

First print date: March 2014

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier:

Identification as on the label/Trade name: HTH® Granular+ Mineralssoft™ Pool Chlorine

Additional information: Product Codes: 2B, 4B, 10B, 15B, 25B

Relevant identification uses of the substance and uses advised against:

Identified uses: Swimming pool sanitation.

Uses advised against: Anything other than swimming pools.-

Details of the supplier of the Safety Data Sheet:

Arch Water Products South Africa (Pty) Ltd.

(Reg. No. 1972/014058/07)

P O Box 150, Kempton Park, 1620

Situated At: NCP Chlookop Factory Site

Hytor Street

Chlookop

Kempton Park, 1619

Emergency telephone numbers:

Poisons Information Centre: 0861 555 777 (24 hours)
+27 11 976 2115 (office hours only)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substances or mixture:

The mixture is classified according to:

SANS 10234:2008, Regulation EC 1272/2008 [EU-GHS/CLP]

Hazard classes/Hazard categories

Oxidising Solid (Category 2)
Acute Toxicity Oral (Category 4)
Skin Corrosion (Category 1B)
Serious Eye Damage (Category 1)
Acute Toxicity Inhalation (Category 3)
Specific Organ Toxicity single exposure (Category 3)
Aquatic Acute (Category 1)

Hazard statement

H272
H302
H314
H318
H331
H335
H400

Safety Data Sheet (SDS) HTH® Granular+ Mineralsoft™ Pool Chlorine

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According to ISO &SANS 11014:2010 & SANS 10234
Revision Date: 17 June 2016

Lonza

For full text of H-Statements see section 16

The most important adverse effects:

The most important adverse physiochemical effects: Oxidising solid.

The most important adverse human health effects: Toxic if inhaled, causes skin burns and serious eye damage.

Label elements:

Hazard pictograms:



Signal Words: DANGER

Hazard Statements: H272 May intensify fire; oxidiser. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H331 Toxic if inhaled. H335 May cause respiratory irritation. H400 Very toxic to aquatic life.

Precautionary Statements: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P220 Keep/Store away from clothing/ combustible materials. P221 take any precaution to avoid mixing with combustibles. P260 Do not breathe dust or fumes. P264 Wash thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 use only outdoors or in a well-ventilated area. P280 wear protective gloves/clothing/eye protection/face protection. P284 Wear respiratory protection. P301+P312+P330 IF SWALLOWED: Call a POISON CENTER 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): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340+P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call POISON CENTRE or doctor/physicians. P305+P351+P338 + P310 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 CENTER or doctor/ physician. P321 Immediately call a POISON CENTER or doctor/ physician if you feel unwell. P363 Wash contaminated clothing before reuse. P370+P378 In case of fire: Use dry sand, dry chemical or alcohol resistant foam to extinguish. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up. P501 Dispose of contents/container in accordance with local/regional regulations.

Special labelling of certain mixtures: None known.

Other hazards: None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Substance/Mixture:** Mixture**Ingredients:**

Substance name (IUPAC)	CAS-No.	Concentration % by weight	Classification EC1272/2008
	EC-No.		
Calcium hypochlorite	7778-54-3	60-80	Oxidizing Solid (Category 2) H272. Acute Toxicity oral (Category 4) H302. Skin Corrosion (Category 1B) H314. Aquatic Acute (Category 1) H400.
	231-908-7		
Calcium chloride	10043-52-4	0.1-5	Eye irritant (Category 2) H319.
	233-140-8		
Calcium hydroxide	1305-62-0	0.1-4	Skin Irritation (Category 2) H315. Serious Eye Damage (Category 1) H318. STOT SE (Category 3) H335.
	215-137-3		

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available listed in Section 8.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4. FIRST AID MEASURES**Description of first aid measures:**

General Advice: Call the Poison Information Centre or doctor for treatment advice. Have the product container or label with you when calling a poison control centre or doctor, or going for treatment.

In case of inhalation: Call the Poison Centre or doctor IMMEDIATELY for treatment advice, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for at least 15-20 minutes. Call the Poison Centre or doctor for treatment advice.

In case of eye contact: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the initial 5 minutes, then continue rinsing eye. Seek medical attention immediately.

In case of ingestion: Call the Poison Centre or doctor IMMEDIATELY for treatment advice. Have person sip a glass of water if able to swallow. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:

Inhalation: Corrosive. Extremely destructive to tissues of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, and shortness of breath, headache, nausea and vomiting. Inhalation may be fatal as a result of spasm inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.

