



Calcium Hypochlorite – hydrated

Safety Data Sheet

1. Identification of Substance & Company

Product

Product name	Calcium Hypochlorite – hydrated
Other names	Not assigned
HSNO approval	HSR006978
Approval description	Calcium hypochlorite, hydrated, with not less than 5.5% but not more than 16% water
UN number	2880
DG class	5.1
Proper Shipping Name	CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, with not less than 5.5% but not more than 16% water
Packaging group	II
Hazchem code	1W
Uses	Swimming pool chemical, algicide, biocide, oxidant.

Company Details

Company	Argo International Ltd
Physical Address	9 St Benedicts St, Eden Terrace, Auckland New Zealand
Telephone	+64 9 377 5061
Fax	+64 9 309 1992
Website	argo@argoint.co.nz

Emergency Telephone Number: 0800 764 766 (National Poison Centre)

2. Hazard Identification

Approval

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR006978, Calcium hypochlorite, hydrated, with not less than 5.5% but not more than 16% water). The substance has been assessed as hazardous according to the criteria in the Hazardous substances (hazard Classification) Notice 2020 and is classified as follows:

Classes	Hazard Statements
Oxidising solid Category 2	H272 - May intensify fire; oxidizer.
Acute oral toxicity Category 4	H302 - Harmful if swallowed.
Corrosive to metals Category 1	H290 - May be corrosive to metals.
Skin corrosion Category 1C	H314 - Causes severe skin burns and eye damage.
Serious eye damage Category 1	H318 - Causes serious eye damage.
Aquatic acute Category 1	H400 - Very toxic to aquatic life.
Aquatic chronic Category 1	H410 - Very toxic to aquatic life with long lasting effects.

SYMBOLS

DANGER





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HSNO Classes	Hazard Statements
5.1.1B	H272 - May intensify fire; oxidizer.
6.1D (oral)	H302 - Harmful if swallowed.
8.1A	H290 - May be corrosive to metals.
8.2C	H314 - Causes severe skin burns and eye damage.
8.3A	H318 - Causes serious eye damage.
9.1A	H400 - Very toxic to aquatic life.
9.2A	H421 - Very toxic to the soil environment.
9.3C	H433 - Harmful to terrestrial vertebrates.

Precautionary Statements

- P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P103 - Read label before use.
P210 - Keep away from heat. No smoking.
P220 - Keep/Store away from clothing/combustible materials.
P221 - Take any precaution to avoid mixing with combustibles.
P234 - Keep only in original container.
P260 - Do not breathe dust.
P264 - Wash hands 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*.
P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363 - Wash contaminated clothing before reuse.
P310 - Immediately call a POISON CENTRE or doctor/physician.
P304+P340 - IF INHALED: Remove to fresh air and keep at rest in a position 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 CENTRE or doctor/physician.
P390 - Absorb spillage to prevent material damage.
P391 - Collect spillage.
P406 - Store in a corrosive resistant container with a resistant inner liner.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local/regional/national/international regulation.

3. Composition / Information on Ingredients

Component	CAS/ Identification	Concentration
Calcium hydroxide	1305-62-0	1-5%
Water	7732-18-5	7-16%
Calcium hypochlorite	7778-54-3	60%

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

4. First Aid

General Information

If medical advice is needed, have product container or label at hand. You should call the National Poisons Centre if you feel that you may have been harmed, burned or irritated by this product. The number is 0800 764 766 (0800 POISON) (24 hr emergency service).

Recommended first aid facilities Ready access to running water is required. Accessible eyewash is required.

Exposure

Swallowed IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting.
Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE or doctor/physician.



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Skin contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Brush off excess solids and rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTRE or doctor/physician.
Inhaled	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, consult a doctor immediately. Symptoms may be delayed by 48 hours.

