

Material Safety Data Sheet

Page 1 of 5 Issue date: August 2013

SODIUM HYPOCHLORITE SOLUTION

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Hurst Scientific Pty Ltd
Unit 13, 2-6 Tulloch Way
Canning Vale WA 6155 Phone : 61 8 6254 2000 Fax : 61 6254 2559
Product Name: Sodium Hypochlorite Solution
Synonyms: Liquid pool chlorine, Liquid Bleach, Labarraque's Solution
Manufacturer's Product Code(s): SH-5L
Use: Used in hospital and pathology laboratories.

2. HAZARD IDENTIFICATION

This material is hazardous according to criteria of NOHSC Australia; HAZARDOUS SUBSTANCE Classified as a dangerous good by the criteria of the ADG Code; DANGEROUS GOODS.+

Hazard Category

C Corrosive

Risk Phrases

R31 Contact with acids liberates toxic gas

R34 Causes burns

R50 Very toxic to aquatic organisms

Safety Phrases

S1/2 Keep locked up and out of reach of children

S23 Do not breathe vapour

S24/25 Avoid contact with skin and eyes

S36/37/39 Wear suitable protective clothing, gloves & eye/face protection

S38 In case of insufficient ventilation, wear suitable respiratory equipment

S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)

S50 Do not mix with incompatible materials

Poisons Schedule: S5 Caution

3. COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE NAME	Proportion	CAS Number
Sodium Hypochlorite	12-30%	7381-52-9
WATER	Balance	7732-18-5

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (Phone: Australia 131 126; New Zealand 0800 764 766) or a doctor.

Eye	If in eyes, hold eyelids apart and flush the eye continuously with running water for at least 15 minutes. Seek immediate medical assistance
Inhalation	If inhaled, remove from contaminated area – avoid becoming a casualty. To protect rescuer, use a Full-face Type B (Inorganic and acid gas) respirator or an Air-line respirator. Remove contaminated clothing and loosen clothing. Apply artificial respiration if not breathing. Seek immediate medical advice.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush in and hair with running water for at least 15 minutes. If swelling, redness, blistering or irritation occurs, seek medical assistance.
Ingestion	Immediately rinse mouth with water. If swallowed do not induce vomiting. Give a glass of water. Seek immediate medical assistance.

Material Safety Data Sheet

Page 2 of 5

Issue date: August 2013

SODIUM HYPOCHLORITE SOLUTION

Advice to Doctor

Treat symptomatically. Can cause corneal burns. Delayed pulmonary oedema may result. Ingestion of hypochlorites releases hypochlorous acid which is irritating to the mucous membranes and skin but has low systemic toxicity. Buffer the acid by administering antacids.

First Aid Facilities

Eye wash facilities and safety shower should be available.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Water fog (or if unavailable, fine water spray), normal foam, dry chemical powder, carbon dioxide

Specific Hazards:

Non-combustible. Decomposes on heating, emitting toxic fumes, including those of chlorine.

Precautions for Fire Fighters and

Special Protective Equipment:

Wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

Hazchem Code:

2X

6. ACCIDENTAL RELEASE MEASURES

If contamination of sewers or waterways has occurred advise local emergency services. Observe all local and national regulations.

Small Spills:

Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours. Wipe up with absorbent (clean rag or paper towels). Rinse absorbent with copious quantities of water. Allow absorbent to dry before disposing with normal household garbage.

Large Spills:

Shut off all possible sources of ignition. Clear area of all unprotected personnel. Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. If contamination of sewers or waterways has occurred advise local emergency services.

Dangerous Goods Initial Emergency Response Guide (SAA/SNZ HB76:2010): 37

7. HANDLING AND STORAGE

This material is classified as a Dangerous Good Class 8 Corrosive by the criteria of the ADG Code and must be stored and handled in accordance with the relevant regulations.

This material is a Scheduled Poison S5 and must be stored, maintained and used in accordance with the relevant regulations.

Storage:

Store in a secured, cool, dry, well ventilated area, removed from reducing agents, acids, organic materials, amines, metals, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage, sealed when not in use, vented and stored upright. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation systems

Handling:

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Material Safety Data Sheet

Page 3 of 5 Issue date: August 2013

SODIUM HYPOCHLORITE SOLUTION

Exposure Standards:

Chemical Name	Reference	TWA ppm	mg/m3	STEL	ppm	mg/m3	Carcinogen	Category
Sodium Hypochlorite	ASCC	1	3	-	-	-	-	-

As published in "Workplace Exposure Standards for Airborne Contaminants, December 2011" by SWA.

Biological Limit: None allocated for this product.

Engineering Controls: Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards. If inhalation risk exists, use with local exhaust ventilation or while wearing suitable mist respirator. Keep containers closed when not in use.

Personal Protective Equipment:

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.

Respiratory Protection: If engineering controls are inadequate, wear an approved P1 or P2 particulate filter respirator conforming to AS/NZS1715 and AS/NZS1716.

Hand Protection: Use impervious elbow length PVC or butyl rubber gauntlet-type gloves.

Eye Protection: Chemical splash goggles (gas tight type preferred) and full face shield.

Protective Clothing: PVC overalls or jacket and pants and butyl rubber Wellington boots.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, pale yellow - green liquid
Odour:	Chlorine
pH:	12.5 @ 10% solution
Boiling Point:	>100°C
Melting Point:	-25°C
Evaporation Rate:	Not available
Flash Point:	Not applicable
Flammability Limits:	Not applicable
Specific Gravity:	1.17 – 1.22 @ 20°C
Vapour Density (air=1):	Not available
Vapour Pressure:	17.5 mm Hg @ 20°C
% Volatiles:	80% - 95%
Solubility in water:	Miscible with water

10. STABILITY AND REACTIVITY

Reactivity: Contact with acids liberates toxic gas. Contact with hydrochloric acid evolves chlorine gas.
Chemical Stability: Product is stable under normal conditions of use, storage and temperature. The amount of available chlorine diminishes over time.

