

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product Name	<b>Calcium Chloride, Enriched Calcium Chloride</b>
Chemical Formula	CaCl <sub>2</sub>
Molecular Weight	110.98 g/mol
CAS No.	10043-52-4 (Anhydrous)
RTECS No.	EV9800000
Synonyms	Calcium dichloride; Calcium chloride anhydrous; Caltac(R); Dowflake
Supplier Address*	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (both supplier and manufacturer)	Infotrac/ +1 800-535-5053  *May include subsidiaries or affiliate companies/divisions
Email	<a href="mailto:iusa@isoflex.com">iusa@isoflex.com</a>
Website	<a href="http://www.isoflex.com">www.isoflex.com</a>
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

**2. HAZARDS IDENTIFICATION**

**Emergency Overview:**

WARNING! CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.  
HARMFUL IF SWALLOWED OR INHALED.

**NFPA Ratings:** (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

**Health Hazard = 1    Flammability = 0    Reactivity = 1**



**HMIS Ratings:** (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

**Health Hazard = 1    Flammability = 0    Physical Hazard = 0**

<b>HEALTH HAZARD</b>	<b>1</b>
<b>FLAMMABILITY</b>	<b>0</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>

## Potential Health Effects

### *Ingestion*

Low toxicity material, but ingestion may cause serious irritation of the mucous membrane due to heat of hydrolysis. Large amounts can cause gastrointestinal upset, vomiting, abdominal pain.

### *Inhalation Exposure*

Granular material does not pose a significant inhalation hazard, but inhalation of dust may cause irritation to the respiratory tract, with symptoms of coughing and shortness of breath.

### *Dermal Exposure*

Solid may cause mild irritation on dry skin; strong solutions or solid in contact with moist skin may cause severe irritation or burns.

### *Eye Exposure*

Hazard may be either mechanical abrasion or, more serious, burns from heat of hydrolysis and chloride irritation.

### *Chronic Exposure*

No information found

### *Aggravation of Pre-existing Conditions*

No information found

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name:	Calcium Chloride
CAS No.:	10043-52-4 (Anhydrous)
Molecular Weight:	110.98 g/mol
Chemical Formula:	CaCl <sub>2</sub>

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## 4. FIRST AID MEASURES

### *Inhalation*

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

### *Ingestion*

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

### *Skin Contact*

Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

### *Eye Contact*

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

### *Note to Physician*

Oral ingestion may cause serum acidosis.

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## 5. FIREFIGHTING MEASURES

### *Flammable Hazards*

No

### *Pyrophoric/Autoignition*

No

### *Conditions of Flammability*

Noncombustible

### *Flash Point*

N/A

### *Autoignition Temp*

N/A

### *Flammability*

0

### *Suitable Extinguishing Media*

Use any means suitable for extinguishing surrounding fire.

### *Firefighting*

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. ACCIDENTAL RELEASE MEASURES

*Procedure to be Followed as Specified in Section 7*

Ventilate area of leak or spill. Wear appropriate personal protective equipment in case of leak or spill.

*Procedure(s) of Personal Precaution(s)*

See Section 8.

*Methods for Cleaning Up*

Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. Small amounts of residue may be flushed to sewer with plenty of water.

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## 7. HANDLING AND STORAGE

*Handling*

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Moist calcium chloride and concentrated solutions can corrode steel. When exposed to the atmosphere, calcium chloride will absorb water and form a solution. Containers of this material may be hazardous when empty, since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

*Special Requirements*

No requirements

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

*Ventilation System*

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Protective Equipment**

*Respiratory (NIOSH-Approved)*

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filter) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

*Hand and Skin*

Goggles and labcoat

*Eye*

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

*General Hygiene Measures*

Wash thoroughly after handling.

*Airborne Exposure Limits*

None established

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**

Physical State:

Solid

Color:

White or gray-white granules

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## Safety data

Molecular Weight: 110.98 g/mol  
BP/BP Range: >1600 °C (>2912 °F)  
Freezing Point: N/A  
Vapor Density: No information found.  
SG/Density: 2.15 g/cm<sup>3</sup>  
Odor Threshold: Odorless  
VOC Content: N/A  
Solvent Content: N/A  
Viscosity: N/A  
Partition Coefficient: N/A  
Flash Point: N/A  
Flammability: None  
Refractive Index: N/A  
Miscellaneous Data: N/A

pH: 8 - 9 Aqueous solution  
MP/MP Range: 772 °C (1422 °F)  
Vapor Pressure: No information found  
Saturated Vapor Conc.: N/A  
Bulk Density: N/A  
% Volatiles by Volume @ 21 °C (70 °F): 0  
Water Content: N/A  
Evaporation Rate: No information found  
Surface Tension: N/A  
Decomposition Temperature: N/A  
Explosion Limits: N/A  
Autoignition Temperature: N/A  
Optical Rotation: N/A  
Solubility: Freely soluble in water, exothermic

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## 10. STABILITY AND REACTIVITY

### *Stability*

Stable under ordinary conditions of use and storage. Substance will pick up moisture from the air and go into solution if exposed in open containers.

