

## Material Safety Data Sheet

### CALCIUM SORBATE

#### Section 1 - Product Identification

Synonyms : Calcium (2E,4E)-hexa-2,4-dienoate  
Molecular Weight : 262.318 g/mol  
Chemical Formula :  $C_{12}H_{14}CaO_4$   
Company Identification : Tradeasia International Pte. Limited  
Address : 133 Cecil Street # 12-03 Keck Seng Tower, Singapore  
Tel: +65-6227 6365  
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Recommended use of the chemical and restrictions on use

The product is used in industrial manufacturing, in particular in :

- Food
- Cosmetic
- Pharmaceutical

#### Section 2 – Composition/Information on Ingredients

The product contains greater than 99.0 percent (%) calcium sorbate  $C_{12}H_{14}CaO_4$

Chemical Name	EC No/CAS No	Purity, %
Calcium (2E,4E)-hexa-2,4-dienoate	7492-55-9	min. 99.0

#### Section 3 – Hazards Identification

##### 3.1 Classification of the substance according to GHS

Skin corrosion/irritant, Category 2

H315 : Causes skin irritation.

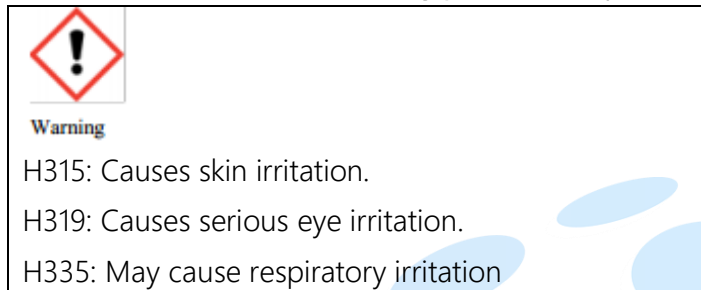
Serious eye irritation, Category 2A

H319: Causes serious eye irritation.

Respiratory tract irritation, Category 3

H335: May cause respiratory irritation.

### 3.2. GHS Label elements, including precautionary statements



**P264:** Wash eyes thoroughly after handling.

**P302 + P352:** If on skin, wash with plenty of soap and water.

**P321:** Specific treatment.

**P332 + P313:** If exposed or concerned: get medical advice/attention.

**P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**P337+P313:** If eye irritation persists: Get medical advice/attention.

**P362:** Take off contaminated clothing and wash before reuse.

### 3.3. Other hazards which do not result in classification

Calcium sorbate is a white odourless, powdered substance that is not flammable, combustible, or explosive, and has low acute oral and dermal toxicity.

#### Potential health effects

Dermal exposure is the most significant route of exposure in occupational and other settings. Inhalation may occur if calcium sorbate is used in powdered form.

#### Inhalation

Mild irritation effects to nose and throat may occur from inhalation of calcium sorbate powder.

#### Eye contact

Borax pentahydrate is a serious eye irritant.

#### Skin contact

Calcium sorbate causes skin irritation if 150 mg of calcium sorbate is applied onto skin for prolonged period.

#### Ingestion

Products containing calcium sorbate are safe for ingestion at 0.025% to 0.10%. Calcium sorbate has low acute toxicity. Swallowing amounts larger than that may cause gastrointestinal symptoms.

#### Potential ecological effects

Calcium sorbate has no known effect on ecology as it is naturally occurring in the environment too.

#### Signs and symptoms of exposure

Symptoms of accidental over-exposure to borax pentahydrate have been associated with ingestion or absorption through large areas of damaged skin. These may include nausea, vomiting, and diarrhoea, with delayed effects of skin redness and peeling.

Refer to section 11 for details on Toxicological data.

## Section 4 – First-Aid Measures

### 4.1. Description of first aid measures

#### Skin contact

Rinse skin with water.

#### Eye contact

Use eye wash fountain or fresh water to cleanse eye. If irritation persists for more than 30 minutes, seek medical attention.

#### Inhalation

If symptoms such as nose or throat irritation are observed, remove to fresh air.

#### Ingestion

If large amounts are swallowed (i.e. more than 350 grams), contact a doctor or toxicity centre immediately.

#### Note to physicians

N.A

### 4.2. Most important symptoms and effects, both acute and delayed

N.A.

### 4.3. Indication of any immediate medical attention and special treatment needed

N.A.

## Section 5 – Fire Fighting Measures

### 5.1. Suitable Extinguishing media

Any fire extinguishing media may be used on nearby fires.

### 5.2. Specific hazards arising from the chemical

Calcium sorbate is not flammable, combustible or explosive.

### 5.3. Special protective actions for fire-fighters

N.A.

## Section 6 – Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Wear splash goggles, lab coat, dust respirator and gloves.

### 6.2. Environmental precautions

Calcium sorbate is white powder that has low solubility in water. It is naturally occurring and degrades in soil so it does not pose any threat to environment.