Advice to Doctor

Treat symptomatically

5. Firefighting Measures

Fire and explosion hazards:	This product is and oxidiser. Oxidising materials can increase the intensity of fire and support combustion of other materials.
Suitable extinguishing substances:	Carbon dioxide, extinguishing powder, foam, fog sprays, water jets.
Unsuitable extinguishing substances:	Unknown.
Products of combustion:	Chlorine, hydrogen chloride gas, compounds of chlorine and calcium. 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

Containment	If greater than 100kg is stored, secondary containment and emergency plans to manage any potential spills must be in place. In all cases design storage to prevent discharge to storm water.
Emergency procedures	In the event of spillage alert the fire brigade to location and give brief description of hazard. Stop the source of the leak, if safe to do so. Shut off all possible sources of ignition. Wear protective equipment to prevent skin, eye and respiratory exposure. Clear area of any unprotected personnel. Contain using sand, earth or vermiculite. Do not use sawdust. Prevent by whatever means possible any spillage from entering drains, sewers, or water courses. (If this occurs contact your regional council immediately).
Clean-up method	Use absorbent (soil, sand or other inert material). Rags are not recommended for the clean-up of spills, as they may create fire or environmental hazard. Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.
Disposal	Not applicable
Precautions	Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation.

7. Storage & Handling

Storage	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. Location compliance certificates must be available if storing >1000kg (closed), 100kg (open). Containers (and outer packaging) must bear the prescribed labelling, including the Hazchem code, UN number, flammability warning and name of contents.
Handling	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.

8. Exposure Controls / Personal Protective Equipment

Workplace Exposure Standards

A workplace exposure standard (WES) has not been established by WorkSafe NZ for this product. There is a general limit of 3mg/m³ for respirable particulates and 10mg/m³ for inhalable particulates when limits have not otherwise been established.

NZ Workplace Exposure Stds	Ingredient	WES-TWA*	WES-STEL
	Calcium hypochlorite	Not listed	Not listed
	Calcium hydroxide	5mg/m ³	Not listed
	Chlorine	0.5ppm, 1.5mg/m ³	1ppm, 2.9mg/m ³



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Engineering Controls

In industrial situations, it is expected that employee exposure to hazardous substances will be controlled to a level as far below the WES as practicable by applying the hierarchy of control required by the Health and Safety at Work Act (2015) and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016. 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

General

Personal Protective Equipment (PPE) should not be used as the primary means of exposure protection, except in the event of an accident or emergency situation or where all other means of protection have proven to inadequate.

Clean PPE after use or dispose of as appropriate. Store PPE for re-use in a clean place. Regular training on the correct use of PPE should be provided. In particular the correct fitting and use of respirators and where applicable the cleaning of respirators should be undertaken.

Eyes



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

Skin



Avoid any skin contact. Wear overalls, rubber boots and impervious gloves. PVC or Neoprene gloves are recommended. Replace frequently. Gloves should be checked for tears or holes before use. 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 WES (section 8). Use a full face respirator with a particulate (dust) filter. If using a respirator, ensure that the cartridges are correct for the potential air contamination and are in good working order. Fit testing and clear guidelines and training for use and maintenance of PPE are necessary.

WES Additional Information

Not applicable

9. Physical & Chemical Properties

Appearance	white solid
Odour	mild chlorine odour
pH	no data
Vapour pressure	no data
Viscosity	no data
Boiling point	no data
Volatile materials	no data
Freezing / melting point	no data
Solubility	moderately soluble
Specific gravity / density	2.35g/cm ³
Flash point	no data
Decomposition Point	~180°C
Danger of explosion	no data
Auto-ignition temperature	no data
Upper & lower flammable limits	no data
Corrosiveness	corrosive

10. Stability & Reactivity

Stability	Stable
Conditions to be avoided	Oxidising substance - keep away from sources of ignition and flammable and combustible materials. Store in a cool place, preferably below 30°C. Keep containers tightly closed. Containers should be kept dry. Keep containers and surrounding areas well ventilated.
Incompatible groups	Dichloroisocyanuric acid, Ammonium Nitrate, Trichloroisocyanuric acid, or any Chloroisocyanurate, strong acids, aluminium, iron, lead, magnesium, and zinc. Incompatible with organic materials, combustible materials, reducing agents, Ammonia, Nitrogen compounds, acidic materials, and Chlorinated Isocyanuric acid (organic)



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Substance Specific Incompatibility	bleaching powder).
Hazardous decomposition products	none known
Hazardous reactions	Chlorine, Hydrogen chloride gas, other compounds of chlorine, calcium compounds.
	This product will not undergo polymerisation reactions.