Ingestion: Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach. Can cause sore throat, vomiting, diarrhoea.

Skin Contact: Corrosive. Symptoms of redness, pain, and severe burns can occur.

Eye Contact: Corrosive. Contact can cause blurred vision, redness, pain and severe tissue burns.

Indication of any immediate medical attention and special treatment needed:

Probable mucosal damage may contraindicate the use of gastric lavage.

SECTION 5. FIREFIGHTING MEASURES

Extinguisher media:

Suitable extinguisher media: Water only.

Unsuitable extinguishing media: Do not use dry extinguishers containing ammonium compounds.

Special hazards arising from the mixture:

Sealed containers may rupture when heated. An explosion can occur if either a carbon tetrachloride or a dry ammonium compound fire extinguisher is used to extinguish a fire involving calcium hypochlorite.

Advice for fire-fighters:

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire.

Additional information:

This product is chemically reactive with many substances. Any contamination of the product with other substances by spill or otherwise may result in a chemical reaction and fire. This product is a strong oxidizer which is capable of intensifying a fire once started. Product is not known to be flammable, combustible or pyrophoric.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Response to a large quantity spill or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied by air respirator or self-contained breathing apparatus (SCBA), chemical resistant gloves, coveralls and boots. In case of fire, this personal protective equipment should be used in addition to normal fire fighter equipment.

For non-emergency personnel: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Avoid inhalation, and contact with skin. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

For emergency responders: Remove all sources of ignition. Keep water away from spilled material. Refer to Methods for containment and cleaning up.

Environmental precautions:

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.

Methods for containment and cleaning up:

Air release: Vapours may be suppressed by the use of water fog. All water utilized to assist in fume suppression, decontamination or fire suppression may be contaminated and must be contained before disposal and/or treatment.

Water release: This product is heavier than water. This material is soluble in water. Monitor all exit water for available chlorine and pH. Advise local authorities of any contaminated water release.

Land release: DANGER: 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 or great intensity. In case of a spill, separate all spilled product from packaging, debris, and other material. Using a clean broom / shovel, place all spilled product into plastic bags, and place those bags into a clean, dry disposal container, properly marked and labelled. 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 products) before disposal. Place all undamaged packaging in a clean, dry container properly marked and labelled. Dispose of in accordance with municipal, provincial and national regulations.

Reference to other sections:

See section 7 for information on safe handling.

See section 8 for information on personal protection equipment.

See section 13 for information on disposal.

Additional information:

Hazardous concentrations in air may be found in local spill area and immediately downwind. Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:

Precautions for safe handling: Avoid inhalation of dust and fumes. Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Remove contaminated clothing and wash before reuse.

According to ISO &SANS 11014:2010 & SANS 10234
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Protective measures: Observe directions on label and instructions for use. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage, including incompatibilities:

Storage: Keep product tightly sealed in original containers. Store product in a cool, dry, well-ventilated area. Store away from combustible or flammable products. Keep product clean and free of all contamination, including, e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidisers, all corrosive liquids, flammable or combustible materials, etc.

Shelf Life Limitations: Do not store product where the average daily temperature exceeds 35°C / 95°F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperatures. Store in cool, dry and well-ventilated area. Prolonged storage at elevated temperatures will significantly shorten the shelf life. Storage in a climate controlled storage area or building is recommended in those areas where extremes of high temperature occur.

Incompatible materials for storage: Do not allow product to come in to contact with other materials including e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc. A chemical reaction with such substances can cause a fire of great intensity.

Do not store at temperatures above: Average daily temperature of 35°C (95°F). Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible materials.

Specific end uses: Use only as directed.

Shelf Life Limitations: Do not store product where the average daily temperature exceeds 35°C / 95°F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperatures. Store in cool, dry and well ventilated area. Prolonged storage at elevated temperatures will significantly shorten the shelf life. Storage in a climate controlled storage area or building is recommended in those areas where extremes of high temperature occur.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Occupational exposure limits:

Components (CAS-No.)	Value	Control parameters	Basis (Update)
Calcium hypochlorite (7778-54-3)	TWA	1 mg/m ³	ARCH OEL*
Calcium hypochlorite (7778-54-3)	Conc	37-48 mg/m ³	NIOSH/Guide IDLH

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Calcium hydroxide (1305-62-0)	TWA	5 mg/m ³	ACGIH (02 2014)
Calcium hydroxide (1305-62-0)	TWA OEL-RL	5 mg/m ³	OHS Act 85 of 1993

*Arch (Lonza) recommended occupational exposure guideline

Biological exposure indices (BEI): No data available.

