Infosafe No™	1CHLG	Issue Date : July 2018	RE-ISSUED by CHEMSUPP

Product Name : **SODIUM HYPOCHLORITE Solution 5-9% avail. Chlorine**

Classified as hazardous

1. Identification

GHS Product Identifier	SODIUM HYPOCHLORITE Solution 5-9% avail. Chlorine
Company Name	CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)
Address	38 - 50 Bedford Street GILLMAN SA 5013 Australia
Telephone/Fax Number	Tel: (08) 8440-2000 Fax: (08) 8440-2001
Recommended use of the chemical and restrictions on use	Bleaching agent, water purification, pharmaceuticals, fungicides, household bleach, intermediate, organic chemicals, swimming pool disinfectant, laundering, germicide and laboratory reagent.

Other Names

Name	Product Code
Pool chlorine	
Dakins solution	
Chlorinated soda solution	
Carrel-Dakin solution	
SODIUM HYPOCHLORITE Solution 5.25% avail. Chlorine	ST167

Other Information

EMERGENCY CONTACT NUMBER: +61 08 8440 2000
Business hours: 8:30am to 5:00pm, Monday to Friday.

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

GHS classification of the substance/mixture	Eye Damage/Irritation: Category 2A Skin Corrosion/Irritation: Category 2
Signal Word (s)	WARNING
Hazard Statement (s)	H315 Causes skin irritation. H319 Causes serious eye irritation. AUH031 Contact with acids liberates toxic gas.
Pictogram (s)	Exclamation mark

Precautionary statement – Prevention	P264 Wash thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statement – Response	P302+P352 IF ON SKIN: Wash with plenty of soap and water. P332+P313 If skin irritation occurs: Get medical advice/attention. P362 Take off contaminated clothing and wash before reuse. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 If eye irritation persists: Get medical advice/attention.
Precautionary statement – Disposal	P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

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Chemical Characterization Liquid

Ingredients

Name	CAS	Proportion	Hazard Symbol	Risk Phrase
Sodium hypochlorite	7681-52-9	5.25-9.45 %	C	R31, R34
Sodium hydroxide	1310-73-2	0-0.25 %		
Water to make a total of 100%		-		

4. First-aid measures

Inhalation If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Consult a physician.

Ingestion Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Wash clothing before reuse. Decontaminate clothing, shoes and leather goods before re-use, or discard. Seek medical attention.

Eye contact If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical assistance.

First Aid Facilities Maintain eyewash fountain and drench facilities in work area.

Advice to Doctor Treat symptomatically. Can cause corneal burns. Delayed pulmonary oedema may result.

Protection for First Aiders Can release corrosive chlorine gas. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

Other Information For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Hazards from Combustion Products Dangerous, corrosive, irritating, toxic and/or hazardous combustion fumes, vapours, or gases including chlorine gas (above 35 °C, or when mixed with chemicals (e.g. ammonia, acids, detergents, etc.) or organic matter), hydrogen chloride gas (HCl), hydrochloric acid, sodium chlorate, oxygen gas (when exposed to sunlight), chloramine gas (when mixed with ammonia), flammable hydrogen gas (upon contact with metals) and sodium oxide (Na2O) (at high temperatures).

Specific Methods Not combustible, however, if material is involved in a fire use: Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

Specific hazards arising from the chemical Material does not burn. Runoff may pollute waterways. Fire or heat may produce irritating, poisonous and/or corrosive fumes. Containers may explode when heated.

Decomposition Temp. > 35 °C; 96 - 120 °C at 1013 hPa (boiling point).

Precautions in connection with Fire Wear SCBA and structural firefighter's uniform.

6. Accidental release measures

Spills & Disposal Slippery whem spilt. Use absorbent (sand, soil or other inert material). Collect and seal in properly labelled containers or drums for disposal. Wash down area with excess water.

Personal Precautions Avoid inhalation, contact with skin, eyes and clothing.

Personal Protection Wear protective clothing specified for normal operations (see Section 8)

Environmental Precautions Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.

