

SAFETY DATA SHEET

PRODUCT NAME: POOL TREAT LIQUID CHLORINE

Issue Date: May 23

IDENTIFICATION

Product Name: Pool Treat Liquid Chlorine
Other Names: Liquid Chlorine, Bleach, Sodium Hypochlorite
Product Code: PT5, PT10, PT20, PT100
Uses: Dairy, food and beverage industries for sanitizing processing equipment. Textile industry as a bleaching agent. Water treatment as a sanitizing agent.
Supplier: HamChem Hamilton Chemicals Ltd, 75 Ruffell Rd, Hamilton
 Phone: 07 974 4971 Web: www.hamchem.nz Email: info@hamchem.nz

- In emergency dial 111, and then ask for Fire, Ambulance or Police as necessary.
- In case of poisoning phone National Poisons Centre – 0800 764 766

HAZARD IDENTIFICATION



GHS Classifications

Skin Corrosion – Category 1C
 Serious Eye Damage – Category 1
 Hazardous to the Aquatic Environment (Acute) - Category 1
 Hazardous to the Aquatic Environment (Chronic) – Category 1

Signal Word: DANGER

Hazard Statements:

H314 - Causes severe burns and eye damage.
 H318 – Causes serious eye damage.
 H410 – Very toxic to aquatic life with long lasting effects

Prevention:

P260 – Do not breathe dusts or mists.
 P280 – Wear protective gloves/clothing and eye/face protection
 P264 – Wash skin thoroughly after handling.
 P273 – Avoid release to the environment

Response:

P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 - IF ON SKIN (on hair): Take off immediately all contaminated clothing. Rinse skin with water.
 P363 - Wash contaminated clothing before reuse.
 P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
 P310 – Immediately call a POISON CENTRE or Doctor
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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P310 - Immediately call a POISON CENTRE or Doctor
P391 – Collect spillage

Disposal:

P501 - Dispose of contents/container to approved waste facility in accordance with local regulations

COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportion (%)
Water	7732-18-5	>60
Sodium Hypochlorite	7681-52-9	10-30
Chlorine	7782-50-5	

FIRST AID MEASURES

If swallowed: Do NOT induce vomiting. Wash/rinse out mouth thoroughly with water. Seek immediate medical attention.

If on skin: Remove/take off all contaminated clothing immediately. Wash/rinse skin gently and thoroughly with water/shower and non-abrasive soap for 15 minutes after handling. Ensure contaminated clothing is washed before re-use or discard. Seek immediate medical attention.

If inhaled: Remove affected person from contaminated area and keep at rest in a position comfortable for breathing. Seek medical attention. Apply artificial respiration if NOT breathing and immediately seek medical attention.

If in eyes: If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses, if present and easy to do. Continue flushing until advised to stop by the Poisons Information Centre or a Doctor, or for at least 15 minutes. Seek immediate medical attention.

Notes to Physician: Product is a solution of sodium hypochlorite. If swallowed, may lead to fall in blood pressure. Treat with antacids to neutralize hypochlorous acid formed in the stomach, then as for alkaline materials. Onset of pulmonary oedema, following inhalation overexposure, may be delayed. Treat symptomatically. Contact Poisons Information Centre.

No adverse health effects expected if the product is handled in accordance with this SDS and the product label.

FIRE FIGHTING MEASURES

Extinguishing Media: Carbon dioxide, dry chemical, foam, water fog or water mist. Do NOT use water jet.

Specific Hazards: This product is non-combustible. However, following evaporation of aqueous components under fire conditions, the non-aqueous component may decompose and/or burn. Under fire conditions this product may emit toxic and/or irritating fumes and gases, chlorine, water vapour, sodium hydroxide, sodium carbonate, sodium chloride.

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

ACCIDENTAL RELEASE MEASURES

Evacuate all unprotected personnel. Do not allow contact with skin and eyes. Do not breathe mist/vapour. As a water-based product, if spilt on electrical equipment the product will cause short-circuits. It is essential to wear self-contained breathing apparatus (SCBA) and full personal protective equipment and clothing to prevent exposure. Avoid exposure to spillage by collecting the material using vacuum and transfer into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to applicable

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local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

HANDLING & STORAGE

Procedure for Handling: Corrosive liquid. Attacks skin and eyes. Causes burns. Avoid breathing in vapours, mists or fumes. Wear suitable protective clothing, gloves and eye/face protection when mixing and using. Use in designated areas with adequate ventilation. Keep containers tightly closed. Ensure a high level of personal hygiene is maintained when using this product, that is, always wash hands after handling, and before eating, drinking, smoking or using the toilet facilities.

