

Safety Data Sheet SODIUM HYPOCHLORITE Solution 8 -12.5% avail. Chlorine

SDS no. VNCQS11M • Version 1.0 • Date of issue: 2023-05-10

SECTION 1: Identification

GHS Product identifier

Product name SODIUM HYPOCHLORITE Solution 8 -12.5% avail. Chlorine

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.

Supplier's details

Name ChemSupply Australia Pty Ltd
Address 38-50 Bedford Street
5013 Gillman South Australia
Australia

Telephone 08 8440 2000
email www.chemsupply.com

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Serious eye damage/eye irritation, Cat. 1
- Skin corrosion/irritation, Cat. 1B
- Hazardous to the aquatic environment, short-term (acute), Cat. 1
- Hazardous to the aquatic environment, long-term (chronic), Cat. 1

GHS label elements, including precautionary statements

Pictograms

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Signal word

Danger

Hazard statement(s)

H314

Causes severe skin burns and eye damage

H400

Very toxic to aquatic life

H410

Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P260

Do not breathe dust/fume/gas/mist/vapors/spray.

P273

Avoid release to the environment.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P304+P340

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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/physician

P391

Collect spillage.

P501

Dispose of contents/container to approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 74.44

Components

Component	Concentration
Water (CAS no.: 7732-18-5; EC no.: 231-791-2)	> 87.5 - <= 92 % (weight)
CLASSIFICATIONS: No data available. HAZARDS: No data available.	
Sodium hypochlorite solution (10-13% Cl2) (CAS no.: 7681-52-9; EC no.: 231-668-3; Index no.: 017-011-00-1)	> 8 - >= 12.5 % (weight)
CLASSIFICATIONS: Skin corrosion/irritation, Cat. 1B; Serious eye damage/eye irritation, Cat. 1; Hazardous to the aquatic environment, short-term (acute), Cat. 1; Hazardous to the aquatic environment, long-term (chronic), Cat. 1. HAZARDS: H314 - Causes severe skin burns and eye damage; H318 - Causes serious eye damage; H400 - Very toxic to aquatic life; H410 - Very toxic to aquatic life with long lasting effects. [SCLs/M-factors/ATEs]: EUH031: C ≥ 5 %; M=10; M=1	

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice

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

If inhaled

If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

In case of skin contact

If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

In case of eye contact

If in eyes, hold eyelids apart and flush eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor, or for at least 15 minutes.

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If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Personal protective equipment for first-aid responders

No action shall be taken involving any personal risk or without suitable training. Take proper precautions to ensure your own safety before attempting rescue; (e.g. wear appropriate protective equipment, use the <qt>buddy<qt> system.) 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Avoid mouth-to-mouth contact by using mouth guards or shields. Wash contaminated clothing thoroughly with water before removing or wear gloves.

Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

Advice to Doctor: Treat symptomatically and supportively. Consider oral administration of sodium thiosulfate solutions if sodium hypochlorite is ingested. Do not administer neutralizing substances (e.g., acid antidotes) since the resultant exothermic reaction could further damage tissue. Sodium thiosulphate immediately reduces hypochlorite to non toxic products but may produce hydrogen sulphide in contact with acids. Endotracheal intubation could be needed if glottic oedema compromises the airway. For individuals with significant inhalation exposure, monitor arterial blood gases and chest x-ray. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Use extinguishing media appropriate for surrounding fire.

Specific hazards arising from the chemical

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 (e.g. urine, faeces, etc.)), 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).

Material does not burn. Fire or heat will produce irritating, poisonous and/or corrosive gases. Containers may explode when heated.

Special protective actions for fire-fighters

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. For personal protection see section 8.

Methods and materials for containment and cleaning up

Small Spillages: Absorb or contain liquid with sand, earth or spill control material. Shovel up using non sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum. The flush area with a large quantity of water.

SECTION 7: Handling and storage**Precautions for safe handling**

Avoid ingestion and inhalation of vapour (or) spray mist. Avoid contact with eyes, skin, or clothing. Avoid prolonged or repeated exposure. 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 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. Limited shelf life.

Conditions for safe storage, including any incompatibilities

Corrosives area. 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. May decompose forming gaseous products, especially when stored over long periods. 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.

