

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<b>Product Name:</b>	Durachlor 300, Minichlor 20 and Briquette Tablets
<b>Chemical Name:</b>	Calcium Hypochlorite
<b>Product Code:</b>	Briquette Tablets (7g Tablet) Minichlor 20 (20g Tablet) Durachlor 300 (300g Tablet) Granular Chlorine (Granules)
<b>Recommended Use of the Chemical and Restrictions on Use:</b>	Water treatment chemical
<b>Supplier:</b>	Aquadex Australia Pty Ltd
<b>Street Address:</b>	3/38 Technology Drive Warana QLD 4575 Australia
<b>Telephone Number:</b>	1800 088 883 (24/7)
<b>Email Contact:</b>	<a href="http://www.grenof.com">www.grenof.com</a>
<b>Emergency Telephone:</b>	1800 088 883 (24/7) Transport Emergency – Dial 000

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information"

## 2. HAZARDS IDENTIFICATION

Classified as hazardous according to the criteria of the GHS as adopted in Australia. A Dangerous Good according to ADG 7.7.

**SIGNAL WORD: DANGER**

### GHS Hazard Statement(s)

Oxidising Solid	Category 2	H272	May Intensify fire: oxidizer
Acute Oral Toxicity	Category 4	H302	Harmful if swallowed
Eye irritation/corrosion	Category 1	H318	Causes serious eye damage
Skin Corrosion irritation	Category 1B	H314	Causes severe skin burns and eye damage
Aquatic acute toxicity	Category 1	H400	Very Toxic to the aquatic life

### GHS Precautionary statement(s)

#### Prevention:

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P220: Keep away from clothing and other combustible materials.

P260: Do not breathe dust or mist.

P264: Wash hands, forearms and face thoroughly after handling

P270: Do not eat, drink or smoke when using this product

P273: Avoid release to the environment

P280: Wear protective gloves/protective clothing/eye protection/face protection

P273: Avoid Release to Environment.

**Response:**

370 + P378: In case of fire use water to extinguish.

P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.

P314: Get medical advice/attention if you feel unwell.

P330: Rinse mouth.

P391: Collect spillage

**Storage:**

None

**Disposal:**

P501: Dispose of contents/ container in accordance with local/ regional/ national/ international Regulations.

**Hazard pictograms**



**Label Statements:**

Keep out of reach of Children  
 Read label before use  
 If medical advice is needed, have product container or label on hand.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Ingredient	CAS Number	Concentration (% w/w)
Calcium Hypochlorite	7778-54-3	>65
Not contributing to the product hazard		Balance

**4. FIRST AID MEASURES**

If poisoning occurs, or medical advice needed contact a Poisons Information Centre. Phone Australia 13 1126 or a doctor. Have this SDS when you call.

**If swallowed:**

Do not induce vomiting unless advised to do so from, a medical practitioner. Give a glass of water. Wash out mouth with water. Seek medical attention.

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<b>Skin contact:</b>	Wash affected area thoroughly with soap and water. Remove contaminated clothing and wash before reuse or discard. If irritation occurs seek immediate medical attention.
<b>Eye contact:</b>	Rinse cautiously with water for several minutes. Neutral saline solution may be used as soon as it is available. Do NOT interrupt flushing. Take care not to rinse contaminated water into the non-affected eye or onto the face. If irritation occurs seek immediate medical attention.
<b>If inhaled:</b>	Remove from contaminated area and keep comfortable. If symptoms develop seek medical attention.
<b>Note to Physician</b>	Treat symptomatically
<b>Most important acute and delayed symptoms and affects</b>	Skin Contact: burns Eye contact : serious damage to eyes Ingestions: burns

<b>5. FIRE FIGHTING MEASURES</b>
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<b>Suitable extinguishing media:</b>	Flooding water spray from a distance. Do not use foam or dry chemical agent or carbon dioxide.
<b>Special hazards arising from the chemical:</b>	Inhalation, ingestion or contact (skin, eyes) with vapors or substance may cause severe injury, burns or death. Fire may produce irritating, corrosive and/or toxic gases. Carbon monoxide (in conditions of incomplete combustion), carbon dioxide, nitrogen oxides and hydrogen chloride may be produced if water in the product boils off. May accelerate burning when involved in a fire. May decompose explosively when heated or involved in a fire. May react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, oil, clothing, etc.). Containers may explode when heated. Runoff may create fire or explosion hazard. Runoff from fire control or dilution water may cause pollution.
<b>Special protective equipment and precautions for fire firefighters:</b>	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
<b>Hazchem Code:</b>	1W

<b>6. ACCIDENTAL RELEASE MEASURES</b>
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<b>Personal precautions, protective equipment and emergency procedure</b>	Evacuate the area. Avoid skin and eye contact and inhalation of dust. Wear appropriate protective equipment and clothing – See section 8. Ventilate the area. No open flames, no sparks, and no smoking.
<b>Environmental precautions</b>	Keep spilt products out of drains, sewers and waterways. If large quantities of this material enter the waterways contact a local

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Environmental Protection Authority, or your local Waste Management Authority.