Additional exposure limits under the conditions of use: No data available.

Exposure control:

Appropriate engineering controls: Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure limit.

Protective equipment for routine use of product:

Respiratory Protection: Use an approved air-purifying respirator if levels above exposure limits are possible. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten times the published limit.

Skin protection: Wear impervious gloves to avoid skin contact. A full impervious suit is recommended if exposure is possible to a large portion of the body.

Protective clothing type: Neoprene, nitrile, natural rubber (includes: gloves, boots, apron and protective suit).

Eye protection: Use chemical safety goggles.

General Protection Measures: An eye wash and safety shower should be provided in the immediate work area.

Environmental exposure controls: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (form): Solid granules.

Colour: White or grey-white.

Odour: Chlorine odour.

Odour threshold: Not known.

pH (1% solution): 10.5-11.5

Melting point/range (°C): Decomposes above 177°C (350°F), releasing oxygen.

Boiling point/range (°C): Not known.

Flash point (°C): Not known.

Evaporation rate: Not known.

Flammability (solid, gas, liquid): Not flammable.

Ignition temperature (°C): Not known.

Upper/lower flammability/explosive limits: Not applicable.

Vapour pressure (20°C): Not known.

Vapour density: 6.9

Relative density (25°C): Not known.

Water solubility (g/l) at 25°C: Approximately 18%, product also contains calcium hydroxide and calcium carbonate, which will leave a residue.

n-Octanol/ Water partition coefficient: Not known.

Auto-ignition temperature: Not known.

Decomposition temperature: 170 – 180 °C releasing oxygen.

Viscosity, dynamic (mPa s): Not known.

Physical hazards:

Oxidiser.

Other information:

Volatiles by volume @ 21°C (70°F): 0 %

Fat solubility (solvent-oil to be specified): Not known.

Bulk density: Not known.

Dissociation constant in water (p Ka): Not known.

Oxidation-reduction potential: Not known.

SECTION 10. STABILITY AND REACTIVITY

Reactivity:

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 oxidizer 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. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gasses and spatter. Use copious amounts of water for fires involving this product.

Chemical stability:

Stable under recommended conditions of storage. Product will not undergo hazardous polymerization.

Possibility of hazardous reactions:

Hazardous polymerization is not expected to occur.

Conditions to avoid:

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 / 95°F. Prevent ingress of humidity and moisture into container or package. Always close the lid.

Incompatible materials:

This product is chemically reactive with many substances e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, 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 release toxic gases. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter.

Hazardous decomposition products:

Chlorine.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicokinetics, metabolism and distribution:

Non-human toxicological data: No data available.

Method: No data available.

Dosage: No data available.

Routes of administration: No data available.

Results: No data available.

Absorption: No data available.

Distribution: No data available.

Metabolism: No data available.

Excretion: No data available.

Information on toxicological effects:

Acute toxicity:

HTH Granular pool chlorine

Acute oral LD₅₀ for rat 800 mg/kg (estimated), Acute Toxicity Category 4.

Dermal LD₅₀ for rabbit >2000 mg/kg (estimated).

Inhalation LC₅₀ (4 h) nose only for rat >0.51 mg/L, Acute Toxicity Category 3 for dust/mists.

Calcium hypochlorite: (65 % calcium hypochlorite).

Acute LD₅₀ Oral for rat 850 mg/kg.

Dermal LD₅₀ for rabbit >2000 mg/kg.

Inhalation LC₅₀ (4 h) nose only rat 0.51 mg/L.

Calcium chloride:

Acute LD₅₀ Oral for rat 1000 mg/kg.

Dermal LD₅₀ for rabbit 2630 mg/kg.

Calcium hydroxide:

Acute LD₅₀ Oral for rat 7 340 mg/kg.

Skin corrosion/irritation: DRY MATERIAL CAUSES MODERATE SKIN IRRITATION, WET MATERIAL CAUSES SKIN BURNS.

Serious eye damage/irritation: Corrosive to eyes.

Respiratory or skin sensitization: This material is not known or reported to be a skin or respiratory sensitiser.