### **6.3. Methods and material for containment and cleaning up**

#### **Land spill**

Vacuum, shovel or sweep up calcium sorbate and place in containers for disposal in accordance with applicable local regulations. Avoid contamination of water bodies during clean up and disposal. Goggles, full suit, dust respirator are needed to prevent inhalation of calcium sorbate powder.

#### **Spillage into water**

Where possible, remove any intact containers from the water and neutralize with sodium carbonate before diluting with large amount of water.

## **Section 7 – Handling and Storage**

### **7.1. Precautions for safe Handling**

To maintain package integrity and to minimise caking of the product, bags should be handled on a first-in first out basis. Good housekeeping and dust prevention procedures should be followed to minimise dust generation and accumulation. Your supplier can advise you on safe handling, please contact the supplier.

The product should be kept away from strong reducing agents. Apply above handling advice when mixing with other substances.

### **7.2. Conditions for safe storage, including any incompatibilities**

No special handling precautions are required, but dry, indoor storage is recommended. No specific requirements. Provide appropriate ventilation and store bags such as to prevent any accidental damage.

## **Section 8 – Exposure Controls/Personal Protection**

### **8.1. Control parameters**

Occupational exposure limits for dust (total and respirable). are treated by OSHA, Cal OSHA and ACGIH as "Particulate Not Otherwise Classified" or "Nuisance Dust"

ACGIH/TLV 10 mg/m<sup>3</sup>

Cal OSHA/PEL 10 mg/m<sup>3</sup>

OSHA/PEL (total dust) 15 mg/m<sup>3</sup>

OSHA/PEL (respirable dust) 5 mg/m<sup>3</sup>

### **8.2. Appropriate engineering controls**

Maintain air concentrations below occupational exposure standards.

Use local exhaust ventilation to keep airborne concentrations of borax pentahydrate dust below permissible exposure levels. Wash hands before breaks and at the end of the workday. Remove and wash soiled clothing.

### 8.3. Individual protection measures, such as personal protective equipment (PPE)

#### Respiratory protection

In case of prolonged exposure to dust wear a personal respirator in compliance with national legislation (make reference to the appropriate CEN standard)

#### Eyes and hands protection

Goggles and gloves are not required for normal industrial exposures, but may be warranted if environment is excessively dusty.

## Section 9 – Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

Appearance : white solid, crystal/powder

Odour : odourless

Odour threshold : N.A.

pH @ 20°C : 4 (1 % solution)

Melting point : 132 - 135°C

Boiling point : 233°C

Flash point : 127°C

Evaporation rate : N.A.

Flammability : May combust at high temperature

Upper/lower flammability or explosive limits : Non explosive

Vapour pressure : Negligible @ 20°C

Vapour density : N.A

Relative density : N.A

Solubility in water : 1.6 g/L

Partition coefficient: n-octanol/water : 1.33

Auto-ignition temperature : N.A.

Decomposition temperature : N.A

Viscosity : N.A.

### 9.2. Other information

Molecular weight : 262.318 g/mol

Specific gravity : 1.204 @ 20°C

## Section 10 – Stability and Reactivity

### 10.1. Reactivity

Calcium sorbate is a stable product in solid state but undergoes antioxidation to form carbonyls in solution.

#### **10.2. Chemical stability**

Calcium sorbate is a stable product, but when heated it sublimes. It undergoes antioxidation.

#### **10.3. Possibility of hazardous reactions**

N.A

#### **10.4. Conditions to avoid:**

N.A.

#### **10.5. Incompatible materials**

Avoid contact with alkali to prevent formation of sorbate salts.

#### **10.6. Hazardous decomposition products**

N.A.

### **Section 11 – Toxicological Information**

#### **11.1. Information on toxicological effect**

##### **11.1.1. Substances**

##### **Acute toxicity<sup>(1)</sup>**

Low acute oral toxicity; LD50 in rats > 10000 mg/kg of body weight. (Union, 2015)

##### **Skin corrosion / irritation<sup>(2)</sup>**

Low acute dermal toxicity; LD50 in rabbits is greater than 2,000 mg/kg of body weight. Borax decahydrate is poorly absorbed through intact skin. (Union, 2015)

##### **Serious eye damage/ irritation**

Calcium sorbate is an eye irritant.

##### **Respiratory or skin sensitization**

Calcium sorbate is a respiratory and skin irritant if used in large amount.

##### **Germcell mutagenicity**

Calcium sorbate is not mutagenic.

##### **Carcinogenicity**

Calcium sorbate is not carcinogenic

##### **Reproductive toxicity**

N.A

##### **STOT-single exposure**

N.A.

##### **STOT-repeated exposure**



N.A.

### **Aspiration Hazard**

Calcium sorbate has no aspiration hazard.