**Methods and materials for containment and cleaning up**

For minor spills, sweep up, place contaminated material in a sealed container and dispose of at a waste management facility able to handle hazardous substances. Wash area down with excess water. Major spills: contact the company emergency service and follow instructions.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

Ensure good ventilation of the work area. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Do not inhale product dust/fumes. Do NOT allow product to get damp. Do NOT mix with other chemicals. Do NOT add water to the product - add the product to the water. Use only clean utensils for handling as. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

**Safe storage, including any incompatibilities**

Store locked up in a cool, dry well-ventilated area, out of direct sunlight. Store in labelled, tightly closed original containers. Do not allow product to come into contact with water. Store away from sources of ignition, heat and incompatible materials described in Section 10. Keep away from food, drink and animal feeding stuffs.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Occupational Exposure Limits:** Exposure limits have not been established by Safe Work Australia for this product or any of its components. It is appropriate to apply the exposure standard for inhalable/inspirable dusts of 10 mg/m<sup>3</sup>, measured as inhalable dust (8 hour TWA).

**Exposure controls**

**Appropriate Engineering Controls:**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Personal Protective equipment - for manufacturing and bulk handling situations:**

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

- Skin Protection:** Wear gloves of impervious material such as nitrile rubber. Wear suitable protective clothing.
- Eye Protection:** Safety glasses.
- Respiratory Protection:** Respiratory protection is not normally necessary unless the production of dust is significant. In such cases, a suitable respirator may be worn that meets the requirements of AS/NZS 1715 and 1716.
- Personal Hygiene:** Always wash hands after handling this product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	White Grenules/Tablets	<b>Relative Vapour density:</b>	6.9 (20°C)
<b>Odour:</b>	Chlorine	<b>Relative density (water = 1):</b>	2.00 (20°C)
<b>pH:</b>	10.8 (10% solution)	<b>Water solubility:</b>	210g/L (25°C); 430-480g/L (40°C); Insoluble in ethanol
<b>Melting point / freezing point:</b>	~ 100°C	<b>Partition coefficient n-octanol/water:</b>	Log Pow -2.46, inorganic compound
<b>Initial boiling point and boiling range:</b>	Not applicable	<b>Auto-ignition temperature:</b>	Not applicable
<b>Flash point:</b>	Not flammable	<b>Decomposition temperature:</b>	Slowly decomposed less than 100 °C; when above 140 °C, around 12 minutes of heating up, violent decomposition and combustion occur.
<b>Evaporation rate:</b>	No data found	<b>Viscosity:</b>	Not applicable
<b>Flammability:</b>	Not flammable	<b>Explosive properties:</b>	May explode when in contact with incompatible substances
<b>Upper/lower flammability limits:</b>	Not flammable	<b>Oxidising properties:</b>	GHS Cat 2 oxidiser
<b>Vapour pressure:</b>	No data found	<b>Moisture content:</b>	4 – 10%

## 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Oxidising agent. Violent explosions possible. May intensify fire.
<b>Chemical Stability:</b>	Stable under normal conditions. May decompose violently if exposed to heat or direct sunlight. Decomposition may lead to spontaneous ignition through self- heating. In a fire and reactive conditions chlorine gas evolves.
<b>Possibility of hazardous reactions:</b>	No dangerous reactions known under normal conditions of use. Hazardous Polymerisation will not occur; however this product is a highly reactive oxidising chlorine compound. May cause fire or explosion. Readily ignites with flammable and combustible materials, in contact with anhydrous (dry) calcium hypochlorite. Reacts with ammonia, primary amines, aromatic amines, and urea to form explosive nitrogen trichloride. May explode upon contact with ethanol or methanol, due to the formation of alkyl hypochlorites. Contact with hydroxy compounds causes ignition and may be explosive. Contact of acetylene may lead to formation of explosive chloroacetylenes. Reaction with acetic acid and potassium cyanide may be explosive. Reaction with reducing agents causes a violent reaction. Reaction with metal oxides can cause a violent oxygen-evolving

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decomposition of hypochlorites. A confined intimate mixture of calcium hypochlorite + finely divided charcoal can explode on heating. Metals catalyze the decomposition. Reaction with organic sulfur compounds may cause a flash fire/explosion. A mixture of damp sulfur and 'solid swimming pool chlorine' can cause a violent exothermic reaction. May explode with turpentine.