7. Handling and storage

Precautions for Safe Handling Avoid ingestion and inhalation of solutions/mists. Avoid contact with eyes, skin, or clothing. Avoid prolonged or repeated exposure. Build-up of mist or vapours in the working atmosphere must be prevented. Keep locked up. Keep container tightly sealed. May be under pressure. Take care when opening. Ensure adequate ventilation when using. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Wear appropriate protective equipment and clothing. Wash hands after use. It is essential that all who come into contact with this material, maintain high standards of personal hygiene i.e. washing hands prior to eating, drinking, smoking or going to the toilet. Do not handle broken packages unless wearing appropriate personal protective equipment. Avoid spillage onto floor- keep it clean at all times. Use clean

	containers for dispensing. Keep container dry. This substance is a moderate oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Substance can reduce the ignition temperature of flammable substances. Do not mix with other chemicals. Do not mix with different types of chlorinating chemicals. Keep away from incompatibles such as reducing agents, combustible materials, organic materials, metals, acids. Keep away from heat and all sources of ignition. Sensitive to light. Limited shelf life.
Conditions for safe storage, including any incompatabilities	Store under cover in a suitable, light-resistant, labelled, tightly closed containers, in a dry, clean, cool, well-ventilated place away from sunlight. Cannot be stored indefinitely. Sensitive to air and light. Protect from light and physical damage. Store and transport in an upright container. Close containers in such a way to enable internal pressure to escape (e.g. excess pressure valve). Store away from incompatible materials. Do not mix with other chemicals. Do not mix with different types of chlorinating chemicals. Store away from flammable, combustible and reducing substances, acids, alkalies, food and feedstuffs. Store away from sources of heat or ignition. Vent caps should be checked with full personal protection. Containers of this material may be hazardous when empty since they retain product residues (vapours, liquid); observe all warnings and precautions listed for the product.
Corrosiveness	Corrosivity to Metals: Sodium hypochlorite solutions (20%) are corrosive to brass (aluminium, naval and silicon) bronze, carbon steel, cast iron, Hastelloy, Inconel, nickel, stainless steels (types 304/347, 316 and 400 series) and silicon copper. Concentrated sodium hypochlorite is corrosive to most metals, including aluminium, copper, brass, bronze, carbon steel, Hastelloy, Inconel, lead, Monel, nickel and stainless steel type 400 series. Sodium hypochlorite solutions are not corrosive to tantalum, titanium and zirconium. Dilute solutions are not corrosive to Hastelloy C/C-276 (10%), Incolloy (5%) and high silicon iron. Corrosivity to Non-Metals: Sodium hypochlorite solutions attack some plastics (such as nylon, Bisphenol A-fumarate and isophthalic polyesters), elastomers (such as soft rubber, neoprene and nitrile Buna-N) and coatings (such as coal tar epoxy, epoxy and vinyls). Sodium hypochlorite solutions do not attack acrylonitrile-butadiene-styrene (ABS), Butyl rubber, isoprene, hard rubber, natural rubber, polyvinyl chloride (PVC), chlorinated polyvinyl chloride (CPVC), polyethylene, polypropylene, polystyrene, Teflon and Viton.
Storage Regulations	This material is a Scheduled Poison S5 and must be stored, maintained and used in accordance with the relevant regulations.
Storage Temperatures	20 ºC Maximum.

8. Exposure controls/personal protection

Other Exposure Information	A time weighted average (TWA) has been established for Chlorine (Safe Work Australia) of 3 mg/m³ (Peak limitation), (1 ppm). A time weighted average (TWA) has been established for Sodium hydroxide (Safe Work Australia) of 2 mg/m³ (Peak limitation), (1 ppm). The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. Peak Limitation - a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes.
Appropriate engineering controls	In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. These methods should be used in preference to personal protective equipment.
Respiratory Protection	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing vapours or mists. Select and use respirators in accordance with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure levels.
Eye Protection	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.
Hand Protection	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Excellent: Vinyl gloves. Good: Nitrile rubber gloves Fair: NR latex and neoprene.
Personal Protective Equipment	Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.
Footwear	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.
Body Protection	Clean clothing or protective clothing should be worn. Clothing for protection against chemicals should

