



## 1. Identification of Substance & Company

### Product

Product names	HTH® Granular Chlorine
Other names	None
Proper shipping name	CALCIUM HYPOCHLORITE, HYDRATED MIXTURE
UN number	2880
Packaging group	II
Hazchem code	1W
Poison schedule	S6
Uses	Water Treatment (disinfection, sanitation, oxidation) – HTH® is a registered trademark of Arch Chemicals, Inc.

### Company Details

Company	Arch International Pty Ltd (an Australian Subsidiary of Arch Chemicals, Inc.)	
Address	P.O. Box 519 North Sydney NSW 2059 Australia	Level 10, 15 Blue Street North Sydney NSW 2060 Australia
Telephone number	02 9954 5433	

**Emergency Telephone Number: 1800 796637**

## 2. Hazard Identification

### Hazard Classifications

Classified as hazardous to the criteria of NOHSC. Poison Schedule Number: S6



### Other Classifications

Dangerous for the environment.

### Risk and Safety Phrases

<b>Risk</b>	R8: Contact with combustible material may cause fire. R22: Harmful if swallowed. R31: Contact with acids liberates toxic gas. R34: Causes burns. R50: Very toxic to aquatic organisms.
<b>Safety</b>	S1/2: Keep locked up and out of the reach of children. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S22: Do not breathe dust. S24/25: Avoid contact with skin and eyes. S36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S61: Avoid release to the environment. Refer to special instructions/Material Safety Data Sheets.



### 3. Composition / Information on Ingredients

Component	CAS/ Identification	Conc (%)
CALCIUM HYPOCHLORITE	7778-54-3	60-80%
CALCIUM CHLORIDE	10043-52-4	0-5%
CALCIUM HYDROXIDE	1305-62-0	0-4%
NON HAZARDOUS INGREDIENTS	Various	<30%
WATER	7732-18-5	balance

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

### 4. First Aid

#### General Information

Arch International Pty Limited has an Emergency Contact Phone Number: 1800 796637.

**Recommended first aid facilities** Ready access to running water is required. Accessible eyewash is recommended. Emergency shower, hand wash, soap. CPR training, oxygen mask.

#### Exposure

**Swallowed** Do NOT induce vomiting. Give a glass of water to drink. Contact a doctor. If conscious, give plenty of water to drink. DO NOT INDUCE vomiting. Contact the National Poisons Centre or a Doctor immediately. If vomiting occurs, place victim face downwards, with the head turned to the side and lower than the hips to prevent vomit entering the lungs.

**Eye contact** Remove contact lenses if worn. Apply continuous irrigation with water for at least 15 minutes holding eyelids apart. Seek medical attention if effect persist.

**Skin contact** Product may cause burns. Flush immediately with large amounts of water. Remove all contaminated clothing. Contact a doctor.

**Inhaled** 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 victim at rest until fully recovered. If breathing is 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 event of cardiac arrest, apply cardiopulmonary resuscitation (CPR) if trained. Seek medical attention.

#### Advice to Doctor

Probable mucosal damage may contraindicate the use of gastric lavage.

### 5. Firefighting Measures

**Fire and explosion hazards:** This product is not flammable. Oxidising materials can increase the intensity of fire.

**Suitable extinguishing substances:** Water only. Do not use dry extinguishers containing ammonium compounds.

**Unsuitable extinguishing substances:** Unknown.

**Products of combustion:** Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water. May form toxic mixtures in air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures.

**Protective equipment:** Self-contained breathing apparatus. Safety boots, non-flammable overalls, gloves, hat and eye protection.

**Hazchem code:** 1W



## 6. Accidental Release Measures

<b>Emergency procedures</b>	<p>In the event of spillage alert the fire brigade to location and give brief description of hazard. Shut off all possible sources of ignition. Wear protective equipment to prevent skin, eye and respiratory exposure. Clear area of any unprotected personnel. Separate all spilled product from packaging, debris and other material. Using a clean broom or shovel, place all spilled product into plastic bags, and place those bags into a clean, dry disposal container, properly marked and labelled. Prevent by whatever means possible any spillage from entering drains, sewers, or water courses. (If this occurs contact your relevant authority immediately).</p>
<b>Clean-up method</b>	<p>Collect in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services immediately.</p>
<b>Disposal</b>	<p>Disposal containers made of plastic or metal are recommended. Do not seal disposal containers tightly. Immediately remove all product in disposal containers to an isolated area outdoors. Place all damaged packaging material in a disposal container of water to assure decontamination (i.e. removal of all product) before disposal. Place all undamaged packaging in a clean, dry container properly marked and labeled. See section 13.</p>
<b>Precautions</b>	<p>Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation. All spills of this product should be treated as contaminated. Contaminated product may initiate a chemical reaction that may spontaneously ignite any combustible material present, resulting in a fire of great intensity. Hazardous concentrations in air may be found in local spill area and immediately downwind.</p>