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 Temperatures: Below 25°C.

Unsuitable Materials: Metal, ceramic and glass containers.

SECTION 8: Exposure controls/personal protection**Appropriate engineering controls**

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)**Eye/face 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.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Normally not required but if in doubt ensure hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Respiratory protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be

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made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Appearance	Clear, pale yellow or greenish liquid.
Color	No data available.
Odor	Characteristic, pungent, chlorine-like (bleach) odour; disagreeable, sweetish odour.
Odor threshold	Not applicable. Odour is due to breakdown products such as chlorine.
Melting point/freezing point	-6 °C (5% solution); -25 °C approx. (12% solution).
Boiling point or initial boiling point and boiling range	96 - 120 °C at 1013 hPa (decomposition).
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive 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. The anhydrous solid obtained by desiccation of the sodium hypochlorite pentahydrate will decompose violently on heating or friction. 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. Containers may rupture from pressure build-up.
Auto-ignition temperature	No data available.
Decomposition temperature	> 35 °C; 96 - 120 °C at 1013 hPa (boiling point).
Oxidizing properties	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.
pH	Approx. 13 (Alkaline).
Kinematic viscosity	[88] Dynamic Viscosity: 2.6 mPas (20 °C).
Solubility	Solubility in Water: Miscible (soluble) in all proportions. Solubility in Organic Solvents: Reacts with many organic solvents.
Partition coefficient n-octanol/water (log value)	Log P(oct) = -3.42 (estimated).
Vapor pressure	17.4 - 25 hPa at 20 °C.
Evaporation rate	Not available; probably very low.
Density and/or relative density	Specific Gravity: Approx. 1.1 (6% aqueous solution); 1.21 (14% aqueous solution) (water = 1).
Relative vapor density	No data available.

Particle characteristics

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No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

No data available.

SECTION 10: Stability and reactivity

Reactivity

None under normal use conditions.

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. Shelf life is limited.

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.

Conditions to avoid

Exposure to light, air or heat, 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 aluminum 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 (e.g. urine, faeces, etc.)), 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).

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

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

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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.

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 corrosion/irritation

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.

Serious eye damage/irritation

Contact may cause severe irritation and corrosive injury, especially at higher concentration. May cause stinging, blurring, tearing, severe pain and possible permanent corneal damage. Risk of blindness! 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.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

Hypochlorite salts are evaluated in the IARC Monographs (Vol. 52; 1991) as Group 3: Not classifiable as to carcinogenicity to humans.

Reproductive toxicity

No data available

Specific target organ toxicity (STOT) - single exposure

No data available

Specific target organ toxicity (STOT) - repeated exposure

No data available

Aspiration hazard

No data available

Additional information

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.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - Pimephales promelas (fathead minnow) - 0.08 mg/l - 96 h (ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates - EC50 - Daphnia magna (Water flea) - 0.04 mg/l - 48 h (ECOTOX Database)

Toxicity to algae - static test EC10 - Pseudokirchneriella subcapitata - 0.02 mg/l - 72 h (OECD Test Guideline 201)

Persistence and degradability

No data available.

Bioaccumulative potential

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No data available.

Mobility in soil

No data available.

Results of PBT and vPvB assessment

No data available.

Endocrine disrupting properties

No data available.

Other adverse effects

No data available.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

UN Number: 1791

Class: 8

Packing Group: III

Proper Shipping Name: HYPOCHLORITE SOLUTION

Environmental Hazards: Forms corrosive mixtures with water even if diluted. Highly toxic for aquatic organisms. Harmful effect due to pH shift.

Hazchem emergency action code (EAC)

2X

IMDG

UN Number: 1791

Class: 8

Packing Group: III

EMS Number:

Proper Shipping Name: HYPOCHLORITE SOLUTION

IATA

UN Number: 1791

Class: 8

Packing Group: III

Proper Shipping Name: HYPOCHLORITE SOLUTION

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: S5

SECTION 16: Other information**Further information/disclaimer**

ChemSupply Australia 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 ChemSupply Australia 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 ChemSupply Australia 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.

Preparation information

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)