Suitable Container: Liquid inorganic hypochlorites shall not to be transported in unlined metal drums. Inner packaging shall be fitted with vented closures and plastics drums and carboys shall have vented closures or be performance tested to a minimum of 250 kPa. Glass container is suitable for laboratory quantities. Lined metal can, lined metal pail/can. Plastic pail. Poly-liner drum. Packing as recommended by manufacturer. For low viscosity materials: Drums and jerry cans must be of the non-removable head type. Where a can is to be used as an inner package, the can must have a screwed enclosure.

Storage Incompatibility: Contact with acids produces toxic fumes. Presence of rust (iron oxide) or other metal oxides catalyzes decomposition of inorganic hypochlorites. Contact with water can cause heating and decomposition giving off chlorine and oxygen gases. Solid hypochlorites in contact with water or moisture may generate sufficient heat to ignite combustible materials. Thermal decomposition can be sustained in the absence of oxygen. Contact with acids produces toxic fumes of chlorine. Bottles of strong sodium hypochlorite solution (10-14% available chlorine) burst in storage due to failure of the cap designed to vent oxygen slowly during storage. A hot summer may have exacerbated the situation. Vented caps should be checked regularly (using full personal protection) and hypochlorites should not be stored in direct sunlight or at temperatures exceeding 18°C. Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous. Avoid storage with reducing agents.

Storage Requirements: Corrosive liquid. Store in a cool, dry, well-ventilated area. Protect from freezing. Store away from oxidising agents and gases/acids. Keep containers closed when not in use, securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Provide a catch-tank in a bunded area. Store in original packaging as approved by manufacturer. Ensure that storage conditions comply with applicable local and national regulations.

EXPOSURE CONTROLS & PERSONAL PROTECTION
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Exposure Standards: Chlorine: WES – TWA 0.5ppm, 1.5mg/m³; WES – STEL 1ppm, 2.9mg/m³

Material Data: For chlorine: Odour Threshold Value: 0.08ppm (detection) – olfactory fatigue may develop
NOTE: Detector tubes for chlorine, measuring in excess of 0.2ppm, are commercially available. Long-term measurements (8 hrs) may be conducted to detect concentrations exceeding 0.13ppm.

SODIUM HYPOCHLORITE: Available chlorine, as chlorine TLV TWA: 0.5ppm, 1.5 mg/m³; STEL: 1 ppm, 2.9 mg/m³ ES Peak: 1 ppm, 3 mg/m³ CEL TWA: 2 mg/m³ (compare WEEL TWA) The odour threshold is likely to be similar to that of chlorine, 0.3 ppm.

Acute, sub chronic, and chronic toxicity studies have shown no significant treatment related effects. High concentrations may produce moderate to severe eye irritation, but not permanent injury. High doses also appear to be embryo toxic. Since nearly all sodium hypochlorite is handled as aqueous solution, airborne exposure is likely to be as an aerosol, or mist. Sodium hypochlorite dissociates in water to form free hypochlorous acid in equilibrium. The toxic effects are likely to be similar to those of chlorine or sodium hydroxide.

Personal Protection: Gloves, overalls, goggles, full face shield.

Respirator: Type B-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent).

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Eye: Chemical goggles. Full face shield may be required for supplementary but never for primary protection of eyes. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation – lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NSZ 1336 or national equivalent].

Hands/Feet: Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber. When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. NOTE: The material may produce skin sensitization in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. Contaminated leather items, such as shoes, belts, and watch-bands should be removed and destroyed. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Suitability and durability of glove type is dependent on usage.

Other: Overalls. PVC apron. PVC protective suit may be required if exposure severe. Eyewash unit.

Engineering Controls: CARE: Use of a quantity of this material in confined space or poorly ventilated area, where rapid buildup of concentrated atmosphere may occur, could require increased ventilation and/or protective gear. Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard physically away from the worker and ventilation that strategically “adds” and “removes” air in the work environment.

PHYSICAL & CHEMICAL PROPERTIES

Appearance: CORROSIVE and Oxidising Agent. Pale yellow or greenish liquid with chlorine odour; mixes with water. Freezing point 12% approx minus 25°C. Evolves very poisonous and corrosive chlorine gas on contact with acids and is mildly corrosive to most metals. Evolves oxygen and chlorine on heating. Commercial grades have 3-14% available chlorine. All grades over 5% available chlorine are Dangerous Goods, with 5-16% available chlorine as Packing Group III; and more than 16% available chlorine – Packing Group II. Items with 4% or less are not a scheduled poison.

Physical properties:

Liquid. Mixes with water. Corrosive. Contact with acids liberates toxic gas.

Odour:	Slight Chlorine.
Specific Gravity:	1.15 -1.2 @ 20°C
Solubility in water:	Miscible in water.
Flash point:	N/A
Flammability limits:	N/A
Boiling point:	N/A
Melting point:	N/A
pH (1% solution):	9.5 – 10.5 (1% w/w)
pH (as supplied):	10-11
Vapour pressure (kPa):	2.4 @ 20°C

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STABILITY & REACTIVITY

Chemical Stability: Stable under normal conditions of storage and handling.

