

## Section 1 Identification

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 For laboratory and industrial use only.  
 Not for drug, food or household use.

<b>Product</b>	CALCIUM CHLORIDE, ANHYDROUS
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<b>Synonyms</b>	N/A
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## Section 2 Hazards identification

**Signal word:** WARNING

**Pictograms:** GHS07

**Target organs:** None known

**GHS Classification:**

Acute toxicity (Oral) (Category 4)

Eye irritation (Category 2A)

Skin irritation (Category 2)

**GHS Label information: Hazard statement:**

H302: Harmful if swallowed.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

**Precautionary statement:**

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P280: Wear protective gloves/protective clothing/eye protection/face protection

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

P302+P352: IF ON SKIN: Wash with plenty of water and soap.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P330: Rinse mouth.

P332+P313: If skin irritation occurs: Get medical attention.

P337+P313: If eye irritation persists: Get medical attention.

P362+P364: Take off contaminated clothing and wash it before reuse.

P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known

Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

Chemical Name	CAS #	%	EINECS
Calcium chloride	10043-52-4	>91.0%	233-140-8
Water	7732-18-5	4.5%	231-791-2
Potassium chloride	7447-40-7	2.5%	231-211-8
Sodium chloride	7647-14-5	1.5%	231-598-3
Strontium chloride	10476-85-4	0-1%	233-971-6

## Section 4 First aid measures

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES SERIOUS EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** MAY CAUSE IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use any media suitable for extinguishing supporting fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Heat is generated when product mixes with water.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Hygroscopic material. Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 Exposure controls / personal protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Particulates not otherwise classified	None established	TWA: 15 mg/m <sup>3</sup> total dust	None established

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical and chemical properties

**Appearance:** Solid. White pellets.  
**Odor:** No odor.  
**Odor threshold:** Data not available.  
**pH:** Data not available.  
**Melting / Freezing point:** 772°C (1422°F)  
**Boiling point:** Data not available  
**Flash point:** Not applicable

**Evaporation rate ( = 1):** Not applicable  
**Flammability (solid/gas):** Data not available.  
**Explosion limits: Lower / Upper:** Not applicable  
**Vapor pressure (mm Hg):** Negligible  
**Vapor density (Air = 1):** Data not available  
**Relative density (Specific gravity):** Data not available  
**Solubility(ies):** Soluble in water.

**Partition coefficient:** Not applicable  
**Auto-ignition temperature:** Not applicable  
**Decomposition temperature:** Data not available.  
**Viscosity:** Data not available.  
**Molecular formula:** CaCl<sub>2</sub>  
**Molecular weight:** 110.99

## Section 10 Stability and reactivity

**Chemical stability:** Stable **Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Hygroscopic material. Avoid moisture.

**Incompatible materials:** Heat is generated when mixed with water. Spattering and boiling can occur. Avoid contact with sulfuric acid. Corrosive when wet. Flammable hydrogen may be generated from contact with metals such as zinc and sodium.

**Hazardous decomposition products:** None known.

## Section 11 Toxicological information

**Acute toxicity:** Oral-rat LD50: 2100 mg/kg ; Dermal-rabbit LD50: >5000 mg/kg

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

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.

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 identified as a carcinogen or potential carcinogen by OSHA.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Dust may cause irritation to the upper respiratory tract (nose and throat).

Ingestion: Low toxicity if swallowed. However, large amounts may result in gastrointestinal irritation or ulceration.

Skin: Contact with skin may cause irritation and/or defatting on prolonged contact.

Eyes: Contact with eyes may cause severe irritation and/or corneal injury.

**Signs and symptoms of exposure:** See Potential health effects above.

**Additional information:** RTECS #: EV9810000

## Section 12 Ecological information

**Toxicity to fish:** Lepomis macrochirus (bluegill) LC50: 8,350-10,650 mg/L

**Toxicity to daphnia and other aquatic invertebrates:** Daphnia magna (water flea), LC50: 759-3,005 mg/L

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport information

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2020 ERG Guide #:** Not applicable

## Section 15 Regulatory information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Calcium chloride	Listed	Not listed	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

## Section 16 Other information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

## Section 1 Identification

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**CHEMTREC 24 Hour Emergency**  
**Phone Number (800) 424-9300**  
 For laboratory and industrial use only.  
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<b>Product</b>	SILVER NITRATE
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<b>Synonyms</b>	Silver(I) Nitrate
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## Section 2 Hazards identification

Signal word: DANGER

Pictograms: GHS03 / GHS05 / GHS09

Target organs: Kidneys, Liver, Eyes, Skin



GHS Classification:

Ox. Sol. (Category 2)

Skin Corr. (Category 1B)

Aquatic Acute (Category 1)

Aquatic Chronic (Category 1)

GHS Label information: Hazard statement:

H272: May intensify fire; oxidizer.

