Material Safety Data Sheet

SODIUM HYPOCHLORITE SOLUTION

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Shivtek Industries Pvt. Ltd
Corp Off : Shiva House, 802-804, Pearls Best Heights Tower- II, Netaji Subhash Place , Delhi -110044
Factory : CH-1 &CH-2/C, GIDC Dahej, Tehsil- Vagra, Distt- Bharuch, Gujarat PIN-392130

Synonyms: Liquid pool chlorine, Liquid Bleach, Labarraque's Solution
Manufacturer's Product Code(s): SH-5L
Use: Used in hospital and pathology laboratories. Disinfectant

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	12-14%	7381-52-9
WATER	Balance	7732-18-5

4. FIRST AID MEASURES

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.

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

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^{o}C
Melting Point:	-25^{o}C
Evaporation Rate:	Not available
Flash Point:	Not applicable
Flammability Limits:	Not applicable
Specific Gravity:	1.17 – 1.22 @ 20^{o}C
Vapour Density (air=1):	Not available
Vapour Pressure:	17.5 mm Hg @ 20^{o}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 product 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 coumpounds such as amines and ammonium salts.

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

11. TOXICOLOGICAL INFORMATION

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. LD_{50} (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. LC_{50} (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

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.

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
LD_{50} 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
LC_{50} 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/m_3 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

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