## **Section 12 – Ecological Information**

### **12.1.Toxicity**

Calcium sorbate occurs naturally in rowan berries and degrade naturally in soil so it does not pose threat to the environment.

#### **Phytotoxicity**

Calcium sorbate is antifungal thus it can inhibit growth of microbial in the environment. Thus, care should be taken to ensure large amount of calcium sorbate is not disposed at one go.

#### **Algal toxicity<sup>(3)</sup>**

Sorbate salts have high toxicity to tertiolecta under acidic conditions. (Chen HH, 2017)

#### **Invertebrate toxicity**

N.A

#### **Fish toxicity**

N.A

### **12.2. Persistence and degradability**

Calcium sorbate is naturally occurring and degrades to carbon dioxide in soil.

### **12.3. Bioaccumulative potential**

Not significantly bioaccumulative.

### **12.4. Mobility in soil**

The product is slightly soluble in water and is leachable through normal soil.

### **12.5. Other adverse effects**

No Data Available

## **Section 13 – Disposal Considerations**

### **13.1. Disposal methods**

Calcium sorbate can usually be disposed of at landfill sites. No special disposal treatment is required, but local authorities should be consulted about any specific local requirements. Tonnage quantities of product are not recommended to be sent to landfills. Such product should, if possible, be used for an appropriate application.

## **Section 14 – Transport Information**

Calcium sorbate has no UN Number, and is not regulated under international rail, road, water or air transport regulations.

14.1. UN number : N.A.

14.2. UN proper shipping name : N.A

14.3. Transport of hazard classes : N.A

14.4. Packing group : N.A

14.5. Environmental hazards : N.A.

14.6. Special precautions for user : N.A

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: N.A.

## Section 15 – Regulatory Information

### 15.1. Safety, health and environmental regulations

It should be noted that calcium sorbate are safe under conditions of normal handling and use, besides, they are essential nutrients to plants, and research shows that they play a beneficial role in human health. CLP classification has been solely based on animal tests where animals were exposed to high doses of calcium sorbate over long periods of time. These doses were many times higher than humans are exposed to under conditions of normal handling and use. Consequently, a precautionary decision was taken by the European Commission. Although we will comply with the body of legislation triggered by that decision, we are in process of all possible legal actions.

#### Clean Air Act (Montreal Protocol)

Calcium sorbate was not manufactured with and does not contain any Class I or Class II ozone depleting substances.

## Section 16 : Additional Information

### 16.1. Mainly changes made to the previous version of this Material Safety Data Sheet (MSDS):

- This MSDS complies with ISO 11014; the requirements of UN-GHS

Revision No	Revision content
05	<ul style="list-style-type: none"><li>• This SDS is updated in accordance with the GHS (Rev.6) (2015)-Guidance on the Compilation of Safety data Sheets.</li><li>• This SDS is updated in line with Eti Maden Corporate identity.</li></ul>

### 16.2. List of abbreviation and acronyms used in this MSDS

SDS : Safety Data Sheets

Index N° : atomic number of the element most characteristic of the properties of the substance



**CAS No** : Chemical Abstracts Service number

**EC No** : EINECS Number : European Inventory of Existing Commercial Substances

**GHS** : Globally Harmonised System of Classification and Labelling

**LD<sub>50</sub>** : Median Lethal Dose

**LC<sub>50</sub>** : Lethal Concentration, 50%

**N.A.** : Not Applicable

**OSHA** : Occupational Safety & Health Administration

**Cal OSHA** : The State of California Division of Occupational Safety and Health (DOSH)

**PEL** : Permissible Exposure Limits

**ACGIH** : American Conference of Governmental Industrial Hygienists

**TLV** : Threshold Limit Value

**Japanese MITI** : Japanese Ministry of International Trade and Industry

**EC<sub>50</sub>** : Half maximal effective concentration

**UN** : United Nations

### **16.3. List of relevant hazard statements and precautionary statements used in this MSDS**

#### **Hazard Statement**

**H315** : Causes skin irritation

**H319**: Causes serious eye irritation

**H335**: May cause respiratory irritation.

#### **Precautionary Statements**

##### **Prevention**

**P264**: Wash eyes thoroughly after handling.

**P302 + P352**: If on skin, wash with plenty of soap and water.

**P321**: Specific treatment.

**P332 + P313**: If exposed or concerned: get medical advice/attention.

**P305+P351+P338**: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**P337+P313**: If eye irritation persists: Get medical advice/attention.

**P362**: Take off contaminated clothing and wash before reuse.

##### **Disposal**

**P501**: Dispose of contents/container to in accordance with local regulations.

### **16.4. References**

1, 2. Union, E. (2015). *Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products*

3. HH, X. X. (2017). Comparative toxic effects of butylparaben sodium, sodium diacetate and potassium sorbate to *Dunaliella tertiolecta* and HL7702 cells. *National Centre for Biotechnology Information*.

#### **16.5. Disclaimer of Liability**

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