Hazardous Reactions: Polymerisation is not expected to occur. Reacts exothermically with acids. Reacts with ammonia, amines and ammonium salts to produce chloramines. Decomposes on heating to produce chlorine gas.

Conditions to Avoid: Avoid heat, sparks, open flames and other ignition sources

Incompatible Materials: Incompatible with acids, metals, metal salts, peroxides, reducing agents, and ethylene diamine tetraacetic acid. Incompatible with ammonia and ammonium compounds such as amines and ammonium salts.

Hazardous Decomposition

Products: May evolve toxic gases (chlorine) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Material Safety Data Sheet

Page 4 of 5 Issue date: August 2013

SODIUM HYPOCHLORITE SOLUTION

No adverse health effects expected if the product is handled in accordance with this Material Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

HEALTH EFFECTS

Acute:

Ingestion: Corrosive - toxic. Ingestion may result in burns to the mouth and throat, nausea, vomiting, ulceration of the gastrointestinal tract, breathing difficulties, circulatory collapse and coma. LD₅₀ (Ingestion, mouse) = 5,800 mg/kg. TDLo (Ingestion, woman) = 1 g/kg

Eye Contact: Highly corrosive. Contact may result in irritation, lacrimation, pain, redness, conjunctivitis and corneal burns with possible permanent damage.

Skin Contact: Severe eye irritant, Corrosive. Contact may result in irritation, redness, pain, rash, dermatitis and possible burns. Prolonged or repeated contact may result in ulceration.

Inhalation: Corrosive - toxic. Over exposure may result in mucous membrane irritation of the respiratory tract, coughing and possible burns. High level exposure may result in ulceration of the respiratory tract, breathing difficulties, chemical pneumonitis and pulmonary oedema (can be delayed up to 48 hours).

Chronic: No information available for this product.

12. ECOLOGICAL INFORMATION

Ecotoxicity: Avoid contaminating waterways. Very toxic to aquatic animals.

Persistence/Degradability: Miscible with water. Hypochlorites are non-persistent in the environment.

Bioaccumulative Potential: No accumulation potential as they gradually decompose into a salt and oxygen.

Mobility in Soil: Miscible with water May leach to groundwater with resultant toxicity to aquatic organisms.

Environmental Impact: May release toxic chlorine gas. Hypochlorites are extremely toxic to fish. LC₅₀ (fish) = 0.07 – 5.9 mg/L / 48h

13. DISPOSAL CONSIDERATIONS

Ensure waste disposal conforms to relevant local, state and federal authority waste disposal regulations.

Disposal Methods: Add to a large volume of reducing solution (eg thiosulphate, metabisulphite, but not carbon, sulphur or strong reducer) and acidify with 3M sulphuric acid. When reduction is complete, add mixture to water and neutralise. Absorb with sand or similar non-combustible material and dispose of to an approved landfill site. Dispose of all contained and neutralised spill residue in accordance with DEC requirements. Treat empty containers as filled containers as required under the ADG Code.

14. TRANSPORT INFORMATION

Classified as a Dangerous Goods by the criteria of the ADG Code for transport by road and rail.

UN No: 1791

Material Safety Data Sheet

Page 5 of 5 Issue date: August 2013

SODIUM HYPOCHLORITE SOLUTION

Class: 8 Corrosive

Packing Group: III

Proper Shipping Name: HYPOCHLORITE SOLUTION

Hazchem Code: 2X

Special Precautions for User: . Not to be loaded with explosives (Class 1), dangerous goods when wet substances (Class 4.4), oxidising agents (Class 5.1), organic peroxides (Class 5.2), radioactive substances (Class 7), or food and food packaging in any quantity, however exemptions may apply. Note that concentrated strong alkalis are incompatible with concentrated strong acids.

Dangerous Goods Initial Emergency Response Guide (SAA/SNZ HB76:2010): 37

15. REGULATORY INFORMATION

Poison Schedule Classified as a S5 product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

AICS All chemicals listed on the Australian Inventory of Chemical Substances.

Dangerous Goods Initial Emergency Response Guide (SAA/SNZ HB76:2010): 37

16. OTHER INFORMATION

Key / legend to abbreviations and acronyms used in the MSDS

ADG Australian Dangerous Goods

ASCC Australian Safety and Compensation Council

DEC Department of Environment and Conservation

IATA International Air Transport Association

IMDG International Maritime Dangerous Goods

NOHSC National Occupational Health and Safety Commission

SUSDP Standard for the Uniform Scheduling of Drugs and Poisons

TWA Time weighted average

STEL Short term exposure level

SWA Safe Work Australia

LD₅₀ Lethal dose 50. The single dose of a substance that causes the death of 50% of an animal population from exposure to the substance by any route other than inhalation

LC₅₀ Lethal concentration that kills 50% of an animal population within a specified time

TD Lo The lowest dose of a substance known to have produced signs of toxicity

mg/m³ Milligrams per cubic metre

mg/kg Milligrams per kilogram

pH Relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline

Literature references

Contact Points

Hurst scientific Pty Ltd

Telephone: (+61 8) 6254 2000

Facsimile: (+61 8) 6254 2559

Disclaimer

Hurst scientific Pty Ltd provides the information contained herein in good faith but makes no representation as to its' comprehensiveness or accuracy. A properly trained person using this product intends this document only as a guide to the appropriate precautionary handling of the material. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose. Hurst Scientific Pty Ltd makes no representations or warranties, either express or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, Hurst Scientific Pty Ltd will not be responsible for damages resulting from use of or reliance upon this information.