

# SAFETY DATA SHEET



Calcium chloride dihydrate

## 1. Identification of the substance/preparation and company/undertaking

### Identification of the substance or preparation

**Product name** : Calcium chloride dihydrate  
**Synonyms** : Calcium chloride. Calcium chloride dihydrate.  
**Chemical formula** :  $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$   
**CAS no.** : 10035-04-8  
**EEC #** : E-509  
**EINECS no.** : 233-140-8 European Food additive E509.  
**NAFTA#** : 2827.20.0010

**Use of the substance/preparation** : The major use of calcium chloride is in deicing of roads, sidewalks and parking lots (30% of production) and in dust control (25% of production). Also used in cement and concrete industries; food processing; as a desiccant in production of petroleum products and in oil well drilling fluids. It is also present in natural water sources (seas, lakes, streams and in some natural mineral deposits).

### Company/undertaking identification

**Manufacturer** : Macco Organiques Inc., 100 McArthur, Valleyfield, Qc, Canada, J6S 4M5  
Tel: (450) 371-1066 Fax: (450) 371-5519  
macco@macco.ca http://www.macco.ca

**Emergency telephone number** : CANUTEC (613) 996-6666  
CHEMTREC, U.S. : (800) 424-9300 International: (703) 527-3887

## 2. Composition/information on ingredients

**Substance/preparation** : Substance

Ingredient name *	CAS number	%	EC number	Classification
<b>Europe</b> Calcium chloride dihydrate <b>See section 16 for the full text of the R-phrases declared above</b>	10035-04-8	70 - 100	233-140-8	Xi; R36
<b>United States of America</b> Calcium chloride dihydrate	10035-04-8	70 - 100	233-140-8	Irritant
<b>Canada</b> Calcium chloride dihydrate	10035-04-8	70 - 100	233-140-8	WHMIS Class D-2B: Material causing other toxic effects (Toxic).

Occupational exposure limits, if available, are listed in section 8.

\* Toxicological Values, if available, are listed in section 11

\* PIN, if available, are listed in section 14

## 3. Hazards identification

The substance is classified as dangerous according to Directive 67/548/EEC and its amendments.

**Classification** : Xi; R36  
**Human health hazards** : Practically non-toxic in contact with skin.  
**Physical state** : Deliquescent crystals solid.  
**Emergency overview** : CAUTION !



MAY CAUSE EYE IRRITATION.  
In powder form or in aerosol of concentrated solution.  
Avoid contact with eyes. Wash thoroughly after handling.

**Routes of entry** : Inhalation. Skin contact Eye contact. Ingestion.

## 4. First-aid measures

### First-aid measures

- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms appear.
- Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
- Skin contact** : Wash with soap and water. Obtain medical attention if symptoms occur.
- Eye contact** : Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water. Obtain medical attention if symptoms occur.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.
- Notes to physician** : No specific antidote, medical staff contact Poisons Information Centre.

### Potential acute health effects

- Inhalation** : Practically non-toxic by inhalation.
- Ingestion** : Not considered to be toxic to humans.
- Skin** : Repeated or prolonged contact may cause irritation or even burn. May cause increased irritation if skin is damp or broken or material is confined to the skin, for example, trapped beneath clothing.
- Eyes** : May cause temporary serious eye irritation or injury.
- Potential chronic health effects** : Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.  
Mutagenic effects: Not available.  
Teratogenic effects: Not available.
- Medical conditions aggravated by over-exposure** : Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation.

See section 11 for more detailed information on health effects and symptoms.

## 5. Fire-fighting measures

### Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : No specific hazard.
- Hazardous thermal decomposition products** : Not applicable.
- 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.

\* See section 9 and 10 for reactivity data.

## 6. Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, vacuum or carefully scoop up spilt material and place in an appropriate container for disposal by incineration. Avoid creating dusty conditions and prevent wind dispersal.

## 7. Handling and storage

- Handling** : Do not ingest. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as metals.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.
- Packaging materials**
- Recommended** : Use original container. Store in tightly-closed container.

## 8. Exposure controls/personal protection

### Ingredient name

Calcium chloride, dihydrate

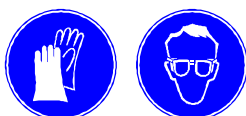
### Occupational exposure limits

TWA PEL: No specific exposure limit has been established for this material. One can consider OSHA and ACGIH Particles Not Otherwise Specified Limits of 15 mg/cu meter.

- 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. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

### Exposure controls

- Occupational exposure controls** : No special ventilation requirements. Good general ventilation should be sufficient to control airborne levels. 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.
- Respiratory protection** : Not required if handle in a ventilated enclosure.
- Hand protection** : 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.  
Recommended : Disposable vinyl gloves.
- Eye protection** : 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, gases or dusts.  
Recommended: Safety glasses.
- Skin protection** : 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.  
Body: Recommended: Lab coat.



- 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.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9. Physical and chemical properties

### General information

#### Appearance

- Physical state** : Deliquescent crystals solid.  
**Colour** : White.  
**Odour** : Odourless.  
**Molecular weight** : 147.02 g/mole

### Important health, safety and environmental information

- pH** : 4,5 to 9,2 (5% w/v)  
**Melting point** : 176°C (348.8°F)  
**Vapour pressure** : 0 kPa (0 mm Hg) (at 20°C)  
**Relative density** : 0,90-1,10 g/mL  
**Solubility** : Soluble in cold water. Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol and acetone.  
**Auto-ignition temperature** : Not applicable.  
**Explosive properties** : Risks of explosion of the product in presence of mechanical impact: Not available.  
Risks of explosion of the product in presence of static discharge: Not applicable.

