SECTION 1 – PRODUCT IDENTIFICATION

Trade Name: CHLORINE
Distributor: Cargroomers Queensland Pty Ltd
Emergency Phone No: (07) 3807 7577
Regular Phone No: (07) 3807 7577
Address: 10 Binary Street YATALA QLD 4207

SECTION 2 – HAZARDS IDENTIFICATION

Classification: This material is classified as hazardous according to criteria of NOHSC.
UN No: 1017
CLASS: 2.3 Toxic Gas
SUB-RISK 8 Corrosive
Risk Phrase(s): R23: Toxic by inhalation.
R36/37/38: Irritating to eyes, respiratory system and skin.
R50: Very toxic to aquatic organisms.
Safety Phrase(s): S7/9: Keep container tightly closed and in a well ventilated place.
S23: Do not breathe vapour/mist.
S24/25: Avoid contact with skin and eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).
S61: Avoid release to the environment. Refer to special instructions safety data sheets.

SECTION 3 – INGREDIENTS

MATERIAL/COMPONENT Wt% CAS NUMBER
Chlorine >99.9% 7782-50-5

SECTION 4 -EMERGENCY AND FIRST AID PROCEDURES

Ingestion: Immediately rinse mouth with water. Give water to drink. Do NOT induce vomiting. Seek immediate medical assistance.
Eye contact: Immediately irrigate with copious quantities of water until advised to stop by Poisons Information Centre or a doctor, or for at least 15 mintues. Eyelids to be held open. Remove clothing if contaminated and wash skin. Seek immediate medical assistance.
Skin contact: Immediately wash contaminated skin and hair with plenty of running water. Remove contaminated clothing and wash before re-use. If swelling, redness, blistering, or irritation occurs seek medical advice.
Inhalation: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek medical advice if effects persist.
Swallowed: Do not induce vomiting. Give a glass of water. Seek Medical Advice.
Notes to physician: Treat symptomatically. Do not use acid antidotes in the treatment of sodium hypochlorite poisoning. Sodium thiosulphate immediately reduces hypochlorite to non-toxic products but may produce hydrogen.
sulphide in contact with acid. Show this Material Safety Data Sheet to the Medical Practitioner. Effects may be delayed. Delayed pulmonary oedema may result.

SECTION 5 – FIRE AND EXPLOSION DATA

- **Flash Point:** Not applicable
- **Method:** Not applicable
- **Flammability Limits in Air (% Volume):**
  - **Lower:** Not applicable
  - **Upper:** Not applicable
- **Specific hazards:** Non combustible, but will support combustion of other materials.
- **Fire fighting further advice:** Not combustible, however will support the combustion of other materials. If safe to do so, remove containers from path of fire. Keep containers cool with water spray. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure.
- **Suitable extinguishing media:** Not combustible, however, if material is involved in a fire use: Water fog (or if unavailable fine water spray), foam, dry agent (carbon dioxide, dry chemical powder).

SECTION 6 – ACCIDENTAL RELEASE MEASURES

- **SMALL SPILLS:** Avoid breathing in vapours. Work up wind or increase ventilation. Allow liquid to evaporate.
- **LARGE SPILLS:** For gas leak, DO NOT spray water directly on the leak or chlorine container. Use fire hoses equipped with fog nozzles to disperse gas downwind. For liquid: Clear area of all unprotected personnel. Avoid breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). For large spills notify the Emergency Services.
- **Waste Disposal:** Refer to State Land Waste Management Authority. Do not dump large quantities into biological treatment ponds.

SECTION 7 HANDLING AND STORAGE

- **Handling & Storage:** Avoid skin and eye contact or breathing in vapour. Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from foodstuffs. Keep containers upright. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for spills.
- **Other:** This material is a Scheduled Poison S7 and must be stored, maintained and used in accordance with the relevant regulations.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

- **Exposure Limits:** No value assigned for this specific material by the National Occupational Health and Safety Commission. However, Sodium Hypochlorite decomposes to chlorine after strong acidification. Exposure Standards for decomposition product:
  - Chlorine 1 ppm; 3 mg/m3; Peak Limitation as published by the National Occupational Health and Safety Commission (Worksafe Australia).
  - Peak Limitation - 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.
- **Engineering Measures:** Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. If inhalation risk exists: Use with local exhaust ventilation or while wearing air supplied mask. Vapour heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected.
Personal protection: Overalls, Safety Shoes, Chemical Goggles, Gloves (S), Face Shield or Air Mask.