Germ cell mutagenicity: Calcium hypochlorite has been tested in the Dominant lethal assay in male mice, and it did not induce a dominant lethal response. Calcium hypochlorite has been reported to produce mutagenic activity in two in vitro assays. It has, however, been shown to lack the capability to produce mutations in animals based on results from the micronucleus assay. In vitro assays frequently are inappropriate to judge the mutagenic potential of bactericidal chemicals due to a higher degree of cellular toxicity. The concentration which produces mutations in these in vitro assays is significantly greater than the concentrations used for disinfection. Based on the high cellular toxicity in in vitro assays and the lack of mutagenicity in animals, the risk of genetic damage to humans is judged not significant. Calcium chloride was determined to be non-mutagenic in the Ames assay. It was also shown to be non-clastogenic in the chromosomal aberration test.

Carcinogenicity: Calcium hypochlorite: IARC category 3. This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. One hundred mice were exposed dermally 3 times a week for 18 months to a solution of calcium hypochlorite. Histopathological examination failed to show an increased incidence of tumours. IARC (International Agency for Research on Cancer) reviewed studies conducted with several hypochlorite salts. IARC

has classified hypochlorite salts as having inadequate evidence for carcinogenicity to humans and animals. IARC therefore considers hypochlorite salts to be not classifiable as to their carcinogenicity to humans.

Reproductive toxicity: Calcium hypochlorite has been tested for teratogenicity in laboratory animals. Results of this study have shown that calcium hypochlorite is not a teratogen.

STOT-single exposure: No data available.

STOT-repeated exposure: No data available.

Aspiration hazard: No data available.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity:

Highly toxic to fish and other aquatic organisms.

Calcium hypochlorite:

Birds: Oral LD₅₀ for Bobwhite quail 3 474 mg/kg, LC₅₀ dietary Mallard ducklings >5000 mg/kg, dietary Bobwhite quail >5000 mg/kg.

Fish: LC₅₀ (96 h) for Bluegill (nominal, static) 0.088 mg/L, Rainbow trout (*Salmo gairdneri*) (nominal, static) 0.016 mg/L.

Daphnia: LC₅₀ (48 h) *Daphnia magna* (nominal, static) 0.11 mg/L.

Calcium chloride:

Fish: LC₅₀ (96 h) for Bluegill (nominal, static) 10 650 mg/L, Mosquito fish (nominal, static) 13 400 mg/L, *Pimephales promelas* (fathead minnow) (nominal, static) 4 630 mg/L.

Daphnia: LC₅₀ (48 h) *Daphnia magna* (nominal, static) 2 770 mg/L.

Other aquatic species: LC₅₀ (48 h) *Ceriodaphnia dubia* (nominal, static) 1 830 mg/L, LC₅₀ (5 day) *Nitzschia linearis* (nominal, static) 3 130 mg/L.

Persistence and degradability:

No data available.

Bioaccumulative potential:

No data available.

Mobility in soil

No data available.

Results of PBT& vPvB assessment:

No data available.

Other adverse effects:

No data available.

SECTION 13. DISPOSAL CONSIDERATIONS**Waste treatment methods:**

Dispose of in accordance with municipal, provincial and national regulations.

Product/ packaging disposal:

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, NATIONAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

SECTION 14. TRANSPORT INFORMATION

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number	1748	1748	1748
UN Proper shipping name:	CALCIUM HYPOCHLORITE, DRY	CALCIUM HYPOCHLORITE, DRY	CALCIUM HYPOCHLORITE, DRY
Transport hazard class:	5.1	5.1	5.1
Packaging group:	II	II	II
Marine pollutant:	Yes	Yes	Yes
Special precautions for user:	No information	No information	No information
Transport in bulk according to MARPOL 73/78 Annex II and the IBC code	No information	No information	No information

SECTION 15. REGULATORY INFORMATION**Safety, health and environmental regulations/legislation for the mixture:**

Relevant information regarding authorization: Occupational Health and Safety Act 1993
Regulation for Hazardous Chemical Substances.

Relevant information regarding restrictions: None known.

EU regulations: Regulation EC 1272/2008 [EU-GHS/CLP]

Other National regulations: None.

Chemical Safety Assessment carried out? No.

SECTION 16. OTHER INFORMATION

Indication of changes:

GHS aligned.

Relevant classification and H statements (number and full text):

STOT SE (Category 3): Specific Target Organ Toxicity single exposure (Category 3)

Aquatic Acute (Category 1): Hazardous to the Aquatic Environment Acute 1

H272 May intensify fire; oxidiser. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H318 Causes serious eye damage. H319 Causes serious eye irritation. H331 Toxic by inhalation. H335 May cause respiratory irritation. H400 Very toxic to aquatic life.

Training instructions:

Use as instructed.

Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Notice to readers:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees.

This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.