<b>Conditions to avoid:</b>	Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.
<b>Incompatible materials:</b>	Combustible materials. Incompatible with flammable, organic and combustible materials, ammonia, primary amines, aromatic amines, and urea acids, ammonium chloride, different types of chlorinating chemicals, ethanol or methanol, hydroxy compounds, acetylene, acetic acid and potassium cyanide, reducing agents, metal oxides, charcoal + heat, metals, organic sulfur, compounds, sulfur (damp), turpentine and all sources of ignition.

<b>11. TOXICOLOGICAL INFORMATION</b>
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No data available for the product. Information given is based on the calcium hypochlorite component (70% w/w).

<b>Acute Oral</b>	Oral LD50 (rat) = 850 mg/kg.
<b>Acute Dermal</b>	Dermal LD50 (rat) > 2000mg/kg
<b>Skin corrosion/irritation</b>	Corrosive to skin – causes burns. Dermal exposure can cause severe irritation and/or burns characterised by redness, swelling and scab formation. Skin contact may also cause eruptions and eczema. pH 10.8.
<b>Serious eye damage/eye irritation</b>	Causes burns and is a severe eye irritant. Contact may cause impairment of vision or corneal damage. pH 10.8.
<b>Inhalation</b>	The vapour is an irritant to the mucous membranes and respiratory tract. Inhalation of dust will result in respiratory irritation. Inhalation may 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 and impairment of lung function. Inhalation of high concentrations can result in permanent lung damage. Inhalation exposures to concentrations of greater than about 500 ppm (10 min or more) may be fatal for rats.
<b>Respiratory or skin sensitisation</b>	Inhalation of mist may result in respiratory irritation. No data found for skin or respiratory sensitisation
<b>Mutagenicity</b>	Chromosomal aberrations were analyzed in Chinese hamster cells treated for 24 or 48 hours with three different doses of calcium hypochlorite, in the absence of metabolic activation. A positive increase in chromosomal aberrations was observed only in a culture treated with

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	0.5 µg/mL (6.7 mol/L = approx. 3.5 µmol/L active chlorine) for 48 hours.
<b>Reproduction/Development</b>	No reproductive toxic effects were shown up to 5 mg/kg (highest dose tested) of sodium salt (equivalent to 4.8 mg/kg of Calcium salt) in a one generation oral study in rats. No evidence of adverse developmental effects were reported in animals. Moreover, epidemiological studies in humans did not show any evidence of toxic effects on reproduction and development.
<b>Carcinogenicity</b>	No carcinogenicity was observed in mice or rats exposed by inhalation to chlorine and orally to sodium hypochlorite, except some equivocal results were reported for female rats by oral route. For human carcinogenicity, no causal relationship between hypochlorite exposure and tumour incidence was observed. The observation is applicable to calcium hypochlorite.
<b>Specific target organ toxicity - single exposure</b>	Moderate depression of the central nervous system was found at 1 hour after administration. Most survivors showed a mild to moderate persistent anorexia. Most affected animals showed diarrhea for several days.
<b>Specific target organ toxicity - repeated exposure</b>	A NOAEL (chronic) can be calculated to be approximately 14 mg available chlorine /kg bw/day for rats and 22.5 mg available chlorine /kg bw/day for mice.
<b>Aspiration hazard</b>	Not considered to be an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

No data available for the product. Information given is based on the calcium hypochlorite component (70% w/w).

<b>Aquatic toxicity</b>	<p>LC<sub>50</sub>: 0.049 - 0.16 mg/l (Exposure time: 96 h - Species: <i>Lepomis macrochirus</i> [static]).</p> <p>LC<sub>50</sub>: 0.4 mg/l (Exposure time: 96 h - Species: <i>Lepomis macrochirus</i> [flow-through])</p> <p>Lowest result for algae is reported for <i>Thalassiosira pseudonana</i> with a IC<sub>50</sub> of 75 µg/L (20°C).</p> <p>Long-term toxicity to freshwater organisms: lowest NOEC = 5 µg/L (<i>Ictalurus punctatus</i>, 133d, growth).</p> <p>In microcosm and field studies the most sensitive parameter was the density of zooplankton with a NOEC of 1.5 µg TRC/L.,</p> <p>Salt water: fish (<i>Oncorhynchus kisutch</i>) 96 h LC<sub>50</sub> = 32 µg TRO/L) (TRO = Total Residual Oxidant) Molluscs: are more 15d NOEC of 6.2 µg TRO/L.</p>
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<b>Persistence and degradability</b>	High water solubility and rapid reaction with organic matter leads to rapid disappearance of the hypochlorite moiety. Biodegradation of this substance cannot be measured
<b>Bioaccumulative potential:</b>	The bioaccumulation potential of this substance can be disregarded, because of its water solubility and its high reactivity.
<b>Mobility in soil</b>	substance decomposes rapidly in each compartment (air, water, soil and sediment). Therefore, this substance itself does not exist in nature.
<b>PBT identification:</b>	This product is not identified as a PBT/vPvB substance.
<b>Other adverse effects:</b>	None known.