## 7. Storage & Handling

<b>Storage</b>	<p>Avoid storage of harmful substances with food. Store out of reach of children. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames. Avoid contact with incompatible substances as listed in Section 10. Containers (and outer packaging) must bear the prescribed labelling, including the Hazchem code, UN number, flammability warning and name of contents.</p>
<b>Handling</b>	<p>Keep exposure to a minimum, and minimise the quantities kept in work areas. See section 8 with regard to personal protective equipment requirements. Avoid skin and eye contact and inhalation of vapour, mist or aerosols.</p>

## 8. Exposure Controls / Personal Protective Equipment

### Workplace Exposure Standards

An exposure standard (ES) has not been established for this product. The following limits have been established for the ingredients:

<b>NOHSC</b> (NOHSC:1003)	<b>Ingredient</b>	<b>ES-TWA</b>	<b>ES-STEL</b>
	CALCIUM HYPOCHLORITE	1 mg/m <sup>3</sup> *	Data unavailable
	CALCIUM HYDROXIDE	10mg/m <sup>3</sup> (dust)	Data unavailable
	CALCIUM CHLORIDE	5mg/m <sup>3</sup>	Data unavailable
	NON HAZARDOUS INGREDIENTS	Data unavailable	Data unavailable

\* (recommended by manufacturer)

### Engineering Controls

In industrial situations, concentration values below the ES value must be maintained. Exposure can be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify processes or increase ventilation.

**Personal Protective Equipment**

**Eyes**



Protect eyes with goggles, safety glasses or full face mask. Avoid wearing contact lenses.

**Skin**

Avoid repeated or prolonged skin contact. Wear overalls, rubber boots and impervious gloves. Remove protective clothing and wash exposed areas with soap and water prior to eating, drinking or smoking.



**Respiratory**



A respirator when airborne concentrations approach the ES (section 8). Use an approved full facepiece respirator with Acid Gas Cartridges and Particulate Filters. If using a respirator, ensure that the cartridges are correct for the potential air contamination and are in good working order.

**ES Additional Information**

Exposure standards for decomposition products:

Chlorine: WES-TWA: 0.5 ppm, 1.5 mg/m<sup>3</sup>; WES-STEL: 1 ppm, 2.9 mg/m<sup>3</sup>

**9. Physical & Chemical Properties**

<b>Appearance</b>	White free flowing powder
<b>Odour</b>	Chlorine like
<b>pH</b>	10.4 – 10.8 (1% solution in neutral, distilled water) at 25°C.
<b>Vapour pressure</b>	Not applicable
<b>Boiling point</b>	Not applicable
<b>Volatile materials</b>	Not applicable
<b>Freezing / melting point</b>	Not applicable
<b>Solubility</b>	18.00% (at 25°C).
<b>Specific gravity / density</b>	0.8 g/mL
<b>Flash point</b>	Non flammable
<b>Danger of explosion</b>	Not explosive
<b>Auto-ignition temperature</b>	Non flammable
<b>Upper and lower flammable limits</b>	Non flammable
<b>Corrosiveness</b>	Corrosive to skin and eyes.



## 10. Stability & Reactivity

<b>Stability</b>	Product is not sensitive to mechanical shock or impact. Product is not sensitive to electrical static discharge. Product will not undergo hazardous polymerization. Product is an oxidiser which can cause a severe increase in fire intensity. Not pyrophoric. Not an organic peroxide. If subjected to excessive temperatures, the product may undergo rapid decomposition, evolution of chlorine gas, and heat sufficient to ignite combustible substances.
<b>Conditions to be avoided</b>	Oxidising substance - keep away from sources of ignition and flammable materials
<b>Incompatible groups</b>	This product is chemically reactive with many substances, including, e.g., other pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidisers, corrosive, flammable or combustible materials. Do not allow product to contact any foreign matter, including other water treatment products. Contamination or improper use may cause a fire of great intensity, explosion or the release of toxic gases. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter.
<b>Substance Specific Incompatibility</b>	Do not store next to heat source, in direct sunlight, or elevated storage temperature. Do not store where the daily average temperature exceeds 35°C. Prevent ingress of humidity and moisture into container or package. Always close the lid.
<b>Hazardous decomposition products</b>	Chlorine, decomposition temperature: 170 - 180°C.
<b>Hazardous reactions</b>	If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter. Use copious amounts of water for fires involving this product.

