

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Chlorine (Granular)

Recommended Use: Pool Chemical, bleaching agent, oxidising agent.

Supplier: Midland Chemicals
ABN: 91 622 018 986

Street Address: 18 Elliott Street
Midvale
Western Australia

Telephone Number: +61 08 9274 1992

Facsimile: +61 08 9250 1710

Emergency Telephone: **1 800 033 111 (ALL HOURS)**

2. HAZARDS IDENTIFICATION

Hazardous to criteria of Work Safe Australia

Road and Rail; DANGEROUS GOODS.

Risk Phrases: Harmful if swallowed. Risk of damage to eyes.

Safety Phrases: Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

Poisons Schedule: S5
Packaging group number: II

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion	Risk Phrases
Calcium Hypochlorite (as available Chlorine)	7778-54-3	65%	R36 R38
Inert Ingredient		35%	

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4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor at once.

Inhalation:

Remove victim from exposure- avoid becoming a casualty. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If breathing laboured and patient cyanotic (blue), ensure airways are clear and have a qualified person give oxygen through a face mask. If breathing has stopped apply artificial respiration at once. In the event of cardiac arrest, apply external cardiac massage. For all but most minor symptoms arrange for patient to be seen by a doctor as soon as possible- either on site or at the nearest hospital.

Skin Contact:

Immediately drench with running water and remove clothing. Continue to wash skin with plenty of water (and soap if material is insoluble) until advised to stop by the Poisons Information Centre or a Doctor. Seek immediate medical assistance. .

Eye Contact:

Immediately wash in and around the eye area with large amounts of water for at least 15 minutes. Eyelids to be held apart. Remove clothing if contaminated and wash skin. Seek medical assistance.

Ingestion:

Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water, Never give anything by mouth to an unconscious person. If vomiting occurs give further water. Seek immediate medical assistance.

Medical attention and special treatment:

Treat as Heavy Duty Spray & Wipe Alkaline Cleaner. This product is alkaline and very corrosive. Soluble in water.

5. FIRE FIGHTING MEASURES

Hazards from combustion products:

Evacuate area immediately. A powerful oxidising agent. It can ignite combustible substances. Decomposes on heating emitting toxic fumes. Avoid high temperatures and high humidity.

Precautions for fire fighters and special protective equipment:

Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition. Keep containers cool with water spray.

Suitable Extinguishing Media:

Use water spray. Substance reacts with acids, organics, nitrogen containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), corrosive, flammable and combustible materials.

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures:

Clear area of all unprotected personnel. If heavy concentration of contamination of sewers or waterways has occurred advise local emergency services, or Environmental Protection Authority.

Methods and materials for containment and clean up:

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Wear protective equipment to prevent skin and eye contact. For small Spills flush to sewer as greatly diluted solution. For large spills notify Emergency services. Clear of all unprotected personnel. Shut off all possible sources of ignition. Wear full protective clothing (see personal protection/ventilation section). Use spark free shovel. Collect and seal in properly labelled drums for disposal. Wash area down with excess water. Refer to appropriate State Waste Disposal Authority.

7. HANDLING AND STORAGE

This material must be stored, maintained and used in accordance with the relevant regulations.

Conditions for safe storage:

Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from incompatible materials described in Section 10. Store away from foodstuffs. Keep containers closed when not in use - check regularly for leaks.

Precautions for safe handling:

Avoid skin and eye contact and breathing in vapour, mists and aerosols.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits:

Decomposition product, Chlorine, TLV/TWA. 1 ppm, 3mg/m³, peak limitation Worksafe Australia (National Commission documentation available for these values/substances under review). ACGIH (Threshold Limit Values and Biological Exposure Indices) 1993-1994 Chlorine TWA = 0.5 ppm/1.6mg/m³ STEL = 1ppm/2.9mg/m³.

Engineering controls:

Maintain concentration under below recommended exposure limit. Avoid generating and inhaling dusts. Use in well ventilated area only. Keep containers in a well ventilated area. Local exhaust ventilation system may be required.

Personal Protective Equipment:

Wearing of the following personal protective equipment is recommended. Overalls or similar protective apparel. Safety glasses, goggles or face shields as appropriate. PVC or rubber gloves. Combination particulate/gas respirator, Class B, (inorganic vapour). Self contained breathing apparatus may be needed for prolonged periods of exposure. Wash contaminated clothing and protective clothing before storing/re-using. Avoid skin and eye contact. Always work in a well ventilated area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Granular Powder

Colour: Off White

Solubility: Miscible in water.

Specific Gravity: 2.35 @ 20°C

Relative Vapour Density (air=1): N/A

Vapour Pressure (20 °C): N/A

Flash Point (°C): N/A

Flammability Limits (%): N/A

Decomposition Temperature: 177°C

Auto Ignition Temperature (°C): N/A

Boiling Point/Range (°C): N/A

pH: 10.5 – 11.5 @ 1% solution

Molecular Weight: 143

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10. STABILITY AND REACTIVITY

