

Material Safety Data Sheet



Calcium Chloride, Anhydrous

Section 1. Chemical product and company identification

Product name	: Calcium Chloride, Anhydrous
Supplier	: AIRGAS INC., on behalf of its subsidiaries 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
Synonym	: Calcium chloride; CaCl ₂ ; Calcium chloride (CaCl ₂); Calplus; Caltac; Dowflake; Liquidow; Peladow; Snomelt; Superflake anhydrous; Anhydrous calcium chloride; Calcium chloride dihydrate; Calcium chloride pellets; Calcosan; Caloride; Chip calcium chloride; Homborg's phosphorus; Huppert's reagent; Hydrochloric acid calcium salt (2:1); Ice melt; Intergravin- orales; Jarcal; Liquical; Liquid calcium chloride; Marley cement accelerator; Sure-step; Unichem calchlor
MSDS #	: 001087
Date of Preparation/Revision	: 4/23/2010.
In case of emergency	: 1-866-734-3438

Section 2. Hazards identification

Physical state : Solid. [COLORLESS, WHITE TO OFF-WHITE CRYSTALS OR CLEAR, COLORLESS WATER SOLUTION. CRYSTALS WILL ABSORB MOISTURE FROM THE AIR FORMING A CONCENTRATED LIQUID.]

Emergency overview : CAUTION!
MAY BE HARMFUL IF SWALLOWED.
May be harmful if swallowed. Do not ingest. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Potential acute health effects

Eyes : No known significant effects or critical hazards.
Skin : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Ingestion : Harmful if swallowed.

Potential chronic health effects : **CARCINOGENIC EFFECTS:** Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.

Medical conditions aggravated by over-exposure : None known.

See toxicological information (section 11)

Section 3. Composition, Information on Ingredients

United States

calcium chloride 10043-52-4 100

Exposure limits

PO МинЗдраСоц ПДК (RU, 2/2004).
CEIL: 2 mg/m³ Form: aerosol

178/2001 (Czech Republic, 12/2007).

TWA: 2 mg/m³ 8 hour(s).

STEL: 4 mg/m³ 15 minute(s).

LV Nat. Standardisation and Meterological Centre (Latvia, 5/2007).

TWA: 2 mg/m³ 8 hour(s).

CA Ontario Provincial (Canada, 8/2008).

TWAEV: 5 mg/m³ 8 hour(s).

Section 4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Section 5. Fire-fighting measures

- Flammability of the product** : May be combustible at high temperature.
Not available.
- Products of combustion** : Decomposition products may include the following materials:
halogenated compounds
metal oxide/oxides
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
No specific fire or explosion hazard.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Personal protection**
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Personal protection in case of a large spill** : Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.

Product name

Exposure limits

United States

calcium chloride

PO МинЗдраСоц ПДК (RU, 2/2004).

CEIL: 2 mg/m³ Form: aerosol

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TWA: 2 mg/m³ 8 hour(s).

CA Ontario Provincial (Canada, 8/2008).

TWAEV: 5 mg/m³ 8 hour(s).

Section 9. Physical and chemical properties

- Physical state** : Solid. [COLORLESS, WHITE TO OFF-WHITE CRYSTALS OR CLEAR, COLORLESS WATER SOLUTION. CRYSTALS WILL ABSORB MOISTURE FROM THE AIR FORMING A CONCENTRATED LIQUID.]
- Color** : COLORLESS
- Odor** : NONE
- Molecular weight** : 110.98 g/mole
- Molecular formula** : Ca-Cl₂
- Melting/freezing point** : 771.8°C (1421.2°F)
- Specific gravity** : 2.15 (Water = 1)

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VOC : 0 % (w/w)

Section 10. Stability and reactivity

Stability and reactivity : The product is stable.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
calcium chloride	LD50 Intramuscular	Rat	25 mg/kg	-
	LD50 Intraperitoneal	Rat	264 mg/kg	-
	LD50 Oral	Rat	1 g/kg	-
	LD50 Subcutaneous	Rat	2630 mg/kg	-
	LDLo Intravenous	Rat	161 mg/kg	-
	TDL0 Intravenous	Rat	300 mg/kg	-
	TDL0 Parenteral	Rat	200 ug/kg	-

Other toxic effects on humans : Hazardous by the following route of exposure: of eye contact (irritant).

Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Reproduction toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Aquatic ecotoxicity

calcium chloride	-	Acute EC50 1.4 g/l Fresh water	Daphnia - Water flea - Daphnia magna - 5 days	48 hours
	-	Acute EC50 7000000 to 9242000 ug/L Fresh water	Crustaceans - Cyclopoid copepod - Cyclops abyssorum prealpinus - Adult - 0.62 mm	48 hours
	-	Acute EC50 4000000 to 5455000 ug/L Fresh water	Crustaceans - Calanoid copepod - Eudiaptomus padanus padanus - Adult - 0.43 mm	48 hours
	-	Acute EC50 464000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - 12 hours	48 hours
	-	Acute EC50 52000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - 12 hours	48 hours
	-	Acute LC50 570 mg/L Marine water	Crustaceans - Opossum shrimp - Americamysis bahia - Juvenile (Fledgling, Hatchling, Weanling) - 1 to 5 days	48 hours
	-	Acute LC50 4630000 to 5360000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 1 to 7	96 hours

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-	Acute LC50 4970 mg/L Fresh water	days Fish - Sheepshead minnow - Cyprinodon variegatus	96 hours
-	Acute LC50 3000000 to 3948000 ug/L Fresh water	Daphnia - Water flea - Daphnia hyalina - Adult - 1.27 mm	48 hours
-	Acute LC50 2770000 to 3230000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
-	Acute LC50 1830000 to 2030000 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - <24 hours	48 hours
-	Acute LC50 759000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
-	Acute LC50 2110 mg/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
-	Acute LC50 590 mg/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
-	Acute LC50 10650000 ug/L Fresh water	Fish - Bluegill - Lepomis macrochirus - 5 to 9 cm - 1 to 9 g	96 hours
-	Acute LC50 9500000 ug/L Fresh water	Fish - Bluegill - Lepomis macrochirus - 3.88 cm - 0.96 g	96 hours
-	Acute LC50 13400000 ug/L Fresh water	Fish - Western mosquitofish - Gambusia affinis - Adult	96 hours
-	Acute LC50 11300000 ug/L Fresh water	Fish - Bluegill - Lepomis macrochirus - 14.24 cm - 54.26 g	96 hours
-	Chronic NOEC 0.75 g/l Fresh water	Daphnia - Water flea - Daphnia magna - 5 days	48 hours




Products of degradation : Products of degradation: halogenated compounds. Some metallic oxides.

Section 13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation. Return cylinders with residual product to Airgas, Inc. Do not dispose of locally.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
Mexico Classification	Not regulated.	-	-	-		-

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Section 15. Regulatory information

United States

HCS Classification : Not regulated.

U.S. Federal regulations : **United States inventory (TSCA 8b)**: This material is listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: calcium chloride

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: calcium chloride: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

State regulations

: **Connecticut Carcinogen Reporting**: This material is not listed.

Connecticut Hazardous Material Survey: This material is not listed.

Florida substances: This material is not listed.

Illinois Chemical Safety Act: This material is not listed.

Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.

Louisiana Reporting: This material is not listed.

Louisiana Spill: This material is not listed.

Massachusetts Spill: This material is not listed.

Massachusetts Substances: This material is not listed.

Michigan Critical Material: This material is not listed.

Minnesota Hazardous Substances: This material is not listed.

New Jersey Hazardous Substances: This material is not listed.

New Jersey Spill: This material is not listed.

New Jersey Toxic Catastrophe Prevention Act: This material is not listed.

New York Acutely Hazardous Substances: This material is not listed.

New York Toxic Chemical Release Reporting: This material is not listed.

Pennsylvania RTK Hazardous Substances: This material is not listed.

Rhode Island Hazardous Substances: This material is not listed.

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Canada

WHMIS (Canada)

: Class D-2B: Material causing other toxic effects (Toxic).

CEPA Toxic substances: This material is not listed.

Canadian ARET: This material is not listed.

Canadian NPRI: This material is not listed.

Alberta Designated Substances: This material is not listed.

Ontario Designated Substances: This material is not listed.

Quebec Designated Substances: This material is not listed.

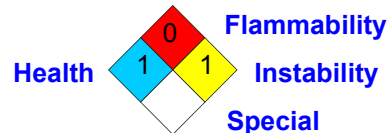
Section 16. Other information

Label requirements : MAY BE HARMFUL IF SWALLOWED.

Hazardous Material Information System (U.S.A.) :

Health	1
Flammability	0
Physical hazards	1

National Fire Protection Association (U.S.A.) :



Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.