Incompatible Materials: Incompatible with acids, metals, metal salts, reducing agents, peroxides and ethylene diamine tetra acetic acid.

Conditions to Avoid: Extremes of temperature and direct sun light.

Hazardous Decomposition Products: Decomposes on heating to emit toxic fumes. Heating can cause expansion of containers or decomposition leading to violent rupture of containers. Reacts vigorously with acids to produce dangerous levels of gaseous chlorine. Reacts with amines, ammonium salts, aziridine, methanol, phenylacetone nitrile, metal salts, peroxides and reducing agents.

Possibility of Hazardous Reactions: Contact with combustible material may cause fire. Contact with acids will generate chlorine, a toxic and corrosive gas. May react violently with reducing agents. Can react with primary aliphatic and aromatic amines, methanol and nitrites to give explosive products. May react vigorously with oxidising agents. Incompatible with most metals. Will decompose on standing, generating chlorine. Decomposition will be accelerated by contamination and by exposure to sun light. May react vigorously with peroxides and metal salts. On long storage, may generate pressure inside sealed containers.

Hazardous Polymerization: No information available.

TOXICOLOGICAL INFORMATION

Toxicity data:

Oral: LC₅₀ (mice): 5800mg/kg. Eyes: Moderate irritant (rabbit)

ACUTE HEALTH EFFECTS

Swallowed: The material can produce 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 hypochlorites may cause burning in the mouth and throat, abdominal cramps, nausea, vomiting, diarrhea, pain and inflammation of the mouth and stomach, fall of blood pressure, shock, confusion and delirium. Severe poisonings may lead to convulsion, coma and death.

Eye: The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. If applied to the eyes, this material causes severe eye damage. Eye contact with a 5% hypochlorite solution may produce a temporary burning discomfort and slight irritation of the corneal epithelium with no injury. 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 sensation of stinging, smarting of eyes with transient reddening may occur but generally no injury.

Skin: The material can produce chemical burns following direct contact with the skin. Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Skin contact will result in rapid drying, bleaching, and lead to chemical burns on prolonged contact. Contact may cause severe itchiness, skin lesions and mild eczema. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systematic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.

Inhaled: Not normally a hazard due to non-volatile nature of product. Chlorine vapour is extremely irritating to the airways and lungs, causing coughing, choking, breathing difficulty, chest pain, headache, vomiting, fluid accumulation in the lungs, chest infection and loss of consciousness. Effects may be delayed. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. The use of a quantity of material in an unventilated or confined space may result in

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increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.

Chronic Health Effects: Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There is limited evidence that skin contact with this product is more likely to cause a sensitization reaction in some persons compared to the general population. Reduced respiratory capacity may result from chronic low-level exposure to chlorine gas. Chronic poisoning may result in coughing, severe chest pains, sore throat and haemoptysis (bloody sputum). Delayed effects can include shortness of breath, violent headaches, pulmonary oedema and pneumonia.

Toxicity and irritation: Hypochlorite salts are classified by IARC as Group 3; NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, and the production of vesicles, scaling and thickening of the skin. Hypochlorite salts are extremely corrosive and can cause severe damage to the eyes and skin. A number of skin cancers have been observed in mice, when applied to their skin.

ECOLOGICAL INFORMATION

Ecotoxicity (Aquatic & Terrestrial): LC₅₀ (fish): 0.07 – 5.9mg/L 48hr. Expected to be harmful to terrestrial species.

Persistence & Degradability: Biodegradable.

Mobility: No data available

Bio Accumulative Potential: No data available

Other Adverse Effects: No data available

Environmental Protection: Prevent large amounts from entering waterways, drains and sewers.

DISPOSAL CONSIDERATIONS

Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible. Otherwise: If container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. Where possible retain label warnings and SDS and observe all notices pertaining to the product. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.

A Hierarchy of Controls seems to be common - the user should investigate: Reduction. DO NOT allow wash water from cleaning or process equipment to enter drains. It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority. Recycle wherever possible. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. Treat and neutralise at an approved treatment plant. Treatment should involve: Neutralisation followed by: burial in a

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landfill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material) Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed. *Ensure that the disposal of material is carried out in accordance with Hazardous Substances (Disposal) Regulations 2001*

TRANSPORT INFORMATION

UN Number:	1791
Proper Shipping name:	Hypochlorite Solution
Dangerous Goods Class:	8 - Corrosive
Packing group:	III
Hazchem Code:	2X

REGULATORY INFORMATION

HSNO Classifications: 8.2C, 8.3A, 9.1A

EPA Approval Number: HSR002681 – Water Treatment Chemicals (Corrosive) Group Standard 2020

OTHER INFORMATION

End of SDS.