Wear overalls, full face shield, elbow-length impervious gloves. Use with adequate ventilation. If inhalation risk exists, wear air-supplied mask meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

Avoid eye contact and repeated or prolonged skin contact. Wear overalls, chemical goggles and impervious gloves. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

### SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point (C)</td>
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</tr>
<tr>
<td>Melting Point (C)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
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</tr>
<tr>
<td>Sol in Water (g/l)</td>
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<tr>
<td>Appearance</td>
<td>Clear yellow liquid</td>
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<tr>
<td>Volatiles</td>
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<td>VAP Density</td>
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<tr>
<td>pH at Use Dilution</td>
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<tr>
<td>pH</td>
<td>12.5-13.5 @ 20°C</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### SECTION 10 – STABILITY AND REACTIVITY DATA

Stability: Stable under normal conditions. This product is an oxidising agent. Reacts vigorously with acids producing toxic chlorine gas. Contamination of solution and exposure to light or heat will accelerate decomposition. Incompatible with most metals. Will react with peroxides, metal salts and reducing agents.

Conditions to avoid: Common metals, acids, peroxides & reducing agents.

Incompatibilities: Common metals, acids, peroxides & reducing agents.

Hazardous decomposition products: Toxic chlorine gas, toxic fumes of nitrogen oxides, carbon dioxide on combustion or oxidation.

Hazardous polymerisation: Will not occur.

Reacts violently with many organic chemicals (eg. mineral oils, greases), silicones, and finely divided metals. Forms explosive mixtures with alcohols, glycols, ammonia and its compounds, and hydrogen over a wide range of concentrations. Corrosive in the presence of moisture.

### SECTION 11 - TOXICOLOGICAL INFORMATION

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

#### HEALTH EFFECTS

- **Ingestion:** Swallowing can result in severe irritation and corrosion of the mucous membranes of the mouth, throat and gastrointestinal tract with pain, inflammation and vomiting. Systemic effects include fall of blood pressure, delirium and coma.
- **Eye contact:** An eye irritant. Contamination of the eyes can result in permanent injury. Liquid splashes or spray may cause freeze burns to the eye.
- **Skin contact:** Repeated or prolonged skin contact may lead to irritant contact dermatitis or skin burns. Liquid splashes or spray may cause freeze burns.
- **Inhalation:** Where this material is used in a poorly ventilated area or at elevated temperatures or confined spaces, vapour may cause irritation to mucous membranes and respiratory tract, headache and nausea. Inhalation of mists or aerosols may produce respiratory followed by pulmonary oedema.
- **Acute toxicity/Long Term Effects:** An alkaline poison and primary irritant to mucous membranes, throat, gastrointestinal tract and respiratory tract.

#### Toxicological Data:

- **Inhalation LC50 (rat):** 293 ppm/1hr. (1)
- **Inhalation LC50 (mice):** 137 ppm/1hr. (1)

### SECTION 12 - ECOLOGICAL INFORMATION

Avoid contaminating waterways.
Aquatic toxicity:
Very toxic to aquatic organisms.

SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose of material according to Local Authority Regulations or through a licensed waste contractor.

SECTION 14 TRANSPORT INFORMATION

Road and Rail Transport
Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail.
UN No: 1017
Class-primary 2.3 Toxic Gas
Subrisk 1: 8 Corrosive
Proper Shipping Name: CHLORINE
Hazchem Code: 2XE

Marine Transport
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.
This material is classified as a Marine Pollutant (P) according to the International Maritime Dangerous Goods Code.
UN No: 1017
Class-primary: 2.3 Toxic Gas
Subrisk 1: 8 Corrosive
Proper Shipping Name: CHLORINE

Air Transport
TRANSPORT PROHIBITED under the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in passenger aircraft and cargo aircraft.

SECTION 15 REGULATORY INFORMATION

Classification: This material is hazardous according to criteria of NOHSC.
T: Toxic
X: Irritant

Risk Phrase(s): R23: Toxic by inhalation.
R36/37/38: Irritating to eyes, respiratory system and skin.
R50: Very toxic to aquatic organisms.

Safety Phrase(s): S7/9: Keep container tightly closed and in a well ventilated place.
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S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).
S61: Avoid release to the environment. Refer to special instructions safety data sheets.

Poisons Schedule: S7 Dangerous Poison.
This material is listed on the Australian Inventory of Chemical Substances (AICS).

SECTION 16 OTHER INFORMATION

CONTACT POINTS
ORGANISATION
Poisons Information Centre – Australia Wide
Cargroomers Queensland Pty Ltd
Fire Brigade
Police
TELEPHONE
131126
(07) 3807 7577
0416 188 857
000
000
ASK FOR
Errol Woolcott
Errol Woolcott
Fire Brigade
Police

Every endeavour has been made to ensure that the information contained in this publication is reliable and offered in good faith. It is meant to describe the safety requirements of our products and should not be construed as guaranteeing specific properties. Customers are encouraged to conduct their own tests as end user suitability of the product for particular uses is beyond our control. The information is not intended as an inducement to bargain and no warranty expressed or implied is made as to its accuracy, reliability or completeness. Cargroomers Queensland Pty Ltd accepts no liability for loss, injury or damage arising from reliance upon the information contained in this data sheet except in conjunction with the proper use of
the product to which it refers. Due care should be taken that the use and disposal of this product is in compliance with appropriate Federal, State and Local Government regulations.

PREPARED BY: Malcolm Swanney BSc CHEM  Title: Chemist  Date: 03/01/2010