREDIENTS

This SDS has been amended to comply with EPA NZ SDS Notice 2017 (as amended) Section Part B Clause 9.

Ingredient	CAS Number	Concentration (% w/w)
Sodium Hypochlorite	7681-52-9	10-<30%
Sodium hydroxide	1310-73-2	< 1%
Not contributing to the product hazard		Balance

4. FIRST AID MEASURES

Corrosive Liquid. If poisoning occurs, contact a doctor o Poisons Information Centre. Phone Australia 13 1126.

Swallowed: If swallowed do NOT induce vomiting. Give a glass of water. Wash out mouth with water. Seek immediate medical attention.

Skin: If skin contact occurs, immediately flush body and clothes with large amounts of water, using safety shower if available. Quickly remove contaminated clothing and footwear and wash skin thoroughly. Wash affected area thoroughly with soap and water. Wash contaminated clothing before reuse or discard. If irritation occurs seek immediate medical attention.

Eye: If in eyes, hold eyes open, flood with water for at least 15 minutes. Take care not to rinse contaminated water into the non-affected eye. If irritation occurs seek immediate medical attention.

Inhaled: Remove from contaminated area. If symptoms develop seek medical attention.

Note to Physician Treat symptomatically

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Water spray or fog, /foam, or dry agent.

Special hazards arising from the chemical: Inhalation, ingestion or contact (skin, eyes) with vapors or substance may cause severe injury, burns or death. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution.

Special protective equipment and precautions for fire firefighters: The product is not combustible., however container may burn. Decomposition may produce toxic fumes of hydrogen chloride, chlorine and sodium oxide.

In confined areas or areas of excessive smoke, fire fighter must wear full protection and self-contained breathing apparatus.

Hazchem Code: **2X HIN 80**

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedure Evacuate the area. Avoid skin and eye contact and inhalation of mist. Wear appropriate protective equipment and clothing – See section 8.

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Environmental precautions	Keep spilt products out of drains, sewers and waterways. If large quantities of this material enter the waterways contact the Environmental Protection Authority, or your local Waste Management Authority.
Methods and materials for containment and cleaning up	For minor spills, contain and absorb with inert materials (sand, earth, not sawdust or other combustible absorbents), sweep up, place contaminated material in a sealed container and place in garbage. Can be neutralised with lime. Wash area down with excess water. For major spills contact emergency services and the manufacturer.

7. HANDLING AND STORAGE

Precautions for safe handling	Avoid skin and eye contact and breathing in mist. Immediately change contaminated clothing.
Safe storage, including any incompatibilities	Store in a cool, dry well-ventilated area, out of direct sunlight. Store in labelled, original containers. Keep containers tightly closed and upright.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

Sodium hypochlorite: Exposure limits have not been established by Safe Work Australia. The American Industrial Hygiene Association recommends a Workplace Environmental Exposure Level (WEEL) of 2 mg/m3 for a 15-minute work period. The National Institute for Occupational Safety and Health (NIOSH) recommended airborne exposure limit (REL) is 0.5 ppm (as Chlorine), which should not be exceeded during any 15-minute work period.

Sodium Hydroxide: Australia Exposure Standards

Ingredient	TWA	STEL	Peak	Notes
Sodium hydroxide	Not Available	Not Available	2 mg/m3	

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Exposure controls
Appropriate Engineering Controls: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Personal Protective equipment - for manufacturing and bulk handling situations:
The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

Skin Protection:	Wear PVC gloves that comply with AS/NZS 2126. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken.
Eye Protection:	Tightly fitting safety goggles or full-faced shields as appropriate recommended and that comply with AS/NZS 1336

	and 1337. Final choice of appropriate eye/face protection will vary according to individual circumstances i.e. methods of handling or engineering controls and according to risk assessments undertaken.
Respiratory Protection:	**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. An approved self contained breathing apparatus (SCBA) may be required in some situations. 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. 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
Personal Hygiene:	Always wash hands after handling this product.
Precautions for safe handling	Avoid skin and eye contact and inhalation of mist. Wear appropriate protective equipment and clothing. Use in a well-ventilated area. Avoid spillage onto floor. Keep containers closed when not in use. Keep workplace dry. Maintain personal hygiene by washing hands prior to eating, drinking, smoking or using toilet.
Safe storage, including any incompatibilities	Store in a cool, dry well-ventilated area, out of direct sunlight. Store in labelled, original containers. Keep containers tightly closed and upright. Store away from incompatible materials described in Section 10.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colourless or slightly yellow watery liquid	**Vapour density:**	No data found
Odour:	Chlorine	**Specific Gravity:**	1.17 @ 20 °C
pH:	12.5-13.5 at 1% solution	**Water solubility:**	29.3 g/100g at 0°C
Initial boiling point and boiling range:	111 °C in solution	**Partition coefficient n-octanol/water:**	Not applicable, inorganic compound
Flash point:	Not flammable	**Auto-ignition temperature:**	Not applicable
Evaporation rate:	No data found	**Decomposition temperature:**	'>177 °C
Flammability:	Not flammable	**Viscosity:**	No information found
Upper/lower flammability limits:	Not flammable	**Explosive properties:**	May explode when in contact with incompatible substances
Vapour pressure:	2 – 2.5 kPa @ 20°C	**Oxidising properties:**	Acts as oxidizer with combustible material..

