SAFETY DATA SHEET

according to US Regulation 29 CFR 1910.1200 and the Canadian HPA

HTH® SUPER 70

Version 1.1 | Revision Date 2019.05.07 | Print Date 2019.05.15

SECTION 1. IDENTIFICATION

Product name	:	HTH® SUPER 70
PMRA Registration number	:	21958, 21959

Manufacturer or supplier's details

Company	:	Arch Chemicals, Inc. 1200 Bluegrass Lakes Parkway Alpharetta, GA 30004 United States of America (USA)
E-mail address	:	sds@lonza.com
Emergency telephone number	:	In case of emergency call CHEMTREC US: 1-800-424-9300, CHEMTREC WORLD-WIDE: +1-703-527-3887.

Recommended use of the chemical and restrictions on use

Recommended use	:	Water treatment chemical

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Oxidizing solids	:	Category 2
Acute toxicity (Oral)	:	Category 4
Acute toxicity (Inhalation)	:	Category 3
Skin corrosion	:	Category 1B
Serious eye damage	:	Category 1
Specific target organ toxicity - single exposure	:	Category 3 (Respiratory system)

GHS label elements

Hazard pictograms :

Signal word	:	Danger
Hazard statements	:	H272 May intensify fire; oxidizer. H302 Harmful if swallowed. H331 Toxic if inhaled. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation.

Precautionary statements : **Prevention:**
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/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin 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/ protective clothing/ eye protection/ face protection.
Response:
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor 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.
P304 + P340 IF INHALED: Remove victim 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 CENTER/doctor.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use water spray to extinguish.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
Disposal:
P501 Dispose of contents/container in accordance with local regulation.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture

Hazardous components

Chemical name / Synonyms	CAS-No.	Concentration (% w/w)
Calcium hypochlorite	7778-54-3	65 - 75
Calcium chlorate	10137-74-3	0 - 5
Calcium chloride	10043-52-4	0 - 5
Calcium dihydroxide	1305-62-0	0 - 4

SECTION 4. FIRST AID MEASURES

General advice : Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. Have the product container or label with you when calling a poison con-

		trol center or doctor, or going for treatment.
If inhaled	:	IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
In case of skin contact	:	IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
In case of eye contact	:	IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If swallowed	:	IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	:	None known.
Notes to physician	:	Probable mucosal damage may contraindicate the use of gastric lavage.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water only. Do not use dry extinguishers containing ammonium compounds.
Specific hazards during firefighting	:	Strong oxidizer
Further information	:	Use water to cool containers exposed to fire. See Section 6 for protective equipment for fire fighting.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Response to a large quantity spill (100 pounds or greater) or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied air repirator 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. 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. Contact 1-800-654-6911 immediately. 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 of great intensity. In case of a spill, 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 labeled. 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. Call for disposal procedures. Dispose of spill residues per guidelines under Section 13, Disposal Consideration.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Sweep up and shovel into suitable containers for disposal. Do not flush into surface water or sanitary sewer system. Avoid dust formation.

SECTION 7. HANDLING AND STORAGE

Advice on 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.
Conditions for safe 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 packaging 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), oxidizers, all corrosive liquids, flammable or combustible materials, etc.
Materials to avoid	:	Do not allow product to come in 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.
Further information on storage stability	:	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 products.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Calcium dihydroxide	1305-62-0	TWA	5 mg/m3	ACGIH
		REL	5 mg/m3	NIOSH/GUIDE
		PEL (Total dust.)	15 mg/m3	OSHA_TRANS
		PEL (Respirable fraction.)	5 mg/m3	OSHA_TRANS
		TWA	5 mg/m3	Z1A

Engineering measures : Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep airborne exposures below the TLV, PEL or other recommended exposure limit.

Personal protective equipment

Respiratory protection : Wear a NIOSH approved respirator if levels above the exposure limits are possible.
A NIOSH approved full-face air purifying respirator equipped with combination chlorine/P100 cartridges. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Hand protection

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

Eye protection : Use chemical goggles.

Skin and body protection : Neoprene, Nitrile, Natural rubber (This includes: gloves, boots, apron, protective suit)

Protective measures : An eye wash and safety shower should be provided in the immediate work area.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : free flowing, granular

Colour : white

Odour : Chlorine-like

Odour Threshold : no data available

pH : 10.4 - 10.8 (77 °F / 25 °C)
Concentration: 1 %
(as aqueous solution)

Melting point/freezing point	:	Not applicable
Boiling point/boiling range	:	Not applicable
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	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.
Flammability (liquids)	:	no data available
Self-ignition	:	Not applicable
Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Relative density	:	Not applicable
Density	:	0.8 g/cm3 (77 °F / 25 °C)
Water solubility	:	Approximately 18%, Product also contains calcium hydroxide and calcium carbonate which will leave a residue.
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Decomposition temperature	:	338 - 356 °F / 170 - 180 °C
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
Oxidizing properties	:	Oxidizing
Oxidizing potential	:	Not relevant
Molecular weight	:	143 g/mol

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	:	NFPA Oxidizer Class: Meets the criteria of an NFPA Class 3 Oxidizer
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 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, including, e.g., other pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, 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.
Hazardous decomposition products	:	Chlorine

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Acute oral toxicity	:	LD50 (Rat): approximately 800 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 2.04 mg/l Exposure time: 1 h Remarks: (Nose Only) LC50 (Rat): > 0.51 mg/l Exposure time: 4 h Remarks: (Nose Only)
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg

Skin corrosion/irritation

Remarks: DRY MATERIAL CAUSES MODERATE SKIN IRRITATION.
WET MATERIAL CAUSES SKIN BURNS.

