

Calcium chloride SDS/MSDS (Safety Data Sheet)

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

* Product Name: Calcium chloride

* Catalog Number: S6992

* CAS Number: 10043-52-4

* IUPAC Name: Calcium chloride (CaCl)

Relevant identified uses and uses advised against

* Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.

* Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

* Company: Selleck Chemicals

* TollFree: +1 877 796-6397

* Tel: +1 832 582-8158

* Fax: +1 832 582-8590

Emergency telephone number

* Emergency phone #: +1 832 582-8158

2. HAZARDS IDENTIFICATION

2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Acute toxicity (oral): Category 4. H302

Serious eye damage: Category 1. H318

Serious eye irritation: Category 2. H319

Specific target organ toxicity (single exposure): Category 3. H335

Specific target organ toxicity (repeated exposure): Category 2. H373

2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word

Danger

Hazard statement(s)

H302: Harmful if swallowed

H318: Causes serious eye damage

H319: Causes serious eye irritation

H335: May cause respiratory irritation

H373: May causes damage to organs through prolonged or repeated exposure

Precautionary statement(s)

None.

Prevention	<p>P260: Do not breathe dust/fume/gas/mist/vapors/spray.</p> <p>P261: Avoid breathing dust/fume/gas/mist/vapors/spray.</p> <p>P264: Wash hands thoroughly after handling.</p> <p>P264+P265: Wash hands thoroughly after handling. Do not touch eyes.</p> <p>P270: Do not eat, drink or smoke when using this product.</p> <p>P271: Use only outdoors or in a well-ventilated area.</p> <p>P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.</p>
Response	<p>P301+P317: IF SWALLOWED: Get medical help.</p> <p>P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P305+P351: IF IN EYES: Rinse cautiously with water for several minutes.</p> <p>P305+P354: IF IN EYES: Immediately rinse with water for several minutes.</p> <p>P317: Get emergency medical help.</p> <p>P319: Get medical help if you feel unwell.</p> <p>P330: Rinse mouth.</p> <p>P337+P317: If eye irritation persists: Get medical help.</p> <p>P338: Remove contact lenses, if present and easy to do. Continue rinsing.</p>
Storage	<p>P403+P233: Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405: Store locked up.</p>
Disposal	<p>P501: P501 Dispose of contents/ container to an approved waste disposal plant.</p>

2.3 Other hazards

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Product name: Calcium chloride
CAS Number: 10043-52-4
PubChem CID: 5284359
Molecular formula: CaCl_2
Molecular weight: 110.98 g/mol
IUPAC name: calcium dichloride

3.2 Mixtures

Not applicable (pure substance).

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Fresh air, rest. Refer for medical attention.

Skin contact: Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer immediately for medical attention.

Eye contact: Rinse with plenty of water for several minutes (remove contact lenses if easily possible). Refer immediately for medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer immediately for medical attention.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO₂), alcohol-resistant foam.

Unsuitable: None known.

5.2 Specific hazards arising from the substance or mixture

In case of fire in the surroundings, use appropriate extinguishing media.

Fire Control: Use water, dry chemical, carbon dioxide or foam to extinguish. Do not extinguish fire unless release can be stopped. Cool fire-exposed containers with water.

5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

6.3 Methods and materials for containment and cleaning up

Personal protection: complete protective clothing including self-contained breathing apparatus. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

Spill Control: Restrict access to spill site, call fire department and notify manufacturer, stop the flow and contain spill if safe to do so, keep contaminated water from entering sewers or water courses, and avoid contact with liquid and solid.

Emergency control Procedures: Soil; Construct barriers to contain spill and remove material by manual or mechanical means. Water; Contain by damming, water diversion or natural barriers.

When solid calcium chloride is spilled on land, shovel into containers (avoid dusting) for recovery or disposal.

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational harm/injury/toxicity or environmental contamination. Recycle any unused portion of the material for its

approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal and plant life; and conformance with environmental and public health regulations.

Waste calcium chloride must never be discharged directly into sewers or surface waters.