Hygiene Measures	comply with AS 3765 Clothing for Protection Against Hazardous Chemicals. Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

Form	Liquid
Appearance	Clear, pale yellow or greenish liquid.
Odour	Disagreeable, sweetish odour of chlorine.
Decomposition Temperature	> 35 °C; 96 - 120 °C at 1013 hPa (boiling point).
Melting Point	-6°C (5% solution NaOCl)
Boiling Point	96 - 99°C (5% available chlorine). Reported to slowly decompose above 40 °C.
Solubility in Water	Soluble in all proportions.
Solubility in Organic Solvents	Reacts with many organic solvents.
Specific Gravity	1.1 (5.5% aqueous solution).
pH	Approx. 12.8 (6.5% available Chlorine solution). Alkaline.
Odour Threshold	Not applicable. Odour is due to breakdown products such as chlorine.
Volatile Component	ca. 95% vol @ 21 °C (5% as NaOCl).
Partition Coefficient: n-octanol/water	Log P(oct) = -3.42 (estimated).
Flammability	Non combustible material.
Explosion Properties	Slightly explosive in presence of heat. Explosive decomposition may occur under fire conditions and closed containers may rupture violently due to rapid decomposition, if exposed to fire or excessive heat for a sufficient period of time. May react to form normal chloroamines, which are explosive. Interaction with ethyleneimine gives the explosive N-chloro compound. Removal of formic acid from industrial waste streams with sodium hypochlorite solution becomes explosive at 55 °C. Several explosions involving methanol and sodium hypochlorite were attributed to formation of methyl hypochlorite, especially in presence of acid or other esterification catalyst. Use of sodium hypochlorite solution to destroy acidified benzyl cyanide residues caused a violent explosion, thought to have been due to formation of nitrogen trichloride.
Molecular Weight	74.44
Oxidising Properties	Moderate oxidizing hazard. Sodium hypochlorite solutions give off oxygen when heated or when exposed to sunlight. However, the amount is small and will not cause or contribute to combustion. The solutions are, therefore, not considered to be oxidizing agents.
Dynamic Viscosity	2.6 mPa*s (5% available chlorine).

10. Stability and reactivity

Chemical Stability	Sodium hypochlorite solutions decompose slowly on contact with carbon dioxide from air at normal temperatures releasing low concentrations of corrosive chlorine gas. Decomposition is influenced by temperature, concentration, pH, ionic strength, exposure to light and the presence of metals, such as copper, nickel or cobalt, metal oxides, e.g. rust and other impurities, such as acids and amines.
Conditions to Avoid	Exposure to light, air or heat (temperatures above 40 °C), acidic conditions, the presence of combustible materials, metals and other impurities and incompatible materials.
Incompatible Materials	Primary amines (e.g. ethylamine) and aromatic amines (e.g. aniline); ammonium salts (e.g. ammonium sulfate and ammonium nitrate), ammonia, urea or phenylacetonitrile if acid is present; acids (especially hydrochloric acid); metals (especially copper, nickel and cobalt); reducing agents (e.g. hydrides, such as lithium aluminium hydride); ethyleneimine (aziridine); methanol, especially in the presence of acids or other etherification catalysts; formic acid (at 55 °C); furfuraldehyde; ethanediol (ethylene glycol); sodium ethylenediaminetetracetate (EDTA) solution and sodium hydroxide solution + mixing.
Hazardous Decomposition Products	Dangerous, corrosive, irritating, toxic and/or hazardous combustion fumes, vapours, or gases including chlorine gas (above 35 °C, or when mixed with chemicals (e.g. ammonia, acids, detergents, etc.) or organic matter), hydrogen chloride gas (HCl), hydrochloric acid, sodium chlorate, oxygen gas (when exposed to sunlight), chloramine gas (when mixed with ammonia), flammable hydrogen gas (upon contact with metals) and sodium oxide (Na2O) (at high temperatures).

