

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **Calcium Chloride, Enriched Calcium Chloride**
 Chemical Formula **CaCl₂**
 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
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 United States**

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 (both supplier and manufacturer) ***May include subsidiaries or affiliate companies/divisions**

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 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

HEALTH HAZARD	1
FLAMMABILITY	0
PHYSICAL HAZARD	0

Potential Health Effects

<i>Ingestion</i>	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.
<i>Inhalation Exposure</i>	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.
<i>Dermal Exposure</i>	Solid may cause mild irritation on dry skin; strong solutions or solid in contact with moist skin may cause severe irritation or burns.
<i>Eye Exposure</i>	Hazard may be either mechanical abrasion or, more serious, burns from heat of hydrolysis and chloride irritation.
<i>Chronic Exposure</i>	No information found
<i>Aggravation of Pre-existing Conditions</i>	No information found

3. COMPOSITION/INFORMATION ON INGREDIENTS

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

4. FIRST AID MEASURES

<i>Inhalation</i>	Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<i>Ingestion</i>	Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
<i>Skin Contact</i>	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.
<i>Eye Contact</i>	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.
<i>Note to Physician</i>	Oral ingestion may cause serum acidosis.

5. FIREFIGHTING MEASURES

<i>Flammable Hazards</i>	No
<i>Pyrophoric/Autoignition</i>	No
<i>Conditions of Flammability</i>	Noncombustible
<i>Flash Point</i>	N/A
<i>Autoignition Temp</i>	N/A
<i>Flammability</i>	0
<i>Suitable Extinguishing Media</i>	Use any means suitable for extinguishing surrounding fire.
<i>Firefighting</i>	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.

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.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State:

Solid

Color:

White or gray-white granules

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/cm³
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

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

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/

Not available

Repeated Exposure

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

Potential immediate effects:	Not available
Potential delayed effects:	Not available

Long-term exposure

Potential immediate effects:	Not available
Potential delayed effects:	Not available

Potential chronic health effects: Not available

General:	No known significant effects or critical hazards
Carcinogenicity:	No known significant effects or critical hazards
Mutagenicity:	No known significant effects or critical hazards
Teratogenicity:	No known significant effects or critical hazards
Developmental Effects:	No known significant effects or critical hazards
Fertility Effects:	No known significant effects or critical hazards

Numerical measures of toxicity

<i>Acute toxicity estimates</i>	Not available
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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

DOT	Not dangerous goods
TDG	Not dangerous goods
Mexico	Not dangerous goods
IMDG	Not dangerous goods
IATA	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

REACH Number	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.	
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 Health Hazard	
Massachusetts Right to Know Components	No components are subject to the Massachusetts Right to Know Act.	
Pennsylvania Right to Know Components	Calcium chloride	CAS No. 10043-52-4
New Jersey Right to Know Components	Calcium chloride	CAS No. 10043-52-4
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.	

16. OTHER INFORMATION

<i>Prepared By</i>	ISOFLEX USA PO Box 29475 San Francisco CA 94129 United States
<i>Issuing Date</i>	January 21, 2015
<i>Revision Date</i>	August 01, 2021
<i>Revision Number</i>	3
<i>Revision Note</i>	Required review and update

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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