SRP: The scientific literature for the use of contact lenses by industrial workers is inconsistent. The benefits or detrimental effects of wearing contact lenses depend not only upon the substance, but also on factors including the form of the substance, characteristics and duration of the exposure, the uses of other eye protection equipment, and the hygiene of the lenses. However, there may be individual substances whose irritating or corrosive properties are such that the wearing of contact lenses would be harmful to the eye. In those specific cases, contact lenses should not be worn. In any event, the usual eye protection equipment should be worn even when contact lenses are in place.

SRP: Local exhaust ventilation should be applied wherever there is an incidence of point source emissions or dispersion of regulated contaminants in the work area. Ventilation control of the contaminant as close to its point of generation is both the most economical and safest method to minimize personnel exposure to airborne contaminants. Ensure that the local ventilation moves the contaminant away from the worker.

WHERE POSSIBLE, PROCESSES SHOULD BE MECHANISED & ENCLOSED TO PREVENT DUST FORMATION
... ADEQUATE VENTILATION SHOULD BE INSTALLED TO COLLECT AIRBORNE DUST. ... SMOKING,
DRINKING & EATING PROHIBITED @ WORKPLACE.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Separated from zinc. Dry. Well closed.

Storage space should be well ventilated.

Dry bulk calcium chloride can be stored in bins fabricated from most construction-grade steel materials. Care should be taken to minimize moisture. Venting should be limited to times of filling and discharging calcium chloride from the storage bin.

Liquid calcium chloride can be stored in either horizontal or vertical cylindrical tanks constructed of steel. Fiberglass and plastic may also be used within limits of strength and temperature.

7.2 Conditions for safe storage, including any incompatibilities

Separated from zinc. Dry. Well closed.

Storage space should be well ventilated.

Dry bulk calcium chloride can be stored in bins fabricated from most construction-grade steel materials. Care should be taken to minimize moisture. Venting should be limited to times of filling and discharging calcium chloride from the storage bin.

Liquid calcium chloride can be stored in either horizontal or vertical cylindrical tanks constructed of steel. Fiberglass and plastic may also be used within limits of strength and temperature.

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure controls

8.1.1 Occupational exposure limits (OEL)

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

8.1.2 Appropriate engineering controls

Use only in a chemical fume hood or with local exhaust ventilation.

Ensure adequate ventilation to keep airborne concentrations below exposure limits.

8.2 Individual protection measures

8.2.1 Eye/face protection

Wear chemical safety goggles and face shield.

8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

8.2.3 Respiratory protection

Use NIOSH-approved dust/mist respirator (N95 or higher) if ventilation is inadequate.

8.2.4 Thermal hazards

Not applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Appearance: Calcium chloride is a white to off-white solid. Sinks and mixes with water. (USCG, 1999)
- b) Odor: ODORLESS
- c) Odor threshold: No data available
- d) pH: No data available
- e) Melting point/freezing point: 775 °C
- f) Initial boiling point and boiling range: 1935 °C
- g) Flash point: No data available
- h) Evaporation rate: No data available
- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability or explosive limits: No data available
- k) Vapor pressure: No data available
- l) Vapor density: No data available
- m) Relative density: 2.15 at 68 °F (USCG, 1999) - Denser than water; will sink
- n) Water solubility: Soluble in water and in ethanol
- o) Partition coefficient: n-octanol/water: Log P: No data available
- p) Auto-ignition temperature: No data available
- q) Decomposition temperature: No data available
- r) Viscosity: In 40.0% aqueous solution, 8.997 mPa.s at 20 °C
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

9.2 Other information

10. STABILITY AND REACTIVITY

10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

Avoid strong oxidizing agents, strong acids, and strong bases.

10.5 Incompatible materials

Exothermic reaction with water.

Reaction with zinc releases explosive hydrogen gas.

Catalyzes exothermic polymerization of methyl vinyl ether.

Bromine trifluoride rapidly attacks ... calcium chloride ...

For more Hazardous Reactivities and Incompatibilities (Complete) data for CALCIUM CHLORIDE (8 total), please visit the HSDB record page.

10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO₂), Hydrogen chloride (HCl).

See also Section 5 (Fire-fighting measures) for combustion products.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

No acute toxicity data available.

Skin corrosion/irritation:

No data available.

Serious eye damage/eye irritation:

Causes serious eye damage (H318).

Respiratory or skin sensitization:

No data available.

Germ cell mutagenicity:

No data available.