Possibility of hazardous reactions	Reaction with primary amines (e.g. ethylamine) and aromatic amines (e.g. aniline) forms explosively unstable N-mono- or di- chloramines. Reaction with ammonium salts (e.g. ammonium sulfate and ammonium nitrate), ammonia, urea or phenylacetonitrile forms explosive nitrogen trichloride, if acid is present. Contact with acids (especially hydrochloric acid) releases toxic and corrosive chlorine gas. Reactions with reducing agents (e.g. hydrides, such as lithium aluminium hydride) are violent. Reactions with ethyleneimine (aziridine) form the explosive N- chloroethyleneimine. Reactions with methanol can form explosive methyl hypochlorite, especially in the presence of acids or other etherification catalysts. Reactions with formic acid become explosive at 55 °C. Dropwise addition of the furfuraldehyde to a 10% excess of sodium hypochlorite solution at 20-25 °C can lead to a violent explosion. Reaction with ethanediol (ethylene glycol) is explosively violent after an induction period of about 4 to 8 minutes. Reaction with sodium ethylenediaminetetracetate (EDTA) solution and sodium hydroxide solution with mixing leads to vigorous foaming decomposition.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Ingestion	Ingestion can cause irritation, pain and inflammation of the mouth, throat and stomach, as well as vomiting. In severe cases, serious effects including nausea, vomiting, choking, coughing, haemorrhage, oedema of the pharynx, glottis, larynx with stridor and obstruction, ulceration and perforation of the gastrointestinal tract, with mediastinitis or peritonitis, circulatory collapse, confusion, coma and possible death. Risk of aspiration! The amount ingested, the concentration and pH of the solution affect the severity of the symptoms. As little as 30 mL of a solution with 15% available chlorine may be lethal. Ingestion is not a typical route of occupational exposure.
Inhalation	Excessive inhalation of vapours, mists, or fumes, especially if the pH is lowered, if the solution is heated or if mixed with acids, resulting in the release of hazardous concentrations of chlorine, may cause irritations of the mucous membranes of the nose, throat and lungs, burning sensation, coughing, wheezing, dyspnoea, shortness of breath, sore throat, laryngitis, headache, nausea, vomiting, pulmonary oedema, pneumonitis and emphysema. Symptoms may be delayed. Additional effects have included circulatory collapse and confusion, delirium, coma, and even death.
Skin	May cause severe irritation or skin burns depending on the duration of contact, the concentration and pH of the solution. Contact with skin may also cause redness, itching, severe pain, vesicular eruptions and eczematoid dermatitis which becomes evident upon re-exposure.
Eye	Contact may cause severe irritation, especially at higher concentration. May cause stinging, blurring, tearing and severe pain. Heating or mixing with acids can cause significant concentrations of chlorine gas (a severe eye irritant) to be released. Chlorine concentrations of 1 ppm and higher have reportedly caused stinging, a burning sensation, rapid blinking, redness and watering of the eyes.
Carcinogenicity	Hypochlorite salts are evaluated in the IARC Monographs (Vol. 52; 1991) as Group 3: Not classifiable as to carcinogenicity to humans.
Chronic Effects	Prolonged or repeated inhalation may cause allergic respiratory reaction (asthma). Prolonged or repeated skin contact may cause redness, dryness, blistering, cracking, irritation, with possible dermatitis following. Prolonged or repeated eye contact may cause conjunctivitis.

12. Ecological information

Ecotoxicity	Forms corrosive mixtures with water even if diluted. Highly toxic for aquatic organisms. Harmful effect due to pH shift.
Persistence and degradability	Methods for the determination of biodegradability are not applicable to inorganic substances.
Environmental Protection	Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and disposed of according to relevant local, state and federal government regulations.

14. Transport information

Transport Information	Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS). Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

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Poisons Schedule S5

16. Other Information

Literature References

'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia.
Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997.
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007.
Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011.
Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010.
Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'.
Safe Work Australia, 'Hazardous Substances Information System, 2005'.
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'.
Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.

Contact Person/Point

Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT:
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Empirical Formula & Structural Formula

NaOCl.

...End Of MSDS...