



FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL:

1-800-654-6911 (OUTSIDE
USA: 1-423-780-2970)

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:

1-800-424-9300 (OUTSIDE
USA: 1-703-527-3887)

FOR ALL SDS QUESTIONS & REQUESTS, CALL:

1-800-511-MSDS (OUTSIDE
USA: 1-423-780-2347)

PRODUCT NAME: **CCH Endurance**

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Arch Chemicals, Inc.
1200 Bluegrass Lakes Parkway
Alpharetta, GA 30004
United States of America (USA)

REVISION DATE: 06/26/2017

SUPERCEDES: 06/07/2017

MSDS Number: 000000032591

SYNONYMS: None

CHEMICAL FAMILY: Hypochlorite

DESCRIPTION / USE: Water treatment chemical

FORMULA: None established

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

- Oxidizing solids : Category 3
- Acute toxicity (Oral) : Category 4
- Acute toxicity (Inhalation) : Category 2
- 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.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H330 Fatal if inhaled.
H335 May cause respiratory irritation.

Precautionary statements

- Prevention:**
P210 Keep away from heat.
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.
P284 Wear respiratory protection.
- Response:**
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
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 person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
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/doctor.
P312 Call a POISON CENTER/doctor if you feel unwell.
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 to an approved waste disposal plant.

Other hazards

None known.



SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| <u>CAS OR CHEMICAL NAME</u> | <u>CAS #</u> | <u>% RANGE</u> |
|----------------------------------|--------------|----------------|
| Calcium hypochlorite | 7778-54-3 | 62 - 75 |
| SODIUM CHLORIDE | 7647-14-5 | 0 - 3 |
| Chloric acid, calcium salt (2:1) | 10137-74-3 | 0 - 5 |
| Calcium chloride | 10043-52-4 | 0 - 5 |
| Calcium hydroxide | 1305-62-0 | 7 - 16 |
| Calcium carbonate | 471-34-1 | 0 - 4 |
| Aqua | 7732-18-5 | 8 - 15 |

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 control center or doctor, or going for treatment. |
| Inhalation: | 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. |
| 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. |
| 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. |
| Ingestion: | 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. |
| Notes to Physician: | Probable mucosal damage may contraindicate the use of gastric lavage. |



SECTION 5. FIREFIGHTING MEASURES

Flammability Summary (OSHA): 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.

Flammable Properties

Flash Point: Not applicable
Autoignition Temperature: Not applicable
Extinguishing Media: Water only. Do not use dry extinguishers containing ammonium compounds.
Fire Fighting Instructions: Use water to cool containers exposed to fire. See Section 6 for protective equipment for fire fighting.
Upper Flammable / Explosive Limit, % in air: Not applicable
Lower Flammable / Explosive Limit, % in air: Not applicable

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations: 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 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.

Spill Mitigation Procedures

Air Release: Vapors 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: 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.

Additional Spill 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. This material may be neutralized for disposal; you are requested to contact Arch Chemicals at 1-800-654-6911 before beginning any such procedure. FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC: 1-800-424-9300 REPORTABLE QUANTITY: 10 lbs. (as calcium hypochlorite) per 40 CFR 302.4.

SECTION 7. HANDLING AND STORAGE

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.

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.

Shelf Life Limitations: Do not store product where the average daily temperature exceeds 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 a 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. 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.



Incompatible Materials for Storage: 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.

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 products.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: 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.

Protective Equipment for Routine Use of Product

Respiratory Protection : Wear a NIOSH approved respirator if levels above the exposure limits are possible.

Respirator Type : 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.

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.

Eye Protection: Use chemical goggles.

Protective Clothing Type: Neoprene, Nitrile, Natural rubber (This includes: gloves, boots, apron, protective suit)

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

Components with workplace control parameters

| Components (CAS-No.) | Value | Control parameters | Basis (Update) |
|-------------------------------|-------|--------------------|-----------------|
| Calcium hydroxide (1305-62-0) | TWA | 5 mg/m3 | ACGIH (02 2014) |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: solid
 Form: tablet
 Color: blue
 Odor: Chlorine-like
 Molecular Weight: 143 g/mol
 Relative density: Not applicable



| | |
|--|---|
| pH : | 10.5 - 11.5 () (1% solution in neutral, distilled water), (@ 25 Deg. C) |
| Boiling Point: | Not applicable |
| Freezing Point: | Not applicable |
| Density | 0.8 g/cm ³ |
| Vapor Pressure: | Not applicable |
| Vapor Density: | Not applicable |
| Viscosity: | Not applicable |
| Fat Solubility: | no data available |
| Solubility in Water: | Approximately 18%, (@ 25 Deg. C), Product also contains calcium hydroxide and calcium carbonate which will leave a residue. |
| Partition coefficient n-octanol/water: | no data available |
| Evaporation Rate: | Not applicable |
| Oxidizing: | Oxidizing |
| Volatiles, % by vol.: | Not applicable |
| VOC Content | This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCOMI 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. |
| HAP Content | Not applicable |

SECTION 10. STABILITY AND REACTIVITY

| | |
|-----------------------------------|--|
| Stability and Reactivity Summary: | 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 NFPA Class 3 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 gases and spatter. Use copious amounts of water for fires involving this product. Product will not undergo hazardous polymerization. |
| Reactive Properties: | Product is not sensitive to mechanical shock or impact. Product is not sensitive to electrical static discharge. Not pyrophoric. Not an organic peroxide. |
| 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. |
| Chemical Incompatibility: | 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, 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
Decomposition Temperature: 170 - 180 °C - , 338 - 356 °F-