Carcinogenicity:

No data available.

Reproductive toxicity:

No data available.

Specific target organ toxicity (single exposure):

H373

Specific target organ toxicity (repeated exposure):

No data available.

Aspiration hazard:

No data available.

11.2 Additional information

Exposure routes:

Serious local effects by all routes of exposure.

Signs and symptoms of exposure:

Cough. Sore throat. Burning sensation.

Redness. Dry skin. Skin burns.

Redness. Pain. Burns.

Burns in mouth and throat. Nausea. Vomiting.

Data source: Hazardous Substances Data Bank (HSDB) via PubChem.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

EC50; Species: *Daphnia magna* (Water Flea); Conditions: freshwater, static, 11.5-14.5 °C, pH 7.2-7.8, dissolved oxygen 5.2-6.5 mg/L; Concentration: 573060 ug/L for 24 hr (95% confidence interval: 448700-699000 ug/L); Effect: intoxication, immobilization /total Ca ion/

EC50; Species: *Daphnia magna* (Water Flea) age 4 hr; Conditions: freshwater, static, 25 °C; Concentration: 920000 ug/L for 64 hr; Effect: intoxication, immobilization

LC50; Species: *Americamysis bahia* (Opossum Shrimp) age 4-5 days; Conditions: saltwater, static, 25-27 °C, salinity 10 ppt; Concentration: 270000 ug/L for 48 hr

LC50; Species: *Americamysis bahia* (Opossum Shrimp) age 4-5 days; Conditions: saltwater, static, 25-27 °C, salinity 20 ppt; Concentration: 530000 ug/L for 48 hr

For more Ecotoxicity Values (Complete) data for CALCIUM CHLORIDE (27 total), please visit the HSDB record page.

/AQUATIC SPECIES/ Rock bass were killed by /calcium chloride/ concentration of 555 mg/L for 168 hr in tap water.

/PLANTS/ *Catharanthus roseus* (L.) G. Don. plants were grown with NaCl and CaCl₂ in order to study the effect of CaCl₂ on NaCl-induced oxidative stress in terms of lipid peroxidation (TBARS content), H₂O₂ content, osmolyte concentration, proline (PRO)-metabolizing enzymes, antioxidant enzyme activities, and indole alkaloid accumulation. The plants were treated with solutions of 80 mM NaCl, 80 mM NaCl with 5 mM CaCl₂ and 5 mM CaCl₂ alone. Groundwater was used for irrigation of control plants. Plants were uprooted and

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

12.6 Other adverse effects

No other adverse ecological effects identified.

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

14. TRANSPORT INFORMATION**14.1 UN number**

Not regulated as dangerous goods (research quantities typically exempt).

14.2 UN proper shipping name

Not subject to transport regulations (small quantities for research use).

14.3 Transport hazard class(es)

Not classified as dangerous goods for transport (research quantities).

14.4 Packing group

Not applicable (not regulated as dangerous goods in typical research quantities).

14.5 Environmental hazards

Marine pollutant: No (not classified as environmentally hazardous per GHS).

14.6 Special precautions for user

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Registered (REACH Active)

SARA 302 Components:

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

SARA 313 Components:

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.

SARA 311/312 Hazards:

Acute (short-term) health hazard

Chronic (long-term) health hazard

Massachusetts Right To Know Components:

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

Pennsylvania Right To Know Components:

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

New Jersey Right To Know Components:

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

California Prop. 65 Components:

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

Other regulatory listings:

- The Australian Inventory of Industrial Chemicals: Chemical: Calcium chloride (CaCl₂)
- EFSA Legal Basis: Regulation (EC) No 178/2002 (amended)
- EFSA Legal Basis: Regulation (EC) No 1333/2008 (amended)
- FIFRA Requirements: Residues of calcium chloride are exempted from the requirement of a tolerance when used in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to animals. Use: stabilizer. Limit: none.

Residues of the following chemical substance

- FDA Requirements: Substance added directly to human food affirmed as generally recognized as safe (GRAS).

Calcium chloride used as a general purpose food additive in animal drugs, feeds, and related products is generally recognized as safe when used in accordance with good manufacturing or feeding practice.

Calcium c

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

16. OTHER INFORMATION

Revision Date: 2026/09/09

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product.

Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.