## 13. DISPOSAL CONSIDERATIONS

**Disposal:** Rinse empty containers. Refer to local government authority for disposal recommendations. Dispose of material through a licensed waste contractor. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

## 14. TRANSPORT INFORMATION

Consult the ADG 7.7, IMDG and ICAO/IATA Codes for all the transport requirements for the specified UN Number.

	Land Transport (ADG 7.7)	Sea Transport (IMDG)**	Air Transport (ICAO/IATA) ***
<b>UN Number</b>	2880	2880	2880
<b>UN proper shipping name</b>	CALCIUM HYPOCHLORITE, HYDRATED	CALCIUM HYPOCHLORITE, HYDRATED	CALCIUM HYPOCHLORITE, HYDRATED
<b>Transport Hazard Class</b>	5.1	5.1	5.1
<b>Packaging Group</b>	II or III (see ADG 7.7 for details)	II or III	II or III
<b>Marine Pollutant</b>		Yes	
<b>Special Provisions*</b>	314, 316		

\* See ADG 7.7 for full details. \*\* See IMDG Dangerous Goods Code for full details \*\*\* See ICAO Dangerous Goods Code for full details.

- 314: (a) These substances are liable to exothermic decomposition at elevated temperatures. Decomposition can be initiated by heat or by impurities (e.g., powdered metals (iron, manganese, cobalt, magnesium) and their compounds);
- (b) During the course of transport, these substances must be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.

316: This entry applies only to calcium hypochlorite, hydrated, when transported in non-friable tablet form.

## 15. REGULATORY INFORMATION

<b>Poisons Standard (Scheduling):</b>	Schedule 6
<b>APVMA Product Number:</b>	Not applicable
<b>Listing in the Australian Inventory of Chemical Substances (AICS)</b>	Calcium hypochlorite

## 16. OTHER INFORMATION

<b>ADG</b>	Australian Code for the Transport of Dangerous Goods by Road & Rail Edition 7.7, 2020
<b>AS/NZS</b>	Australian Standard/New Zealand Standard
<b>CAS Number:</b>	Unique Chemical Abstracts Service Registry Number
<b>EC<sub>50</sub>:</b>	Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g., daphnia, fish species).
<b>GHS:</b>	Globally Harmonized System of classification and labelling of chemicals (GHS)
<b>Hazchem Code:</b>	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters
<b>HCIS:</b>	Hazardous Chemical Information System ( <a href="http://hcis.safeworkaustralia.gov.au/HazardousChemical">http://hcis.safeworkaustralia.gov.au/HazardousChemical</a> )
<b>IARC:</b>	International Agency for Research on Cancer
<b>LD<sub>50</sub>:</b>	Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).
<b>IDLH:</b>	Immediately dangerous to life or health (IDLH) is <b>defined</b> by the US National Institute for Occupational Safety and Health (NIOSH)
<b>LC<sub>50</sub>:</b>	Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population.
<b>NTP:</b>	National Toxicology Program (USA)
<b>SDS:</b>	Safety Data Sheet
<b>STEL:</b>	Short term exposure limit (STEL) means the time-weighted average maximum airborne concentration of a substance calculated over a 15 minute period.
<b>TWA:</b>	8-hour Time-weighted average (TWA) means the maximum average airborne concentration of a substance when calculated over an eight-hour working day, for a five-day working week.
<b>WES:</b>	Workplace exposure standard
<b>UN Number:</b>	United Nations Dangerous Goods Number

### References:

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Work Safe Australia Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (July 2020). The exposure standards comply with the Australian Workplace Exposure Standards for Airborne Contaminants. The Dangerous Goods Classification complies with the Australian Code for the Transport of Dangerous Goods by Road & Rail Edition 7.7, 2020. Other information from ChemIDPlus and linked databases, the European Chemicals Agency Classification and Labelling database, OECD SIDS and calcium hypochlorite manufacturers SDS.

**Sections Revised:** All

**Replaces revision:** New

### **Disclaimer**

This Safety Data Sheet (SDS) has been prepared in compliance with the Work Safe Australia Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (July 2020). The information in this SDS should be provided to all who will use, handle, store, transport, or otherwise be exposed to this product. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Aquadex Australia Pty Ltd shall not be held liable for any damage resulting from handling or from contact with the above product.

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