	SODIUM HYPOCHLORITE – CORROSIVE LIQUID	CI 032
	COSHH Information	Date: November 2017 Review: October 2022

Name	Sodium hypochlorite, NaClO Sodium Hypochlorite is delivered to site in bulk by tankers or IBC's as a 10 – 15% solution for use in the chlorination process on clean water sites and odor control on waste water sites.
Workplace Exposure Limit	No WEL has been set for Sodium Hypochlorite, but 2 $mg.m^{-3}$ (8 hr TWA) is probably appropriate. Chlorine 1.5mg/m^3 STEL
Physical Properties	Physical State: Liquid Colour: Yellow green Odour: Of Chlorine Boiling Point: 100°C 13-16% solution Melting Point: -30°C to -20°C 13-16% solution Solubility Completely: Soluble pH: >11 Viscosity: 3.45 cP @20°C

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Hazard	 Corrosive	**Hazard Statements:** H314 Causes severe skin burns and eye damage H290 May be corrosive to metals EUH031 Contact with acids liberates toxic gas. **Precautionary Statements:** P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P304+P310 If exposed or concerned Immediately call a POISON CENTER/doctor. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Sodium hypochlorite is an irritant and corrosive agent causing burns, attacking the eyes, nose and throat. Problems with inhalation of the material are uncommon unless sprayed or used in a confined space. The product is not completely stable and gradually loses Chlorine during storage. With acids it produces Chlorine gas. It will also react violently with Ammonium salts, Amines, Methanol and with oxidising materials.
Environmental Information	. Dangerous for the Environment	**Hazard Statements:** H410 Very toxic to aquatic life with long lasting effects. **Precautionary Statements:** P273 Avoid release to the environment. Product is rated as very toxic to aquatic species. Product is fully soluble in water. If product enters the ground it will be mobile and may contaminate groundwater. Product will degrade rapidly in soil or water Product is toxic to all aquatic organisms. Biological treatment processes generally remove the product. It may adversely affect aerobic treatment processes. Segregate and dispose of waste substance as hazardous waste. Contain spillage and prevent contamination of controlled watercourses (including groundwater).

PPE	 	Thames Water minimum standards for PPE can be found in HSP 18 Personal Protective Equipment and must be complied with. Additional specific requirements for working directly with this substance are listed below: PVC chemical resistant overalls. Goggles. PVC heavy duty gloves. Wellington boots. PPE and further information, including constraints can be obtained from the Liscombes/TW intranet site on SAP.
Work Procedures	To ensure that Sodium Hypochlorite is safe to use, an effective Safe System of Work must be established, fully documented and implemented by means of appropriate training and supervision. It is the responsibility of the local manager to ensure a Safe System of Work is in place, regularly reviewed and properly implemented for the safe use of Sodium Hypochlorite. The Safe System of Work must specifically address the local process, identifying the necessary controls and precautions including maintenance, delivery, storage, transfer and use, spillage procedure and training and maintenance of training records. The Safe System of Work, along with this generic assessment, constitutes the local COSHH Assessment and should be available as such. Normally, the Sodium Hypochlorite is handled in a totally enclosed system and there is no potential for exposure to the product. During maintenance on the system and for routine handling and transfer operations, goggles, impervious PVC gloves and rubber boots are worn together with overalls resistant to Sodium Hypochlorite solutions must be worn.	
First Aid	**Eyes**	Wash with copious amounts of tepid water for 15 mins. **Obtain medical attention**.
	Skin	Wash with copious amounts of water for 15 minutes, remove contaminated clothing and wash before re-use. **Obtain medical attention.**
	Inhalation	Remove from exposure, keep warm and at rest. **Obtain medical attention**.
	Ingestion	Wash out mouth with water. Give plenty of water to drink. Do not induce vomiting. **Obtain medical attention**.

Storage 	• Strong oxidant. • May evolve toxic fumes in fire. • Liberates chlorine in contact with acids. • Avoid contact with oxidisers and acids. • Contain spillage and prevent escape of spill to watercourse. Tank Labels
Transport Information Class - 8 Packing Group - II Tunnel Restriction-E	This substance is covered by the Transport of Dangerous Goods Regulations. Above 60L the full regulations apply and must be transported on the road by individuals who hold an ADR licence, in containers or tanks and a vehicle specifically marked and designed for transport. This must be accompanied by instructions in writing that define emergency arrangements, ppe and equipment to be carried. IBC's used to transport Sodium Hypochlorite must be specifically marked, in date and a record of inspection kept. This substance may not be transported through the Rotherhithe, Limehouse Link or Blackwall tunnels Limited Quantities exemption of Regulations apply to the carriage of 1 L containers providing: • The containers are UN approved, marked UN 1791 and labelled with the corrosive and environmental diamonds. • Driver awareness training • A 2 kg fire extinguisher is carried on the vehicle • The containers are securely stored to prevent damage or loss. • Measures to deal with accidental spillage are defined
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Upper Tier Limit	Lower Tier Limit	Hazard Groups
200 Tonnes	100 Tonnes	Environmental – E1 – Hazardous to the Aquatic Environment in Category Acute 1 or Chronic1

Limitations of Applicability:

This assessment assumes that the sodium hypochlorite is generally handled in a totally enclosed system.

Substitutes:

Sodium Hypochlorite is a safer substitute for chlorine.

Conclusion:

Sodium Hypochlorite is corrosive and is used within enclosed systems. Where spillage can occur during maintenance, protective equipment is used and the spill contained.

The product is considered safe for use in Thames Water operations.

The above statement is only valid when all local requirements associated with this assessment are in place.