## 11. Toxicological Information

### Summary

No specific data is available for this product. Where available, toxicological data has been researched and data for the mixture calculated. The results of these calculations are presented below. The product is considered to have the following toxicity:

### Supporting Data

<b>Acute</b>	<b>Oral</b>	No data for mixture is available. The mixture is considered harmful if swallowed. Using LD <sub>50</sub> 's for ingredients, the calculated LD <sub>50</sub> (oral, rat) for the mixture is between 300 and 2,000 mg/kg. Data considered includes: calcium hypochlorite 850 mg/kg (rat), calcium chloride 1000 mg/kg (rat), calcium hydroxide 7340 mg/kg bw (rat).	
	<b>Dermal</b>	No data for mixture is available. Using LD <sub>50</sub> 's for ingredients, the calculated LD <sub>50</sub> (dermal, rat) for the mixture is >2,000 mg/kg. Data considered includes: calcium hypochlorite >2000 mg/kg (rabbit), calcium chloride 2630 mg/kg (rat), calcium hydroxide no data.	
	<b>Inhaled</b>	No data for mixture is available. Using LC <sub>50</sub> 's for ingredients, the calculated LC <sub>50</sub> (inhalation, rat) for the mixture is >5,000 ppm. Data considered includes: calcium hypochlorite for 1 h (Nose Only) 2.04 mg/L (rat), for 4 h (Nose Only) 0.51 mg/L (rat), calcium chloride no data, calcium hydroxide no data.	
	<b>Eye</b>	The mixture is considered to be corrosive to the eye, because some of the ingredients (calcium hypochlorite, calcium hydroxide) present are considered eye corrosives.	
	<b>Skin</b>	The mixture is considered to be corrosive to the skin, because some of the ingredients present (calcium hypochlorite, calcium hydroxide) are considered skin corrosives.	
	<b>Chronic</b>	<b>Sensitisation</b>	No data for mixture is available. No ingredient present at concentrations > 0.1% is considered a sensitizer.
		<b>Mutagenicity</b>	No data for mixture is available. No ingredient present at concentrations > 0.1% is considered a mutagen.
		<b>Carcinogenicity</b>	No data for mixture is available. No ingredient present at concentrations > 0.1% is considered a carcinogen. This product is not known or reported to be carcinogenic by any reference source including IARC.
		<b>Reproductive / Developmental</b>	No data for mixture is available. No ingredient present at concentrations > 0.1% is considered a reproductive or developmental toxicant or have any effects on or via lactation.
	<b>Systemic</b>	No data for mixture is available. No ingredient present at concentrations > 1% is considered a target organ toxicant.	
	<b>Aggravation of existing conditions</b>	None known.	

## 12. Ecological Data



### Summary

No specific data is available for this product. Where available, ecotoxicological data has been researched and data for the mixture calculated. The results of these calculations are presented below. The product is considered to have the following ecotoxicity groups:

### Supporting Data

<b>Aquatic</b>	No data for mixture is available. Using EC <sub>50</sub> 's for ingredients, the calculated EC <sub>50</sub> for the mixture is < 1 mg/L. Data considered includes: calcium hypochlorite: Bluegill - (nominal, static). 96 h LC <sub>50</sub> 0.088 mg/l, Rainbow trout ( <i>Salmo gairdneri</i> ), - (nominal, static). 96 h LC <sub>50</sub> 0.16 mg/l, <i>Daphnia magna</i> , - (nominal, static). 48 h LC <sub>50</sub> 0.11 mg/l. calcium chloride: Bluegill (nominal, static). 96 h LC <sub>50</sub> 10 650 mg/l, Mosquito fish (nominal, static). 96 h LC <sub>50</sub> 13 400 mg/l, Fathead minnow (nominal, static). 96 h LC <sub>50</sub> 4630 mg/l, <i>Daphnia magna</i> (nominal, static). 48 h LC <sub>50</sub> 2770 mg/l, <i>Ceriodaphnia dubia</i> (nominal, static). 48 h LC <sub>50</sub> 1830 mg/l, <i>Nitzschia linearis</i> (nominal, static). 5 day LC <sub>50</sub> = 3130 mg/l. calcium hydroxide: 33.884 mg/l ( <i>Clarias gariepinus</i> (Zambezi barbel)).
<b>Bioaccumulation</b>	No data for mixture is available. No evidence of bioaccumulation.
<b>Degradability</b>	No data for mixture is available. No evidence of persistence in the environment.
<b>Soil</b>	This substance is considered highly ecotoxic to the soil environment, with a soil ecotoxicity value ≤ 1 mg/kg.
<b>Terrestrial vertebrate</b>	The mixture may be harmful to terrestrial vertebrates. The following data is available: calcium hypochlorite: Bobwhite quail - Dietary LC <sub>50</sub> > 5,000 ppm Mallard ducklings - Dietary LC <sub>50</sub> > 5,000 ppm Bobwhite quail Oral LD <sub>50</sub> 3,474 mg/kg, calcium chloride: 500-1000 mg/kg (rabbit), calcium hydroxide: no data
<b>Terrestrial invertebrate</b>	No data for the mixture. The mixture is not considered ecotoxic to terrestrial invertebrates.

## 13. Disposal Considerations

<b>Restrictions</b>	There are no product-specific restrictions. However, state and local disposal regulations may apply. Note that state and local disposal regulations may differ from federal disposal regulations. .
<b>Disposal method</b>	Disposal of this product must comply with the requirements of state and local disposal regulations. The substance must be handled as hazardous waste and disposed of in an approved facility. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.
<b>Contaminated packaging</b>	Dispose of empty containers safely. Rinse containers before disposal. Do not re-use containers for any other purpose.
<b>Special considerations for landfill and incineration</b>	Not applicable

## 14. Transport Information

<b>UN number:</b>	2880	<b>Proper shipping name:</b>	CALCIUM HYPOCHLORITE, HYDRATED MIXTURE
<b>Class(es):</b>	5.1	<b>Packing group:</b>	II
<b>Precautions:</b>	Corrosive	<b>Hazchem code:</b>	1W

### Additional Information

None

## 15. Regulatory Information

<b>Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP)</b>	S6
<b>Applicable prohibitions and notifications/licensing requirements</b>	Not applicable
<b>Australian Pesticides and Veterinary Medicines Authority Product Number</b>	63836 HTH® GRANULAR CHLORINE
<b>Listing in the Australian Inventory of Chemical Substances (AICS)</b>	Not applicable
<b>Additional information</b>	Not applicable

## 16. Other Information

### Abbreviations

<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>ES</b>	Workplace Exposure Standard
<b>HAZCHEM Code</b>	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters.
<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>LC<sub>50</sub></b>	Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population (usually rats).
<b>MSDS</b>	Material Safety Data Sheet (or Safety Data Sheet)
<b>NICNAS</b>	Australian National Industrial Chemicals Notification and Assessment Scheme
<b>NTP</b>	National Toxicology Program (USA)
<b>SUSDP</b>	Australian Standard for the Uniform Scheduling of Drugs & Poisons
<b>UN Number</b>	United Nations Number

### References

<b>Data</b>	Unless otherwise stated comes from IUCLID datasheet for the specific chemical.
<b>NOHSC: 1003</b>	National Occupational Health and Safety Commission 1995, <i>Exposure Standards for Atmospheric Contaminants in the Occupational Environment</i> , Australian Government Publishing Service, Canberra, ACT
<b>Other References</b>	Not applicable

### Disclaimer

This MSDS was prepared by Datachem LTD. The information included is based on our current state of knowledge, including information obtained from suppliers. The MSDS is given in good faith and constitutes a guideline (not a guarantee of safety). The level of risk each substance poses is relevant to its properties (as summarised in the MSDS) AND HOW THE SUBSTANCE IS USED. While guidelines are given for personal protective equipment, such precautions must be relevant to the use. This MSDS is prepared in accordance with the ASCC document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]. For further technical information regarding the MSDS, contact the MSDS writer, email Datachem via [info@datachem.co.nz](mailto:info@datachem.co.nz) or phone: +64-9-940 3080