11. Toxicological Information

Summary

IF SWALLOWED: harmful if swallowed. The substance is highly irritating to mouth, throat and gastrointestinal system causing pain and blistering.

IF IN EYES: causes eye damage, with stinging, reddening and watering of the eye. The eye lids may swell and blurred vision may also become evident.

IF ON SKIN: may cause skin burns, if left on skin for a lengthy period.

IF INHALED: dusts may be irritating to the respiratory system. Symptoms may include headaches, irritation of the nose and throat.

Supporting Data

Acute	Oral	Using LD ₅₀ 's for ingredients, the calculated LD ₅₀ (oral, rat) for the mixture is between 300 and 2000 mg/kg. Data considered includes: calcium hypochlorite 850mg/kg (rat).
	Dermal	No evidence of dermal toxicity.
	Inhaled	NO evidence of acute inhalation toxicity.
	Eye	Calcium hypochlorite is considered an eye corrosive.
	Skin	Calcium hypochlorite is considered a skin corrosive.
Chronic	Sensitisation	No ingredient present at concentrations > 0.1% is considered a sensitizer.
	Mutagenicity	No ingredient present at concentrations > 0.1% is considered a mutagen.
	Carcinogenicity	No ingredient present at concentrations > 0.1% is considered a carcinogen.
	Reproductive / Developmental	No ingredient present at concentrations > 0.1% is considered a reproductive or developmental toxicant or have any effects on or via lactation.
	Systemic	No ingredient present at concentrations > 1% is considered a target organ toxicant.
	Aggravation of existing conditions	None known.

12. Ecological Data

Summary

This substance is considered very toxic towards aquatic organisms, toxic in the soil environment and harmful towards terrestrial vertebrates.

Supporting Data

Aquatic	Using EC ₅₀ 's for ingredients, the calculated EC ₅₀ for the mixture is < 1 mg/L. Data considered includes: calcium hypochlorite 0.016mg/L - 0.033mg/L (96h, <i>Osmerus mordax</i>), 0.067-0.079mg/L (48h, <i>Daphnia magna</i>).
Bioaccumulation	No data
Degradability	No data
Soil	Calcium hypochlorite is classed by EPA as toxic towards soil organisms.
Terrestrial vertebrate	This substance is harmful towards terrestrial vertebrates, see acute toxicity.
Terrestrial invertebrate	No evidence of toxicity towards terrestrial invertebrates.

13. Disposal Considerations

Restrictions	There are no product-specific restrictions, however, local council and resource consent conditions may apply, including requirements of trade waste consents.
Disposal method	Disposal of this product must comply with the Hazardous Substances (Disposal) Notice 2017 and the requirements of the Resource Management Act for which approval should be sought from the Regional Authority. The substance must be treated and therefore rendered non-hazardous before discharge to the environment.
Contaminated packaging	Disposal of contaminated packaging must comply with the Hazardous Substances (Disposal) Notice 2017 clause 12. Ensure that the package is rendered incapable of containing any substance and is disposed in a manner that is consistent with the requirements of the substance it contained and the material of the package. If possible reuse or recycle packaging.



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14. Transport Information

Land Transport Rule: Dangerous Goods 2005 - NZS 5433:2007

Transport according to NZS 5433 (Transport of Hazardous Substances on Land). Considered a dangerous good for transport.

UN number:	2880	Proper shipping name:	CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, with not less than 5.5% but not more than 16% water
Class(es)	5.1	Packing group:	II
Precautions:	oxidiser	Hazchem code:	1W

IMDG

UN number:	2880	Proper shipping name:	CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, with not less than 5.5% but not more than 16% water
Class(es)	5.1	Packing group:	II
Precautions:	oxidiser	EmS	F-H, S-Q

IATA

UN number:	2880	Proper shipping name:	CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, with not less than 5.5% but not more than 16% water
Class(es)	5.1	Packing group:	II
Precautions:	oxidiser	ERG guide	140

15. Regulatory Information

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR006978, Calcium hypochlorite, hydrated, with not less than 5.5% but not more than 16% water. All ingredients appear on the NZIoC.