Serious eye damage/eye irritation

Result: Corrosive to eyes

Respiratory or skin sensitisation

Remarks: This material is not known or reported to be a skin or respiratory sensitizer.

Carcinogenicity

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcin-

ogen by ACGIH.

Further information
Remarks: no data available

The following toxicological data refer to:

Calcium hypochlorite(CAS-No.: 7778-54-3)

Acute toxicity

Acute oral toxicity	:	LD50 (Rat): 850 mg/kg

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

Other adverse effects

Ozone-Depletion Potential	:	Regulation: US. EPA Clean Air Act (CAA) Section 602 Ozone-Depleting Substances (40 CFR 82, Subpt. A, App A & B) Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
Additional ecological information	:	Highly toxic to fish and other aquatic organisms.

The following ecotoxicological data refer to:

Calcium hypochlorite(CAS-No.: 7778-54-3)

Ecotoxicity

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.057 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.067 mg/l Exposure time: 48 h
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to terrestrial organisms	:	Dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5,000 ppm Oral LD50 (Colinus virginianus (Bobwhite quail)): 3,474 mg/kg

Dietary LC50 (Mallard ducklings): > 5,000 ppm

Persistence and degradability

Biodegradability : Result: no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

Other adverse effects

no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001.
As a hazardous solid waste, it must be disposed of in accordance with local, state and federal regulations.

SECTION 14. TRANSPORT INFORMATION

DOT

UN number	:	2880
Proper shipping name	:	Calcium hypochlorite, hydrated mixtures
Transport hazard class	:	5.1
Packing group	:	II
Labels	:	5.1
Emergency Response Guidebook Number	:	140
Environmental hazards	:	yes

TDG

UN number	:	2880
Proper shipping name	:	CALCIUM HYPOCHLORITE, HYDRATED MIXTURE
Transport hazard class	:	5.1
Packing group	:	II
Labels	:	5.1
Environmental hazards	:	yes

IATA

UN number	:	2880
Proper shipping name	:	Calcium hypochlorite, hydrated mixture
Transport hazard class	:	5.1
Packing group	:	II
Labels	:	5.1
Environmental hazards	:	yes

IMDG

UN number	:	2880
Proper shipping name	:	Calcium hypochlorite, hydrated mixture
Transport hazard class	:	5.1
Packing group	:	II
Labels	:	5.1
EmS Number 1	:	F-H
EmS Number 2	:	S-Q
Environmental hazards	:	Marine pollutant: yes

ADR

UN number	:	2880
Proper shipping name	:	CALCIUM HYPOCHLORITE, HYDRATED MIXTURE
Transport hazard class	:	5.1
Packing group	:	II
Classification Code	:	O2
Hazard Identification Number	:	50
Labels	:	5.1
Environmental hazards	:	yes

RID

UN number	:	2880
Proper shipping name	:	CALCIUM HYPOCHLORITE, HYDRATED MIXTURE
Transport hazard class	:	5.1
Packing group	:	II
Classification Code	:	O2
Hazard Identification Number	:	50
Labels	:	5.1
Environmental hazards	:	yes

Special precautions for user	:	none
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	:	Not applicable

SECTION 15. REGULATORY INFORMATION

This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain label.

Read the approved label, authorized under the Pest Control Products Act, prior to using or handling the pest control product.

PMRA Registration number : 21958, 21959

Hazard pictograms :

Signal word : WARNING!

Hazard statements : Corrosive. Causes skin burns.
Corrosive - causes irreversible eye damage.
May be fatal if swallowed.
This pesticide is toxic to fish.
Pesticide is toxic to aquatic organisms.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Calcium hypochlorite	7778-54-3	10	13

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards

See above: SECTION 2. Hazard Identification-GHS Classification

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.

Clean Water Act

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Components	CAS-No.	Component RQ (lbs)
Calcium hypochlorite	7778-54-3	10

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Components	CAS-No.	Concentration
Calcium hypochlorite	7778-54-3	65 - 75 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

Components	CAS-No.
Calcium hypochlorite	7778-54-3
Calcium chlorate	10137-74-3
Calcium carbonate	471-34-1
Calcium dihydroxide	1305-62-0

Pennsylvania Right To Know

Components	CAS-No.
Calcium hypochlorite	7778-54-3
Sodium chloride	7647-14-5
Calcium chloride	10043-52-4
Calcium chlorate	10137-74-3
Calcium carbonate	471-34-1
Calcium dihydroxide	1305-62-0

New Jersey Right To Know

Components	CAS-No.
Calcium hypochlorite	7778-54-3
Sodium chloride	7647-14-5
Calcium chloride	10043-52-4
Calcium chlorate	10137-74-3
Calcium carbonate	471-34-1
Calcium dihydroxide	1305-62-0

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Canadian lists

NPRI

Canadian National Pollutant Release Inventory (NPRI): No component is listed on NPRI.

The components of this product are reported in the following inventories:

TSCA : This is an EPA registered pesticide.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	US. ACGIH Threshold Limit Values
NIOSH/GUIDE	:	US. NIOSH: Pocket Guide to Chemical Hazards
OSHA_TRANS	:	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
Z1A	:	US. OSHA Table Z-1-A (29 CFR 1910.1000)

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 2019.05.07

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Date format : yyyy/mm/dd