

SAFETY DATA SHEET



Calcium propionate

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

Identification of the substance or preparation

Product name : Calcium propionate
Chemical name : Propanoic acid, calcium salt
Synonyms : Calcium propanoate. Calcium propionate. Propionic acid, calcium salt. Propanoic acid, calcium salt.
Chemical formula : $C_6H_{10}O_4.Ca$
CAS no. : 4075-81-4
EEC # : E-282
EINECS no. : 223-795-8
NAFTA# : 2915.50.1010

Use of the substance/preparation : The major uses of calcium propionate are as a mold inhibitor for baked goods such as bread, processed cheese, tobacco, pharmaceuticals, medicine (anti-fungal agent) and animal feed. Also used in butyl rubber to improve processing and heat resistance. Occurs naturally in some cheeses (e.g. Swiss cheese).

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: This substance (pure product) is not controlled under the Dangerous Substance Directive in Europe, the Hazard Communication Standard in the United States, and the Workplace Hazardous Material Information System in Canada.

Ingredient name *	CAS number	%	EC number	Classification
Europe See remark below. See section 16 for the full text of the R-phrases declared above				
United States of America Defined as non-hazardous by OSHA under 29 CFR 1910.1200(d).				
Canada Not a WHMIS controlled material.				

Within the present knowledge of the supplier, this product does not contain any hazardous ingredients in quantities requiring reporting in this section, in accordance with EU or national regulations.

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 not classified as dangerous according to Directive 67/548/EEC and its amendments.

- Classification** : Not classified.
- Physical/chemical hazards** : Combustible dust. May form explosive mixtures with air.
- Human health hazards** : Practically non-toxic in contact with skin.
- Physical state** : Solid. (Crystalline granules.)
- Emergency overview** : No specific hazard.
USE WITH CARE.
During formulation, follow good industrial hygiene practice.
- 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** : Non-irritating.
- Eyes** : Slightly irritating (USA).
- 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** : Prolonged contact with concentrated solutions may cause redness, drying and cracking of the skin (dermatitis). No effects on growth were observed after daily doses of 1 to 3 g of calcium propionate for 4 to 5 weeks. In a 1-year study, propionate at 4% in the diet (plus high levels of other food additives), caused no toxic effects.

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** : Under fire conditions or above decomposition temperature, emits carbon monoxide and dioxide, acetone and calcium carbonate. Calcium propionate can burn if heated to decomposition. Under certain conditions, a dust cloud of this substance can explode when ignited by a spark, flame or other sources of ignition. When evaluating the explosion hazard potential for the material, it is important to consider particle shape and size, dust concentration, presence of impurities, oxygen concentration, humidity and extent of containment.
- 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.
- Remark** : Under certain conditions, airborne dust of calcium acetate can explode when ignited by an electrostatic spark or other ignition source.

* 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. Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

7. Handling and storage

- Handling** : Combustible material. Avoid dusting when handling. Do not ingest. Avoid all possible sources of ignition (spark or flame). If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as metals and strong acids, or oxidizing agents. Keep container tightly closed in a cool, well-ventilated place. Dry sweeping is not recommended. Do not perform any welding, cutting, drilling or other work that is susceptible to cause heat on or near empty container or transfer equipment until all combustible solids have been removed. Maintain good housekeeping procedures to prevent accumulation of dust. Pre-wet the material or use a vacuum equipped with high efficiency filter(s). The use of compressed air to clean equipment, clothing, etc. is not recommended. Post 'NO SMOKING' signs.
- Storage** : Store in a dry, cool and well-ventilated area. Store and use away from heat, sparks, open flame or any other ignition source. Store away from direct sunlight. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.
- Packaging materials**
- Recommended** : Use original container.

8. Exposure controls/personal protection

Ingredient name

Calcium propionate

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** : A respirator is not needed under normal and intended conditions of product use.
- 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.
>8 hour(s) (breakthrough time): Natural rubber (latex).
- 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.
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- 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** : Solid. (Crystalline granules.)
- Colour** : Colorless or white.
- Odour** : Faint odour. (Slight.)
- Molecular weight** : 186.22 g/mole

Important health, safety and environmental information

- pH** : 7,5 to 10,5 (10% w/v)
- Melting point** : Decomposes.
- Vapour pressure** : 0 kPa (0 mm Hg) (at 20°C)
- Relative density** : 0,42-0,53 g/mL
- Solubility** : Easily soluble in hot water.
Soluble in cold water. Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol and acetone.

Other information

- Auto-ignition temperature** : Minimum ignition temperature: 530°C (986°F) (Cloud).
- Explosive properties** : Risks of explosion of the product in presence of mechanical impact: Not applicable.
Risks of explosion of the product in presence of static discharge: Not applicable, except for airborne dust.
Maximum explosion pressure: 480 kPa (4.8 bar; 70 psi).
Maximum rate of pressure rise: 4800 kPa/sec. (48 bar/sec. approx. 700 psi/sec.).

10. Stability and reactivity

- Stability** : The product is stable.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame).
- Materials to avoid** : Reactive with acids.
Slightly reactive with metals.
- Hazardous decomposition products** : Under fire conditions or above decomposition temperature, emits carbon monoxide and dioxide, acetone and calcium carbonate. Calcium propionate can burn if heated to decomposition. Under certain conditions, a dust cloud of this substance can explode when ignited by a spark, flame or other sources of ignition. When evaluating the explosion hazard potential for the material, it is important to consider particle shape and size, dust concentration, presence of impurities, oxygen concentration, humidity and extent of containment.



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 : Slightly 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 propionate	LD50	3920 mg/kg	Oral	Rat
	LD50	2350 mg/kg	Oral	Mouse

Potential chronic health effects

- Chronic toxicity** : Prolonged contact with concentrated solutions may cause redness, drying and cracking of the skin (dermatitis). No effects on growth were observed after daily doses of 1 to 3 g of calcium propionate for 4 to 5 weeks. In a 1-year study, propionate at 4% in the diet (plus high levels of other food additives), caused no toxic effects.
- Carcinogenicity** : Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.
- Mutagenicity** : No known significant effects or critical hazards.
- 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

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



TDG Class	Not applicable.	-	Not regulated.	-	-	-
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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

- Risk phrases** : This product is not classified according to EU legislation.
- 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

EU statistical classification : 2915 50 00
(Tariff Code)

United States

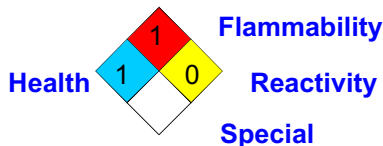
- HCS Classification** : Not regulated.
- U.S. Federal regulations** : TSCA 8(b) inventory: Propanoic acid, calcium salt
SARA 302/304/311/312 extremely hazardous substances: Not listed.
SARA 302/304 emergency planning and notification: Not listed.
SARA 302/304/311/312 hazardous chemicals: Not listed.
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)** : Not regulated.
CEPA DSL: Propanoic acid, calcium salt

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.) :

HMIS RATING

Health	1
Fire hazard	1
Physical Hazard	0
Personal protection	C

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

References

- : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part 1910.1200 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

History

Date of issue : 01 FE 2012
Date of previous issue : 16 FE 2009
Version : 5

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.