Specific Controls

Key workplace requirements are:

SDS	To be available within 10 minutes in workplaces storing any quantity.
Inventory	An inventory of all hazardous substances must be prepared and maintained.
Packaging	All hazardous substances should be appropriately packaged including substances that have been decanted, transferred or manufactured for own use or have been supplied
Labelling	Must comply with the Hazardous Substances (Labelling) Notice 2017.
Emergency plan	Required if > 100kg is stored.
Certified handler	Not required.
Tracking	Not required.
Bunding & secondary containment	Not required – non pooling substance.
Signage	Required if > 100kg is stored in any one location.
Location compliance certificate	Required if > 1000kg (closed), 100kg (open) is stored in any one location.
Flammable zone	Must be established if > not required is stored in any one location.
Fire extinguisher	If > 500kg present.

Note: The above workplace requirements apply if only this particular substance is present. The complete set of controls for a location will depend on the classification and total quantities of other substances present in that location.

Other Legislation

In New Zealand, the use of this product may come under the Resource Management Act and Regulations, the Health and Safety at Work Act 2015 and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, local Council Rules and Regional Council Plans.



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16. Other Information

Abbreviations

Approval Code	Approval HSR006978, Calcium hypochlorite, hydrated, with not less than 5.5% but not more than 16% water, Controls, EPA. www.epa.govt.nz
CAS Number	Unique Chemical Abstracts Service Registry Number
EC₅₀	Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species)
EPA	Environmental Protection Authority (New Zealand)
GHS	Globally Harmonised System of Classification and Labelling of Chemicals, 7 th revised edition, 2017, published by the United Nations.
HAZCHEM Code	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters
HSNO	Hazardous Substances and New Organisms (Act and Regulations)
IARC	International Agency for Research on Cancer
LEL	Lower Explosive Limit
LD₅₀	Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).
LC₅₀	Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population (usually rats)
NZIoC	New Zealand Inventory of Chemicals
MSDS (SDS)	Material Safety Data Sheet (or Safety Data Sheet)
STEL	Short Term Exposure Limit - The maximum airborne concentration of a chemical or biological agent to which a worker may be exposed in any 15 minute period, provided the TWA is not exceeded
STOT RE	System Target Organ Toxicity – Repeated Exposure
STOT SE	System Target Organ Toxicity – Single Exposure
TWA	Time Weighted Average – generally referred to WES averaged over typical work day (usually 8 hours)
UEL	Upper Explosive Limit
UN Number	United Nations Number
WES	Workplace Exposure Standard - The airborne concentration of a biological or chemical agent to which a worker may be exposed during work hours (usually 8 hours, 5 days a week). The WES relates to exposure that has been measured by personal monitoring using procedures that gather air samples in the worker's breathing zone.

References

Data	Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID).
Controls	EPA notices, www.epa.govt.nz , Health and Safety at Work (Hazardous Substances) Regulations 2017, www.legislation.govt.nz
WES	The latest NZ Workplace Exposure Standards, published by WorkSafe NZ and available on their web site – www.worksafe.govt.nz .
Other References:	Suppliers SDS, EU ECHA, ingredients SDS's, ChemIDplus

Review

Date	Reason for review
23 July 2021	Not applicable – new SDS

Disclaimer

This SDS was prepared by Datachem LTD and is based on our current state of knowledge, including information obtained from suppliers. The SDS 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 SDS) AND HOW THE SUBSTANCE IS USED. While guidelines are given for personal protective equipment, such precautions must be relevant to the use. The likely HSNO and GHS 7 classifications for this SDS have been estimated based on general information from the supplier (e.g., hazard, toxicological). This SDS is copyright Datachem and must not be copied, edited or used for other than intended purpose. To contact the SDS author, email info@datachem.co.nz or phone: +64 9 940 30 80.