## 10. Stability and reactivity

- Stability** : The product is stable.  
**Materials to avoid** : Reactive with oxidizing materials and metals. Slightly corrosive with metals. May react violently with boiling water, boric and calcium oxide, bromine trifluoride and initiate self-polymerisation of methyl vinyl ether.  
**Hazardous decomposition products** : Not applicable.

## 11. Toxicological information

### Potential acute health effects

- Inhalation** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.  
**Skin contact** : Slightly hazardous in case of skin contact (irritant).  
**Eye contact** : Hazardous in case of eye contact (irritant).

### Acute toxicity

<u>Product/ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Calcium chloride	LD50	>2500 mg/kg	Oral	Rat

### Potential chronic health effects

- Chronic toxicity** : Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : Calcium chloride has caused mutagenic effects in vitro in two rat cell tests but was negative in an in-vitro hamster cell test.  
**Reproductive toxicity** : No known significant effects or critical hazards.

### Over-exposure signs/symptoms

- Inhalation** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.  
**Skin** : No known significant effects or critical hazards.

## 12. Ecological information

- Ecotoxicity** : May be harmful to freshwater aquatic species and to plants that are not saline tolerant. This product will contribute to the total BOD.
- Other adverse effects** : No known significant effects or critical hazards.

## 13. Disposal considerations

- Methods of disposal; Waste residues information; Contaminated packaging** : 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.
- Waste classification** : Not applicable.
- European waste catalogue (EWC)** : Not available.
- Hazardous waste** : To present knowledge of the supplier, this product is not regarded as hazardous waste as defined by EU Directive 94/904/EC

## 14. Transport information

### International transport regulations

Regulatory information	Proper shipping name	Class	UN number	PG	Label	Additional information
<b>ADR/RID Class</b>	Not applicable.	-	Not regulated.	-		-
<b>ADNR Class</b>	Not applicable.	-	Not regulated.	-		-
<b>IMDG Class</b>	Not applicable.	-	Not regulated.	-		-
<b>IATA Class</b>	Not applicable.	-	Not regulated.	-		-
<b>DOT Class</b>	Not applicable.	-	Not regulated.	-		-
<b>TDG Class</b>	Not applicable.	-	Not regulated.	-		-

ADR/RID: European road and rail transport regulation.

ADN: Rhine maritime transport regulation.

IMDG: International Maritime Dangerous Goods regulation.

IATA/DGR: International Air Transport regulation.

DOT: Department of Transportation Regulation.

TDG: Transport of Dangerous Goods regulation.

## 15. Regulatory information

### EU regulations

**Hazard symbol/symbols** :



Irritant

**Risk phrases** : R36- Irritating to eyes.

**Safety phrases** : S22- Do not breathe dust.  
S24- Avoid contact with skin.

**Contains** : Not applicable.

**Product use** : Classification and labelling have been performed according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and the intended use.  
- Industrial applications.

### Other EU regulations

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**EU statistical classification** : 2827 20 00  
(Tariff Code)

### United States

**HCS Classification** : Irritating material  
**U.S. Federal regulations** : TSCA : All components listed.  
 SARA 302/304/311/312 extremely hazardous substances: Not listed.  
 SARA 302/304 emergency planning and notification: Not listed.  
 SARA 302/304/311/312 hazardous chemicals: Not listed.  
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Not listed.  
 Clean Water Act (CWA) 307: Not listed.  
 Clean Water Act (CWA) 311: Not listed.  
 Clean Air Act (CAA) 112 accidental release prevention: Not listed.  
 Clean Air Act (CAA) 112 regulated flammable substances: Not listed.  
 Clean Air Act (CAA) 112 regulated toxic substances: Not listed.

**State regulations** : California prop. 65 : Not listed.

### Canada

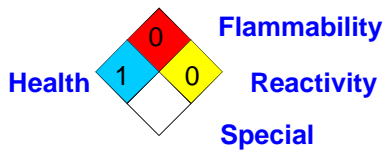
**WHMIS (Canada)** : Class D-2B: Material causing other toxic effects (Toxic).



DSL : All components listed.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

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



4- Extreme/Extrême  
 3- Serious/Sévère  
 2- Moderate/Modéré  
 1- Slight/Faible  
 0- Minimal/Minimum

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

4- Extreme/Extrême  
 3- Serious/Sévère  
 2- Moderate/Modéré  
 1- Slight/Faible  
 0- Minimal/Minimum

### HMIS RATING

Health	1
Fire hazard	0
Physical Hazard	0
Personal protection	C

### References

: ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List". - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2002.

## 16. Other information

**Full text of R-phrases referred to in sections 2 and 3 - Europe** : R36- Irritating to eyes.

**Full text of classifications referred to in sections 2 and 3 - Europe** : Xi - Irritant

### History

**Date of issue** : 12/15/2005  
**Date of previous issue** : 10/04/2002  
**Version** : 3



**[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.