10. STABILITY AND REACTIVITY

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Reactivity:	Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
Chemical Stability:	This product is stable and unlikely to react or decompose under normal circumstances. Sodium hypochlorite solutions slowly decompose when exposed to heat, light. In a fire and reactive conditions chlorine gas evolves.
Possibility of hazardous reactions:	When combined with an acid or ammonia may produce chlorine and chloramine gas. Decomposition of sodium hypochlorite takes place within a few seconds with the following salts: ammonium acetate, ammonium carbonate, ammonium nitrate, ammonium oxalate, and ammonium phosphate. Contact with metals may evolve flammable hydrogen gas. Hypochlorites react with urea to form nitrogen trichloride, which explodes.
Conditions to avoid:	Heating. Containers may explode when heated. Releases chlorine gas when heated above 35ºC. Anhydrous sodium hypochlorite is very explosive. Explosive reaction with formic acid (at 55ºC), phenylacetonitrile. Reacts to form explosive products with amines, ammonium salts, aziridine, and methanol
Incompatible materials:	Incompatible with strong acids, amines, ammonia, ammonium salts, reducing agents, metals, aziridine, methanol, formic acid, phenylacetonitrile.

11. TOXICOLOGICAL INFORMATION

No data available for the product. Information given is based on the sodium hypochlorite component (11.7 % w/w).

Routes of Exposure
Inhalation, ingestion, skin contact, eye contact Sodium hypochlorite has a pronounced irritant effect and may cause severe burns to skin and eyes. Poisonous vapor (chlorine gas) is corrosive to respiratory passages and may cause irritation of mouth, nose, and throat. If ingested sodium hypochlorite is poisonous, causes burns, abdominal cramps, nausea, vomiting, lowered blood pressure, diarrhea, shock, and coma. Death may occur. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

Chronic Exposure
Repeated or prolonged contact with skin may cause dermatitis, coughing, runny nose, bronchopneumonia, headaches, breathing difficulty, pulmonary edema and lung injury. Caustic dusts are irritating to the upper respiratory system; prolonged exposure to high concentrations may cause discomfort and ulceration of nasal passages.

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 Oral (rat) LD50: >237 mg/kg..

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Acute Dermal	Dermal (rabbit) LD50: >10000 mg/kg.
Skin corrosion/irritation	The material can produce severe chemical burns following direct contact with the skin. The material may produce health damage following entry through wounds, lesions or abrasions.
Serious eye damage/eye irritation	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
Inhalation	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.
Respiratory or skin sensitisation	Inhalation of mist may result in respiratory irritation. No data found for skin or respiratory sensitisation
Mutagenicity	No information found.
Reproduction/Development	No information found.
Carcinogenicity	No carcinogenicity was observed in mice or rats exposed by inhalation to chlorine and orally to sodium hypochlorite, except some equivocal results were reported for female rats by oral route. For human carcinogenicity, no causal relationship between hypochlorite exposure and tumor incidence was observed.
Specific target organ toxicity - single exposure	Moderate depression of the central nervous system was found at 1 hour after administration. Most survivors showed a mild to moderate persistent anorexia. Most affected animals showed diarrhea for several days.
Specific target organ toxicity - repeated exposure	Sodium Hypochlorite can irritate the lungs. Repeated exposure may cause bronchitis to develop with coughing, phlegm, and/or shortness of breath. A NOAEL (chronic) can be calculated to be approximately 14 mg available chlorine /kg bw/day for rats and 22.5 mg available chlorine /kg bw/day for mice.
Aspiration hazard	Not considered to be an aspiration hazard.

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12. ECOLOGICAL INFORMATION

No data available for the product. Information given is based on the sodium hypochlorite component (11.7 % w/w).