- Chemical stability:** Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
- Conditions to avoid:** Store in a cool dry place away. Keep away from heat, sparks or naked flames. Heating may cause explosion. Contact with moisture or water may generate heat. Contact with strong acids may generate heat. Contact with strong alkalis may generate heat. The substance is an oxidant and reacts with acids, Organics, nitrogen containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), corrosive, flammable or combustible materials. Hazardous decomposition products – chlorine gas. Avoid high temperatures and high humidity. Powerful oxidant, contact with wood, cotton, straw or oils could cause fire. Reacts with other oxidising agents such as Dichloroisocyanuric acid, Dry, and its salts, and Trichloroisocyanuric acid, dry, and its salts. Add the product to water.
- Incompatible materials:** Keep away from ammonia, primary aliphatic or aromatic amines, lubricating oils, damp sulphur, organic thiols or sulphides, metal oxides, nitro methane, alcohols, glycerol, phenol, diethylene glycol monoethyl ether, carbon, strong acids and strong reducing agents. Contact with these products could produce ignition or explosion. The substance is an oxidant and reacts with acids, Organics, nitrogen containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), corrosive, flammable or combustible materials. Hazardous decomposition products – chlorine gas. Powerful oxidant, contact with wood, cotton, straw or oils could cause fire. Reacts with other oxidising agents such as Dichloroisocyanuric acid, Dry, and its salts, and Trichloroisocyanuric acid, dry, and its salts. Add the product to water.
- Hazardous decomposition products:** Decomposition product, Chlorine, TLV/TWA. 1 ppm, 3mg/m³, peak limitation Worksafe Australia (National Commission documentation available for these values/substances under review). ACGIH (Threshold Limit Values and Biological Exposure Indices) 1993-1994 Chlorine TWA = 0.5 ppm/1.6mg/m³ STEL = 1ppm/2.9mg/m³
- Hazardous reactions:** Ignition or explosion due to contact with incompatible materials or temperature/environment.

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:

- Ingestion:** Ingestion can cause nausea and vomiting. Shock and coma. Will cause severe damage to the mucous membranes, including irritation and/or burns

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to the entire gastrointestinal tract. This is characterised by nausea, vomiting, diarrhoea, abdominal pain, bleeding and or tissue ulceration.

Eye contact: Severe eye irritant. Contact may cause impairment of vision or corneal damage.

Skin contact: Harmful in contact with the skin. Corrosive to skin – may cause skin burns. Dermal exposure can cause severe irritation and/or burns characterised by redness, swelling and scab formation. Prolonged skin exposure may cause destruction of dermis with impairment of the skin at site of contact to regenerate.

Inhalation: the vapour is an irritant to the mucous membranes and respiratory tract. Inhalation of dust will result in respiratory irritation. Inhalation of vapour can result in headaches, dizziness and possible nausea. May also cause burns to the respiratory tract with the production of lung edema which can result in shortness of breath, wheezing, choking, chest pain impairment of lung function. Inhalation of high concentrations can result in permanent lung damage.

Long Term Effects: No information available for the product.

Toxicological Data: Dermal LD50 (RABBIT): 1000 mg/Kg.
Oral LD50 (RAT): 850mg/Kg
Oral LD50 (HUMAN): > 15 g/Kg 0.5 ppm/trout/killed/fresh water.

12. ECOLOGICAL INFORMATION

Ecotoxicity Highly toxic to aquatic life. Avoid contaminating waterways. Breaks down in sunlight.

Persistence and Degradability: Decomposition product, Chlorine, TLV/TWA. 1 ppm, 3mg/m³, peak limitation Worksafe Australia (National Commission documentation available for these values/substances under review). ACGIH (Threshold Limit Values and Biological Exposure Indices) 1993-1994 Chlorine TWA = 0.5 ppm/1.6mg/m³ STEL = 1ppm/2.9mg/m³

13. DISPOSAL CONSIDERATIONS

Disposal methods: Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.

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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; DANGEROUS GOODS.

Not to be loaded with Class 1, 2.1,2.3, 3, 4.1, 4.2, 4.3, 5.2, 6*, 7, 8, 9* (*where these classes are capable of being ignited and burning), and substances other than dangerous goods capable of being ignited and burning. Do not store above 52°C.

UN No: 2880

Class-Primary: 5.1 Oxidising

Packing Group: II

Proper Shipping Name: Calcium Hypochlorite

Haz chem Code: 2P

Marine Transport

classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

Not to be loaded with Class 1, 2.1,2.3, 3, 4.1, 4.2, 4.3, 5.2, 6*, 7, 8, 9* (*where these classes are capable of being ignited and burning), and substances other than dangerous goods capable of being ignited and burning. Do not store above 52°C.

UN No: 2880

Class-Primary: 5.1 Oxidising

Packing Group: II

Proper Shipping Name: Calcium Hypochlorite

Hazchem Code: 2P

Air Transport

classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

Not to be loaded with Class 1, 2.1,2.3, 3, 4.1, 4.2, 4.3, 5.2, 6*, 7, 8, 9* (*where these classes are capable of being ignited and burning), and substances other than dangerous goods capable of being ignited and burning. Do not store above 52°C.

UN No: 2880

Class-Primary: 5.1 Oxidising

Packing Group: II

Proper Shipping Name: Calcium Hypochlorite

Hazchem Code: 2P

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15. REGULATORY INFORMATION

- Classification:** Hazardous according to criteria of Safe work Australia; HAZARDOUS SUBSTANCE
- Hazard Category:** C: Corrosive
- Risk Phrase(s):** R8: Contact with combustible material may cause fire.
R31: Contact with acids Liberates toxic gas.
R34: Causes burns.
R36: Irritating to Eyes
R38: Irritating to Skin.
R41: Risk of serious damage to eyes.
- Safety Phrase(s):** S2: Keep out of reach of children.
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.
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.
S43: In case of fire use water spray to cool containers. Do Not use dry extinguishers containing ammonium compounds
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).
- Poisons Schedule:** S5

16. OTHER INFORMATION

This material safety data sheet has been prepared by Midland Chemicals

This MSDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Midland Chemicals cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material. If clarification or further information is needed, the user should contact Midland Chemicals at the contact details on page 1.

Midland Chemical's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.