### *Conditions to Avoid*

Incompatibilities

### *Materials to Avoid*

Methyl vinyl ether, water, zinc, bromine trifluoride, mixtures of lime and boric acid, barium chloride, and 2-furan percarboxylic acid. Metals will slowly corrode in aqueous calcium chloride solutions. Aluminum (and alloys) and yellow brass will be attacked by calcium chloride. Calcium chloride is attacked by bromine trifluoride.

### *Hazardous Decomposition Products*

Emits toxic chlorine fumes when heated to decomposition. May form hydrogen chloride in presence of sulfuric or phosphoric acids or with water at elevated temperatures.

### *Hazardous Polymerization*

Will not occur

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## 11. TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

#### Acute Toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Calcium chloride	LD50 Oral	Rat	1 g/kg	-

Irritation/Corrosion

Not available

Sensitization

Not available

Mutagenicity

Not available

Carcinogenicity

Not available

Reproductive Toxicity

Not available

Teratogenicity

Not available

Specific Target Organ Toxicity/Single Exposure

Not available

Specific Target Organ Toxicity/  
Repeated Exposure

Not available

Aspiration Hazard

Not available

Information on the Likely Routes of Exposure

Not available

**Potential Acute Health Effects**

Eye Contact:	Causes serious eye irritation
Inhalation:	No known significant effects or critical hazards
Skin Contact:	No known significant effects or critical hazards
Ingestion:	Harmful if swallowed. Irritating to mouth, throat and stomach.

**Symptoms related to the physical, chemical and toxicological characteristics**

Eye Contact:	Adverse symptoms may include the following: pain or irritation, watering, redness
Inhalation:	No specific data
Skin Contact:	No specific data
Ingestion:	No specific data

**Delayed and immediate effects and also chronic effects from short and long term exposure***Short-term exposure*

<b>Potential immediate effects:</b>	Not available
<b>Potential delayed effects:</b>	Not available

*Long-term exposure*

<b>Potential immediate effects:</b>	Not available
<b>Potential delayed effects:</b>	Not available

*Potential chronic health effects:* Not available

<b>General:</b>	No known significant effects or critical hazards
<b>Carcinogenicity:</b>	No known significant effects or critical hazards
<b>Mutagenicity:</b>	No known significant effects or critical hazards
<b>Teratogenicity:</b>	No known significant effects or critical hazards
<b>Developmental Effects:</b>	No known significant effects or critical hazards
<b>Fertility Effects:</b>	No known significant effects or critical hazards

**Numerical measures of toxicity**

*Acute toxicity estimates* Not available

**12. ECOLOGICAL INFORMATION****Toxicity**

<i>Product/ingredient name</i>	<i>Result</i>	<i>Species</i>
Calcium chloride	Acute EC50 31300 µg/l Fresh water	Algae - <i>Navicula seminulum</i>
	Acute EC50 5200 µg/l Fresh water	Daphnia - <i>Daphnia magna</i>
	Acute LC50 270 mg/l Marine water	Crustaceans - <i>Americamysis bahia</i>
	Acute LC50 210 mg/l Fresh water	Fish - <i>Pimephales promelas</i>

<i>Persistence and Degradability</i>	No data available
<i>Bioaccumulative Potential</i>	No data available
<i>Mobility in Soil</i>	No data available
<i>Results of PBT and vPvB Assessment</i>	PBT/vPvB assessment not available, as chemical safety assessment not required/not conducted
<i>Other Adverse Effects</i>	No known significant effects or critical hazards

### 13. DISPOSAL CONSIDERATIONS

<i>Product</i>	Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.
<i>Container</i>	Dispose of container and unused contents in accordance with federal, state and local requirements.

### 14. TRANSPORT INFORMATION

<b>DOT</b>	Not dangerous goods
<b>TDG</b>	Not dangerous goods
<b>Mexico</b>	Not dangerous goods
<b>IMDG</b>	Not dangerous goods
<b>IATA</b>	Not dangerous goods

**Special precautions for user:** Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code:** Not available

### 15. REGULATORY INFORMATION

<b>REACH Number</b>	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.	
<b>SARA 302 Components</b>	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.	
<b>SARA 313 Components</b>	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.	
<b>SARA 311/312 Hazards</b>	Acute Health Hazard	
<b>Massachusetts Right to Know Components</b>	No components are subject to the Massachusetts Right to Know Act.	
<b>Pennsylvania Right to Know Components</b>	Calcium chloride	CAS No. 10043-52-4
<b>New Jersey Right to Know Components</b>	Calcium chloride	CAS No. 10043-52-4
<b>California Prop. 65 Components</b>	This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.	

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## 16. OTHER INFORMATION

<i>Prepared By</i>	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
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<i>Revision Number</i>	4
<i>Revision Note</i>	Update Supplier Address

### ISOFLEX USA's Commonly Used Abbreviations and Acronyms\*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)
EC50	Half Maximal Effective Concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)

NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährdungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

\*One or more of the above-listed items may not appear in this document.

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