Aquatic toxicity	Fish: 96-hour LC_{50}: 0.032 mg/L Crustacean: 48-hour EC^{50}: 0.026 mg/L. 0.06 hour EC^{50} 0.002 mg/L Algae or other aquatic plants: 72-hour EC^{50}: 0.0183 - 4.16158 mg/L
Persistence and degradability	No information found
Bioaccumulative potential:	No information found
Mobility in soil	No information found
PBT identification:	This product is not identified as a PBT/vPvB substance.
Other adverse effects:	None known.

13. DISPOSAL CONSIDERATIONS

Disposal: Rinse empty containers in the pool and dispose of by wrapping with paper and putting in garbage. For larger quantities, refer to Refer to local government authority for disposal recommendations. Dispose of material through a licensed waste contractor. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

14. TRANSPORT INFORMATION

This product is an Environmentally Hazardous Substance, Liquid - meeting the description of UN 3082 and is not subject to the provisions of the Australian Code for the Transport of Dangerous Goods by Road and Rail when transported in not exceeding 500 kg. (ADG 7.8 SP AU01)

Consult the ADG 7.8, IMDG and ICAO/IATA Codes for all the transport requirements for the specified UN Number.

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	Land Transport (ADG 7.7)	**Sea Transport (IMDG)**	**Air Transport (ICAO/IATA)**
UN Number	1791	1791	1791
UN proper shipping name	HYPOCHLORITE SOLUTION.	HYPOCHLORITE SOLUTION.	HYPOCHLORITE SOLUTION.
Transport Hazard Class	8	8	8
Packaging Group	II	II	II
Marine Pollutant		Yes	Yes
Special Provisions*			
Limited Quantities	1L		
Packaging Instructions*	P001, IBC02		
Special Packaging Instructions*	P10 B5		
Excepted quantities*	E2		

'* Consult IMDG Code for sea transport and ICAO/IATA Code for air transport provisions and instructions.

15. REGULATORY INFORMATION

EPA NZ Approval	HSR002681 (Water-Treatment-Chemicals-(Corrosive)-Group-Standard-2020
Listed in NZ NZIoC	Sodium hypochlorite, and Sodium chloride may be used under an appropriate Group Standard
Poisons Standard (Scheduling):	Schedule 5
APVMA Product Number:	66166
Listing in the Australian Inventory of Chemical Substances (AICS)	Not applicable for APVMA registered products

16. OTHER INFORMATION

ADG	Australian Code for the Transport of Dangerous Goods by Road & Rail Edition 7.5, 2017
AS/NZS	Australian Standard/New Zealand Standard
CAS Number:	Unique Chemical Abstracts Service Registry Number
EC_{50}:	Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species).
GHS:	Globally Harmonized System of classification and labelling of chemicals (GHS)

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Hazchem Code:	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters
HCIS:	Hazardous Chemical Information System (http://hcis.safeworkaustralia.gov.au/HazardousChemical)
NZIoC	New Zealand Inventory of Chemicals
IARC:	International Agency for Research on Cancer
LD_{50}:	Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).
IDLH:	Immediately dangerous to life or health (**IDLH**) is **defined** by the US National Institute for Occupational Safety and Health (NIOSH)
LC_{50}:	Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population.
NTP:	National Toxicology Program (USA)
NZIoC	New Zealand Inventory of Chemicals
SDS:	Safety Data Sheet
STEL:	Short term exposure limit (STEL) means the time-weighted average maximum airborne concentration of a substance calculated over a 15 minute period.
TWA:	8-hour Time-weighted average (TWA) means the maximum average airborne concentration of a substance when calculated over an eight-hour working day, for a five-day working week.
WES:	Workplace exposure standard
UN Number:	United Nations Dangerous Goods Number

References:
Work Safe Australia Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (February 2023). The exposure standards comply with the Australian Workplace Exposure Standards for Airborne Contaminants. The Dangerous Goods Classification complies with the Australian Code for the Transport of Dangerous Goods by Road & Rail Edition 7.8, 2022. Other information from ChemIDPlus and linked databases and the European Chemicals Agency Classification and Labelling database. Manufacturer's SDS.

Sections Revised: 1, 15, 16
Modified from Australian SDS revision: 4 March 2024

Disclaimer
This Safety Data Sheet (SDS) has been prepared in compliance with the Work Safe Australia Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (February 2023). The information in this SDS should be provided to all who will use, handle, store, transport, or otherwise be exposed to this product. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Hy-Clor Australia Pty. Limited shall not be held liable for any damage resulting from handling or from contact with the above product.

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