H314: Causes severe skin burns and eye damage.

H410: Very toxic to aquatic life with long lasting effects.

## Precautionary statement(s):

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P220: Store away from clothing and combustible materials.

P221: Take any precaution to avoid mixing with combustibles.

P260: Do not breathe dust.

P264: Wash hands thoroughly after handling.

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P310: Immediately call a POISON CENTER or doctor.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P363: Wash contaminated clothing before reuse.

P370+P378: In case of fire: Use water to extinguish.

P391: Collect spillage.

P405: Store locked up.

H501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

## Hazards not otherwise classified:

Health hazards not otherwise classified (HHNOC) - Not Known

Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

Chemical Name	CAS #	%	EINECS
Silver nitrate	7761-88-8	100%	231-853-9

## Section 4 First aid measures

**INGESTION:** MAY BE FATAL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** MAY BE HARMFUL IF INHALED. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CONTACT CAUSES CORNEAL DAMAGE OR BLINDNESS. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** CONTACT CAN CAUSE BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use water. Do not use dry chemicals or foams. CO<sub>2</sub> or Halon® may provide limited control.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance is a strong oxidizer which releases oxygen on heating. The oxygen will intensify any fire in the immediate surroundings.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, dry, well-ventilated area. Keep away from ignition sources. Store in resistant containers. Do not store in wooden, cardboard or paper containers. Store away from flammable and combustible materials.

## Section 8 Exposure controls / personal protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Silver, soluble compounds, as Ag	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical and chemical properties

**Appearance:** Solid, white crystals.

**Odor:** No odor.

**Odor threshold:** Data not available.

**pH:** Data not available.

**Melting / Freezing point:** 212°C (>413°F)

**Boiling point:** Decomposes

**Flash point:** Data not available

**Evaporation rate ( = 1):** Not applicable

**Flammability (solid/gas):** Data not available.

**Explosion limits: Lower / Upper:** Data not available

**Vapor pressure (mm Hg):** Data not available

**Vapor density (Air = 1):** 5.8

**Relative density (Specific gravity):** 4.35

**Solubility(ies):** +/- 10% in water

**Partition coefficient:** Data not available

**Auto-ignition temperature:** Data not available

**Decomposition temperature:** 444°C (>831°F)

**Viscosity:** Not applicable

**Molecular formula:** AgNO<sub>3</sub>

**Molecular weight:** 169.87

## Section 10 Stability and reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures, heat, sparks, open flame and other sources of ignition.

**Incompatible materials:** Combustible materials, reducing agents, organic substances, strong basis and alkalis.

**Hazardous decomposition products:** Nitrogen oxides.

## Section 11 Toxicological information

**Acute toxicity:** Oral-rat LD50: 1,173 mg/kg ; Dermal-guinea pig LD50: >216 mg/kg

**Skin corrosion/irritation:** Human - Corrosive

**Serious eye damage/irritation:** Rabbit - Corrosive

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

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.

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 identified as a carcinogen or potential carcinogen by OSHA.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Inhalation of dust will produce irritation to gastrointestinal or respiratory tract, characterized by burning, sneezing, and coughing. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Ingestion: Poisonous if swallowed. Ingestion causes severe gastroenteritis.

Skin: Contact with skin can produce inflammation and blistering.

Eyes: Contact with eyes may cause corneal damage or blindness.

**Signs and symptoms of exposure:** Irritation of upper respiratory tract. Skin irritation or burns. Severe irritation or burns to eyes.

**Additional information:** RTECS #: VW4725000

## Section 12 Ecological information

**Toxicity to fish:** *Oncorhynchus mykiss* (fish, fresh water), LC50 = 0.0086 mg/l/96 hours

**Toxicity to daphnia and other aquatic invertebrates:** *Daphnia magna* (Crustacea), EC50 = 0.0006 mg/l/48 hours

**Toxicity to algae:** *Chlorella vulgaris* (Algae), EC50 = Ca. 0.1 mg/l/14 day - growth rate

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport information

**UN/NA number:** UN1493

**Shipping name:** Silver nitrate

**Hazard class:** 5.1

**Packing group:** II

**Reportable Quantity:** > 1 lbs (0.454 kg)

**Marine pollutant:** No

**Exceptions:** Limited quantity equal to or less than 1 Kg

**2020 ERG Guide #** 140

## Section 15 Regulatory information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Silver nitrate	Listed	Listed	D001, D011	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

## Section 16 Other information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.