

**1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER****Product Name** *Sodium Hypochlorite 13%/Pool Chlorine***Other Names** Hypochlorite Solution**Company Name** Aurora Cleaning Supplies Pty Ltd**Address** Factory 1, 5 Bungaleen Court, Dandenong South, Victoria.**Tel/Email** Tel: 03 9768 2669 Email: office@auroracleaning.com.au**Recommended use** Dairy, food and beverage industries: Sanitising processing equipment. Textile industry: Bleaching agent. Water treatment: Sanitising agent**Other Information** This MSDS summarises to the best of our knowledge, the health and safety hazard information of the product and how to safely handle and use the product in the work place.**Emergency Contact Details** Poisons Information Centre 131126**2. HAZARD IDENTIFICATION****Poisons Schedule (Aust)** 6**Hazard Classification** Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)**Hazard Categories** Skin Corrosion/Irritation - Category 1B Serious Eye Damage/Irritation - Category 1 Acute Hazard To The Aquatic Environment - Category 1**Signal Word** Danger**Hazard Statements** EUH031 Contact with acids liberates toxic gas. H314 Causes severe skin burns and eye damage. H400 Very toxic to aquatic life.**Precautionary Statements** Prevention P273 Avoid release to the environment. P264 Wash exposed skin thoroughly after handling. P260 Do not breathe fume/gas/mist/vapours/spray. P280 Wear protective gloves/protective clothing/eye protection. Response P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. 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 or doctor/physician. P390 Absorb spillage to prevent material damage. P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P363 Wash contaminated clothing before reuse. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P321 Specific treatment (see First Aid Measures on Safety Data Sheet). Storage P405 Store locked up. Disposal P501 Dispose of contents/container in accordance with local / regional / national / international regulations.**3. COMPOSITION/INFORMATION ON INGREDIENTS****Information on Name CAS Proportion**

Sodium Hydroxide HNaO 1310-73-2 0.7 - 2.0 %

Sodium Hypochlorite ClHO.Na 7681-52-9 13 %

Water 7732-18-5 Balance %

**4. FIRST AID MEASURES****Swallowed** Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupful's of water. Get medical aid immediately.**Eye** Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Seek immediate medical attention.**Skin** Remove contaminated clothing. Wash affected area with plenty of flowing clean water for at least 15 minutes. Seek immediate medical attention. Wash clothing before reuse. If burned, treat as burn by acid.**Inhaled** Remove victim from exposure to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. DO NOT use mouth-to-mouth respiration. Seek immediate medical advice.**Advice to Doctor** Symptoms caused by exposure: Chlorine gas released from sodium hypochlorite causes irritation of respiratory system, consisting in coughing, difficult breathing, stomatitis, nausea and pulmonary edema. Contact with skin can cause skin irritation, followed by blisters and eczema (especially at 13% concentration). The eye contact causes serious damages of eyes. Ingestion of tens of grams of sodium hypochlorite solution (13% concentration) can cause mucous membrane burns, perforation of the oesophagus and stomach, and laryngeal oedema. Medical Attention and Special Treatment: In case of eyes and face splashing, treat eyes firstly. Treat symptomatically and supportively.**5. FIRE FIGHTING MEASURES****Flammability Conditions** Not considered to be a fire hazard. Sodium hypochlorite itself does not burn, but poisonous gases are produced in fire.**Extinguishing Media** Suitable Extinguishing Media: Water. Use water spray to cool fire-exposed containers, to dilute liquid, and control vapour.**Fire and Explosion Hazard** Contact with combustible materials can cause explosions. Hazchem Code: 2X**Hazardous Products of Combustion** Emits toxic fumes of chlorine (hypochlorous acid and sodium chlorate) when heated to decomposition. The decomposition is an exothermal process.**Personal Protective Equipment** Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves) or chemical splash suit. Please note: Structural fire fighters uniform will provide limited protection.**Hazchem Code** 2X**No other Data Available****6. ACCIDENTAL RELEASE MEASURES****General Response Procedure** Emergency procedures, Evacuate the danger area or to consult an expert. Approach from upwind. Isolate the area. Wear self-contained breathing apparatus in confined spaces, in cases where the oxygen level is depleted, or in case of significant emissions. Prevent further leakage or spillage if safe to do so. Keep away from incompatible products.**Clean Up Procedures** Spills/Leaks: The spills can be neutralized using light reducing agents such as sodium sulphite sodium bisulphite or sodium thiosulphate. Do not use sulphates or bi-sulphate. Contain and recover when is possible.**Decontamination** Special precautions: Do not use combustible materials, such as saw dust! Do not use sulphates or bisulphates for spill neutralizing! Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority.**7. HANDLING AND STORAGE**

**Handling** Protect against physical damage. Personnel which handling the product must wear protective equipment for hand, skin or eyes, and including protective breathing apparatus. Area should be well ventilated. Advice on general occupational hygiene: Avoid inhalation or ingestion and contact with skin and eyes. General occupational hygiene measures are required to ensure safe handling of the substance. Chemicals should be used only by those trained in handling potentially hazardous materials. The electrical equipment should be corrosion resistant.

**Storage** Keep in tightly closed containers, store in a cool, dry, well ventilated area. Isolate from incompatible substances. The aqueous solutions are sensitive to light and air. Avoid storage for long period because the product degrades over time. The recommended storing temperature is 15-25 C. Storage at 15 C reduces the rate of decomposition. This product has a UN classification of 1791 and a Dangerous Goods Class 8 (Corrosive) according to The Australian Code for the Transport of Dangerous goods By Road and Rail.

**Container** polyethylene; 5-7 years life time. The outdoor tanks will be UV proof. Incompatible materials: reducing agents, combustible materials (wood, cellulose), organic materials, metals, acids. Materials to avoid: carbon steel, stainless steel, copper and its alloys, aluminium, unprotected metals.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**General HSI** Airborne Exposure Limits: Chlorine: TWA 1 ppm (3 mg/m<sup>3</sup> peak limitation)

NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. Peak limitation is a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes. These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity

**Exposure Limits** No Data Available

**Biological Limits** No information available on biological limit values for this product.

**Engineering Measures** These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

**Personal Protection Equipment** RESPIRATOR: Self-contained breathing apparatus with full face-piece operated in the pressure demand. For emergencies or instances where exposure levels are not known, use a full face piece positive pressure, air supplied respirator. Warning! Air - purifying respirators do not protect workers in oxygen deficient atmospheres (AS1715/1716). EYES: Chemical splash goggles and/or face shield must be worn when possibility exist for eye contact due to splashing or spraying liquid or vapour (AS1336/1337). HANDS: Wear PVC, rubber or neoprene gloves. Glove thickness has to be of minimum 1.2 mm. Do not use leather gloves (AS2161). CLOTHING: Wear impervious protective clothing including boots, lab coat, apron or coveralls and safety footwear (AS3765/2210).

**Work Hygienic Practices** Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical State** Liquid

**Appearance** Liquid

**Odour** Chlorine odour

**Colour** Clear, pale yellow

**No other data available**

## 10. STABILITY AND REACTIVITY

**General Information** Reactivity: Reacts violently with acids with chlorine released. Possibility of Hazardous Reactions: Sodium hypochlorite is extremely corrosive for aluminium, brass. Reacts with metals (nickel, cooper, tin) with oxygen release, with ammonia urea, oxidisable substances, ammonium nitrate, ammonium oxalate, ammonium phosphate, ammonium acetate, ammonium carbonate, cellulose and methanol.

**Chemical Stability** Unstable. Stability decreases with concentration, heat, light exposure, decrease in pH and contamination with heavy metals, such as nickel, cobalt, copper and iron. In practice, a factor of 2 decreases in concentration produces nearly a factor of 5 decreases in decomposition rate at any given temperature with a pH range of approximately 11 to 13. At pH<11, sodium hypochlorite is unstable and decomposes with the release of chlorine.

**Conditions to Avoid** Light, heat and incompatibles.

**Materials to Avoid** Incompatible materials and possible hazardous reactions: aluminium, brass, cellulose, steel, stainless steel, bronzes. Strong acids, strong oxidizers, heavy metals (which act as catalysts), reducing agents, ammonia and ammonium salts, ether, and many organic and inorganic chemicals such as paint, kerosene, paint thinners, shellac.

**Hazardous Decomposition Products** Emits toxic fumes of chlorine (hypochlorous acid and sodium chlorate) when heated to decomposition. The decomposition is an exothermal process.

**Hazardous Polymerisation** Sodium hypochlorite is extremely corrosive for aluminium, brass. Reacts with metals (nickel, cooper, tin) with oxygen release, with ammonia, urea, oxidisable substances, ammonium nitrate, ammonium oxalate, ammonium phosphate, ammonium acetate, ammonium carbonate, cellulose and methanol.

## 11. TOXICOLOGICAL INFORMATION

**General Information** Acute toxicity: Sodium Hypochlorite: Rat male Oral LD50 = 1100 mg/kg bw (for sodium hypochlorite sol.. 12% free chlorine). Mouse male Oral LD50, = 880 mg/kg bw (for sodium hypochlorite sol.. 12% free chlorine). Other routes : intra-peritoneal Rat LD 50, (1h) > 10,7 mg/L air, causes abundant tearing. Rabbit male/female LD50, >20 g/kg bw. Causes serious skin irritation. Mouse LD= 240-250mg/kg bw, Guinea pig LD: 63 mg/kg bw. Repeated dose toxicity: Oral NOAEL: 50 mg/kg bw/day

Respiratory or skin sensitisation: Not sensitising Germ cell mutagenicity: No genetic toxicity effects Carcinogenicity: No carcinogenic potential Reproductive toxicity: Sodium hypochlorite has no genotoxic potential, therefore no classification is required according to 67/548/EEC and 1272/2008/EC (CLP) requirements. Information on Possible routes of exposure: Ingestion, Inhalation, Skin/ eye exposure. Interactive Effects: Sodium hypochlorite reacts rapidly with the organic molecules and cellular components, forming organic chlorinated compounds which have their own toxicity (BIBRA 1990)

**Eye Irritant** Causes eye damage. Eye damage, category 1. Eye contact causes serious burns and discomfort.

**Ingestion** Causes severe pain, nausea, vomiting, diarrhoea, and shock. May cause haemorrhaging of the digestive tract. May cause corrosion and permanent tissue destruction of the oesophagus and digestive tract. May be harmful if swallowed.

**Inhalation** Irritant. Inhalation of sprayed solution and vapours can cause respiratory system irritation caught, difficulty of breathing, stomatitis, nausea and pulmonary edema. Classified as STOT Single Exposure 3.

**Skin Irritant** Light irritant at low concentrations. Moderate irritant at medium concentrations (>5%). Corrosive at concentration higher than 10%. Skin corrosive category 1B.

**Carcinogen Category** No Data Available

**12. ECOLOGICAL INFORMATION** Aquatic Toxicity Tests demonstrate NOEC (7 days)= 0,0021 mg/L. Factor M=10. Short-term toxicity to invertebrates (molluscs, Daphnia magna, Ceriodaphnia dubia) - Fresh water: EC50/LC50 =0,141 mg/L - Marine water: EC50/LC50 =0.026

mg/L Long-term toxicity to invertebrates - Marine water: LC100 (36days) 0,005mg/L - NOEC for aquatic invertebrates = 0.007 mg/L Short-term toxicity to fish - Fresh water LC 50 =0,06 mg/l - Marine water LC 50= 0.032 mg/l Long-term toxicity to fish - Marine water: NOEC= 0,04 mg CPO/L Short-term toxicity to algae and aquatic plants: Not applicable , sodium hypochlorite decomposes rapidly . Long-term toxicity to algae and aquatic plants - Fresh water EC50/LC50=0,1 mg/l - Marine water EC10/LC10 or NOEC =0,02 mg/L PNEC (Predicted No Effect Concentration) PNEC fresh water = Minimum long-term aquatic toxicity/10 = 0.21 • HPNEC marine water = Minimum long-term aquatic toxicity /50 = 0.042 • HToxicity to sediment micro-organisms There are not predicted exposures due the fact that sodium hypochlorite is destroyed quickly by oxy-reduction. Sodium hypochlorite cannot exist in presence of organic carbon. PNEC=0 fresh water sediment / marine water sediment. Terrestrial toxicity Short/long -term toxicity to terrestrial invertebrates Substance is not absorbed in soil and is not persistent in soil. TD50<1 min, PEC/PNEC soil<1. Toxicity to soil micro-organisms Short/long term toxicity to plants Due the fact that PEC/PNEC for terrestrial toxicity is <1 and at contact with soil hypochlorite dissipates quickly (TD50 <1 min) there is not estimated short/long toxicity to plants. In accordance with column 2 of REACH Annexes IX and X, there is no need to further investigate the effects of the substance on plants. Long-term toxicity to birds EC10/LC10 or NOEC on long term : 200 mg/kg food

**Persistence/Degradability** Biotic: The inorganic water cannot be tested for biodegradability. Abiotic: Hypochlorite degrades quickly during the transport through sewage system. Photo-transforming (Photolysis) Atmospheric degradation: At medium pH (6, 5-8, 5) value, half of sodium hypochlorite is present as hypochlorous acid and the other half is dissociate as hypochlorite ions. In the atmosphere, hypochlorous acid degrades, generating atomic chlorine, which is destroyed by UV radiation. The half-life is 115 days. Does not react with ozone layer. Photolysis in water Half-life for sodium hypochlorite solution, active chlorine 12-15%, at 25°C is 220 days. In presence of light, the half-life decreases 3-4 times. The UV radiation decomposes the hypochlorite, generating chlorate, chlorite and oxygen:  $3 \text{ ClO}^- \Rightarrow \text{ClO}_3^- + 2 \text{ Cl}^-$  (1)  $2 \text{ ClO}^- \Rightarrow 2 \text{ Cl}^- + \text{O}_2$  (2) In water, under photolysis, sodium hypochlorite with concentration of 13-18 mg/L, has a half-life of 12 min. at pH =8 . This increases up to 60 min. with pH decreasing

**Environmental Fate** Do NOT let product reach waterways, drains and sewers.

### 13. DISPOSAL CONSIDERATIONS

Dispose of at approved disposal sites. Follow local regulations.

### 14. TRANSPORT INFORMATION

**Land Transport (Australia) ADG Proper Shipping Name** HYPOCHLORITE SOLUTION

**Class** 8 Corrosive Substances **Subsidiary Risk(s)** No Data Available

**EPG** 37 Toxic And/Or Corrosive Substances Non-Combustible **UN Number** 1791

**Hazchem** 2X **Pack Group** III **Special Provision** No Data Available

### 15. REGULATORY INFORMATION

**Poisons Schedule (Aust)** 6

### 16. OTHER INFORMATION

In case of poisoning call the Poison Information Centre, phone 131 126.

This MSDS summarises to the best of our knowledge the health and safety hazard information of the product and how to safely handle and use the product in the workplace.

... End of MSDS. ...