SECTION 11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

| | | | |
|----------------------|------|-------------|-----|
| Calcium hypochlorite | LD50 | 850 mg/kg | Rat |
| SODIUM CHLORIDE | LD50 | 3,000 mg/kg | Rat |
| | LD50 | 3,550 mg/kg | Rat |
| Calcium chloride | LD50 | 2,301 mg/kg | Rat |
| | LD50 | 1,000 mg/kg | Rat |
| Calcium hydroxide | LD50 | 7,340 mg/kg | Rat |

Component Animal Toxicology

Dermal LD50 value:

| | | | |
|------------------|------|----------------|--------|
| SODIUM CHLORIDE | LD50 | > 10,000 mg/kg | Rabbit |
| Calcium chloride | LD50 | > 5,000 mg/kg | Rabbit |
| | LD50 | 2,630 mg/kg | Rat |

Component Animal Toxicology

Inhalation LC50 value:

Product Animal Toxicity

Oral LD50 value: LD50 Believed to be approximately 700 mg/kg Rat

Dermal LD50 value: LD50 Believed to be > 2,000 mg/kg Rabbit

Inhalation LC50 value: LC50 4 h Believed to be approximately 0.425 mg/l Rat LC50 1 h Believed to be approximately 1.7 mg/l Rat

Skin Irritation: DRY MATERIAL CAUSES MODERATE SKIN IRRITATION., WET MATERIAL CAUSES SKIN BURNS.

Eye Irritation: Corrosive to eyes.

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

Acute Toxicity: This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract. The dry material is irritating to the skin. However when wet, it will produce burns to the skin.

Subchronic / Chronic Toxicity:

Reproductive and Developmental Toxicity:



Mutagenicity:

Carcinogenicity:

SECTION 12. ECOLOGICAL INFORMATION

Overview: Highly toxic to fish and other aquatic organisms.

Ecological Toxicity Values for: Calcium hypochlorite

| | | | |
|--|---|--------------|-------------|
| Lepomis macrochirus (Bluegill sunfish) | - | 96 h LC50 | 0.057 mg/l |
| Daphnia magna (Water flea) | - | 48 h EC50 | 0.067 mg/l |
| Colinus virginianus (Bobwhite quail) | - | Dietary LC50 | > 5,000 ppm |
| Colinus virginianus (Bobwhite quail) | - | Oral LD50 | 3,474 mg/kg |
| Mallard ducklings | - | Dietary LC50 | > 5,000 ppm |

Ecological Toxicity Values for: SODIUM CHLORIDE

| | | | |
|------------------------------|---|--------------------------|---------------|
| Carassius auratus (goldfish) | - | Acute toxicity 10 d LC50 | > 10,000 mg/l |
| Daphnia magna (Water flea) | - | Immobilization 48 h EC50 | > 100 mg/l |

Ecological Toxicity Values for: Calcium chloride

| | | | |
|--|---|--|-------------|
| Lepomis macrochirus (Bluegill sunfish) | - | Acute toxicity 96 h LC50 | 10,650 mg/l |
| Daphnia magna (Water flea) | - | 48 h EC50 | 2,400 mg/l |
| Daphnia magna (Water flea) | - | 48 h EC50 | 144 mg/l |
| Chlorella vulgaris (Fresh water algae) | - | Cell multiplication inhibition test 120 h EC10 | 140 mg/l |

Ecological Toxicity Values for: Calcium hydroxide

| | | | |
|----------------------------------|---|--------------------------|----------|
| Gambusia affinis (Mosquito fish) | - | Acute toxicity 96 h LC50 | 160 mg/l |
|----------------------------------|---|--------------------------|----------|

SECTION 13. DISPOSAL CONSIDERATIONS



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, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

Waste Disposal Summary : 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. If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal restrictions under 40 CFR 268 and must be managed accordingly.

Disposal Methods : As a hazardous solid waste it should be disposed of in accordance with local, state and federal regulations.

SECTION 14. TRANSPORT INFORMATION

DOT

UN number : 2880
Description of the goods : Calcium hypochlorite, hydrated mixtures
Class : 5.1
Packing group : III
Labels : 5.1
Emergency Response : 140
Guidebook Number

TDG

UN number : 2880
Description of the goods : CALCIUM HYPOCHLORITE, HYDRATED MIXTURE
Class : 5.1
Packing group : II
Labels : 5.1

IATA

UN number : 2880
Description of the goods : Calcium hypochlorite, hydrated mixture
Class : 5.1
Packing group : III
Labels : 5.1
Packing instruction (cargo aircraft) : 563
Packing instruction (passenger aircraft) : 559
Packing instruction (passenger aircraft) : Y546



IMDG-CODE

UN number : 2880
 Description of the goods : CALCIUM HYPOCHLORITE, HYDRATED MIXTURE
 Class : 5.1
 Packing group : III
 Labels : 5.1
 EmS Number 1 : F-H
 EmS Number 2 : S-Q
 Marine pollutant : yes

SECTION 15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals.

Signal word : DANGER!
 Hazard statements : Corrosive. Causes irreversible eye damage.
 Corrosive. Causes skin burns.
 Harmful if swallowed.
 Harmful if absorbed through skin.
 Harmful if inhaled.
 This pesticide is toxic to fish.
 EPA No. : 1258-1370

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 | |

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 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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 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 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

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 | |

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 dihydroxide | 1305-62-0 |
| Calcium carbonate | 471-34-1 |

Pennsylvania Right To Know

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



New Jersey Right To Know

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

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.

SECTION 16. OTHER INFORMATION

SECTIONS REVISED: Arch is a wholly-owned subsidiary of Lonza and continues to operate as Arch Chemicals, Inc.
Major References : Available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .