

Kolkata – 700 089, India.

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# **Section 1 - Chemical Product and Company Identification**

1.1 MSDS Name: Calcium Citrate USP

**1.2 Product Code**: CACUS97

1.3 Recommended Use and Restrictions on Use: Pharmaceutical ingredient,

Nutritional supplement, Industrial applications.

**Restrictions on Use:** Avoid generating dust; refer to hazard information.

1.4 Company Identification:

WEST BENGAL CHEMICAL INDUSTRIES LIMITED

145/1, Jessore Road, Lake Town,

Kolkata – 700 089, India. Phone: +91 33 4025 1700 Fax: +91 33 2574 7410 Website: <u>www.wbcil.com</u> Email: webcil@wbcil.com

## Section 2 – Hazards Identification

#### 2.1 Classification of the Substance or Mixture:

- GHS Classification: Not classified as hazardous under the Globally Harmonized System (GHS).
- OSHA Hazard Classification: Not classified as hazardous under OSHA Hazard Communication Standard (29 CFR 1910.1200).
- REACH Classification: Not classified as hazardous according to Regulation (EC) No. 1272/2008 (CLP Regulation).
- WHMIS Classification: Not classified as hazardous under WHMIS 2015.

#### 2.2 Hazard classification:

Eye Irritation: Category 2

2.3 Signal:





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#### Warning

#### 2.4 Hazard statements:

H319 (14.3%): Causes serious eye irritation

# 2.5 Precautionary statements:

#### **Prevention:**

- P264+P265: Wash hands thoroughly after handling. Avoid eye contact.
- P280: Wear protective gloves, clothing, eye protection, and face protection.

#### Response:

- P305+P351+P338: IF IN EYES Rinse cautiously with water for several minutes. Remove contact lenses if easy to do. Continue rinsing.
- P337+P313: If eye irritation persists, get medical advice/attention.

# 2.6 Hazards Not Otherwise Classified (HNOC) or Not Covered by GHS:

None identified.

#### 2.7 Potential Acute and Chronic Health Effects:

#### 2.7.1 Acute Health Effects:

 Slightly hazardous in case of eye contact (irritant), ingestion, or inhalation.

#### 2.7.2 Chronic Health Effects:

o No known chronic health effects associated with long-term exposure.

# 2.8 Toxicological Information:

2.8.1 Carcinogenic Effects: Not listed as a carcinogen by OSHA, IARC, or NTP.





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2.8.2 Mutagenic Effects: No data available.

2.8.3Teratogenic Effects: No data available.

2.8.4 Developmental Toxicity: No data available.

# 2.9 Pictogram:



#### 2.10 NFPA SCALE:



NFPA SCALE (0-4)

#### 2.11 HMIS RATINGS:

Health	1
Flammability	1
Physical Hazard	0
Personal protection	E

HMIS RATINGS (0-4)





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# Section 3 – Composition/Information On Ingredients

**3.1 Ingredient Name:** Calcium Citrate

**3.2 Synonym:** Tricalcium dicitratetetrahydrate, CALCIUM

CITRATE TETRAHYDRATE

**3.3 CAS Number:** 5785-44-4 **3.4 EC no:** 212-391-7

**3.5 Molecular formula:**  $C_{12}H_{10}Ca_3O_{14}.4H_2O$ 

**3.6 Molecular weight:** 570.50 g/mol

## Section 4 – First Aid Measures

# 4.1 Description of First Aid Measures:

#### 4.1.1 General Advice

Consult a physician immediately. Show this safety data sheet to the doctor or medical personnel in attendance. Remove contaminated clothing and shoes immediately.

#### 4.1.2 If Inhaled

Remove the affected person to fresh air immediately. If not breathing, provide artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if symptoms persist.

#### 4.1.3 In Case of Skin Contact

Wash affected area thoroughly with soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Seek medical attention if irritation develops or persists.

# 4.1.4 In Case of Eye Contact





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Rinse eyes immediately with plenty of water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek medical advice if irritation persists.

#### 4.1.5 If Swallowed

Rinse mouth with water. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.

## 4.2 Most Important Symptoms and Effects, Both Acute and Delayed:

- 4.2.1 Acute Symptoms: Irritation of eyes, skin, and respiratory tract. Possible mild gastrointestinal discomfort if ingested.
- 4.2.2 Chronic Symptoms: No known chronic health effects from normal handling.

## 4.3 Indication of Immediate Medical Attention and Special Treatment Needed:

Provide symptomatic and supportive treatment. Ensure adequate ventilation and oxygen supply. No specific antidote is known. Treat symptomatically based on the patient's condition.

# **Section 5 – Fire-Fighting Measures**

# 5.1 Flammability and Explosion Hazards:

- 5.1.1 Flammability: Calcium Citrate may be combustible at very high temperatures.
- 5.1.2 Suitable extinguishing media
  Suitable extinguishing media Water Foam Carbon dioxide (CO2) Dry powder





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Unsuitable extinguishing media For this substance/mixture no limitations of extinguishing agents are given.

# 5.1.3 Unsuitable Extinguishing Media: Avoid high-pressure water jets.

## **5.2Auto-Ignition Temperature:**

Data not available.

#### 5.5 Flash Point:

Closed Cup: Above 93.3°C (200°F).

#### 5.6 Flammable Limits:

Not available.

# **5.7 Products of Combustion:**

Calcium oxide (CaO), carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), and other metallic oxides.

# **5.8 Products of Decomposition:**

Calcium carbonate (CaCO<sub>3</sub>) and trace amounts of acetone or volatile organic compounds under high heat.

# 5.9 Fire and Explosion Hazard:

Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.





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#### 5.10 Fire Hazards in Presence of Various Substances:

Stable under normal handling and storage conditions.

#### 5.11 Hazardous Products of Combustion:

Fire may produce irritating and/or toxic gases, including Carbon oxides, Calcium oxides.

# **5.12 Special Fire Fighting Instructions:**

Contain runoff from fire control or dilution water - Runoff may cause pollution.

5.12.1 SMALL FIRE: Use DRY chemical powder.

5.12.2LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

## 5.13 Specific Fire-Fighting Procedures:

Avoid creating or dispersing dust clouds. Remove personnel from the immediate area. Cool nearby containers with water spray to prevent overheating or rupture.

#### **5.14 Protective Equipment for Firefighters:**

Use self-contained breathing apparatus (SCBA) with full-face mask in positive pressure mode. Wear fire-resistant protective clothing, gloves, and boots. Avoid inhaling fumes from combustion or decomposition.

## **5.15 Special Precautions:**

Dust particles may form explosive mixtures in confined spaces with an ignition source. Maintain proper ventilation in storage and handling areas.





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# Section 6 - Accidental Release Measures

## 6.1 Personal Precautions, Protective Equipment, and Emergency Procedures:

### 6.1.1 For Non-Emergency Personnel

Avoid dust formation. Ensure adequate ventilation in the affected area. Avoid inhalation of dust and contact with skin or eyes. Wear appropriate personal protective equipment (PPE) as gloves, goggles, and dust masks.

# 6.1.2 Such for Emergency Responders

Wear self-contained breathing apparatus (SCBA) and full protective clothing if dust levels are high. Prevent further release or dispersion of material if safe to do so.

#### **6.2 Environmental Precautions:**

Prevent material from entering waterways, drains, or soil. Avoid dispersal of dust into the atmosphere. Inform appropriate authorities if significant amounts enter the environment.

# **6.3 Methods and Material for Containment and Cleaning Up:**

- 6.3.1 Small Spill: Use appropriate tools (e.g., brush and dustpan) to collect the spilled solid. Place the collected material in a suitable, labeled waste container. Clean the spill site with water, ensuring dust is minimized. Dispose of collected waste in accordance with local regulations.
- 6.3.2 Large Spill: Avoid creating airborne dust. Use a shovel or vacuum system equipped with a HEPA filter to collect material. Place the collected material in a sealed, labeled waste container. Wash the contaminated surface thoroughly with water. Do not allow water used for cleaning to enter public drainage systems or watercourses without proper treatment.





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#### **6.4 Reference to Other Sections:**

Refer to Section 8 for personal protective equipment (PPE) requirements.

Refer to Section 13 for waste disposal considerations.

# Section 7 – Handling and Storage

# 7.1 Precautions for Safe Handling:

- 7.1.1 Handling Precautions: Avoid generating or inhaling dust. Use only in well-ventilated areas or with local exhaust ventilation. Wear appropriate personal protective equipment (PPE), including gloves, goggles, and dust masks. Avoid contact with skin and eyes. Do not eat, drink, or smoke while handling this material. Ensure proper grounding and bonding of equipment to prevent static discharge. Wash hands thoroughly after handling.
- 7.1.2 Hygiene Measures: Remove contaminated clothing and wash before reuse. Practice good industrial hygiene measures, such as hand washing and maintaining clean workspaces. Avoid prolonged or repeated exposure.

# 7.2 Conditions for Safe Storage, Including Any Incompatibilities:

- 7.2.1 Storage Conditions: Store in a tightly sealed container. Keep container dry and in a cool, well-ventilated area. Protect from heat, moisture, and direct sunlight. Avoid exposure to incompatible materials such as strong oxidizing agents. Keep away from food, drink, and animal feed. Ensure containers are clearly labeled and tightly closed when not in use.
- 7.2.2 Incompatible Materials: Avoid contact with strong oxidizing agents and moisture.
- 7.2.3 Emergency Storage Measures: Use containers made from chemically compatible materials (e.g., polyethylene, stainless steel). Avoid containers prone to corrosion.





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# 7.3 Specific End Uses:

Industrial and pharmaceutical manufacturing applications. Use in accordance with industry-specific regulations and guidelines.

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

#### 8.1 Control Parameters:

Occupational Exposure Limits (OELs)

- o OSHA PEL (Permissible Exposure Limit): Not established.
- o **ACGIH TLV (Threshold Limit Value):** Not established.
- REACH DNEL (Derived No-Effect Level): Not available.
- WHMIS Exposure Limits: Not established.

**Biological Exposure Limits** 

Not available.

# 8.2 Exposure Controls:

8.2.1 Appropriate Engineering Controls

Use local exhaust ventilation or a dust collection system to minimize airborne particles. Ensure adequate general ventilation in work areas. Provide eyewash stations and safety showers nearby. Avoid creating dust clouds during handling and processing.





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## 8.3Personal Protective Equipment (PPE):

## 8.3.1 Eye/Face Protection

Safety goggles with side shields (EN 166 standard) or chemical splash goggles.

#### 8.3.2 Skin Protection

Chemical-resistant gloves (e.g., nitrile or neoprene). Long-sleeved protective clothing or lab coats.

# 8.3.3 Body Protection

For normal handling: Lab coat. For large spills: Full chemical-resistant protective suit.

### 8.3.4 Respiratory Protection:

Use a NIOSH-approved respirator (e.g., N95 mask) if airborne dust levels exceed safe limits. For large spills or high dust concentration: Use a self-contained breathing apparatus (SCBA).

#### 8.3.5 Foot Protection:

Safety boots made from chemical-resistant material.

#### 8.4 Environmental Exposure Controls:

Prevent material from entering drains, waterways, or soil. Implement dust control measures to prevent environmental contamination. Use proper waste disposal methods (see Section 13).

## 8.5 Hygiene Measures:





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Wash hands, face, and any exposed skin thoroughly after handling. Remove contaminated clothing and wash before reuse. Do not eat, drink, or smoke while handling Calcium Citrate. Maintain clean and dust-free workspaces.

Section 9 - Physical and Chemical Properties for Calcium Citrate USP					
Property	Value / Description				
Amnoovonoo	White, free-flowing powder with				
Appearance	occasional friable lumps				
Physical State	Solid (Powder)				
Color	White				
Odor	Odorless				
Melting Point / Freezing Point	Approximately 120°C (Loses water)				
(Dehydration Temperature)	Approximately 120 e (103e3 water)				
Boiling Point / Range	309.6 °C (lit)				
Molecular Weight	570.49 g/mol				
pH (in solution)	5.0–9.0 (10% aqueous solution at 25°C)				
	Slightly soluble in water; freely soluble in				
Solubility	diluted 3(N) HCl and diluted 2(N) Nitric				
	acid; insoluble in alcohol				
Specific Gravity / Density	1.63 g/cm³ at 25°C				
Vapor Pressure	Not Applicable				
Vapor Density	Not Applicable				
Partition Coefficient (n-	Not Applicable				
octanol/water)	Not Applicable				
Auto-Ignition Temperature	Not Available				
Flash Point	>93.3°C (closed cup)				
Decomposition Tomposature	Above 120°C (Releases acetone and				
Decomposition Temperature	calcium carbonate)				
Flammability (Solid, Gas)	Not Applicable				



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<b>Explosive Properties</b>	Not Applicable
Oxidizing Properties	Not Applicable
Viscosity	Not Applicable

# **Section 10 - Stability and Reactivity**

#### 10.1 Reactivity:

Calcium Citrate is non-reactive under normal handling and storage conditions.

# 10.2 Chemical Stability:

Stable under normal temperature and pressure when stored as recommended. Avoid high temperatures (>120°C) as decomposition may occur.

## 10.3 Possibility of Hazardous Reactions:

None known under normal storage and handling conditions. Will not undergo hazardous polymerization.

# 10.4 Chemical Stability:

Stable under normal temperature and pressure when stored as recommended. Avoid high temperatures (>120°C) as decomposition may occur.

# 10.5 Possibility of Hazardous Reactions:

None known under normal storage and handling conditions. Will not undergo hazardous polymerization.

#### 10.6 Conditions to Avoid:

Excessive heat (>120°C), Moisture or prolonged exposure to humidity, Dust formation and dispersion in confined spaces.

## 10.7 Incompatible Materials:

Strong oxidizing agents (e.g., peroxides, nitric acid), Strong acids or strong bases May cause degradation or reaction.





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## **10.8** Hazardous Decomposition Products:

10.8.1Thermal Decomposition Products: Calcium oxide (CaO), carbon dioxide (CO₂), carbon monoxide (CO), and trace acetone.

10.8.2 In Fire Scenarios: Refer to Section 5 – Fire-Fighting Measures for more details.

**10.9 Other Information:** Avoid creating dust clouds, as fine particles may pose a physical hazard. Ensure proper ventilation in handling and storage areas.

# **Section 11 - Toxicological Information**

**11.1 Routes of Exposure:** Inhalation, Ingestion. Skin contact, Eye contact.

# 11.2 Acute Toxicity:

Oral LD50 (Rat): >5000 mg/kg (Low acute toxicity).

Inhalation LC50 (Rat): No data available (Dust may cause mild respiratory irritation).

Dermal LD50: No data available (Expected to have low toxicity based on composition).

#### 11.3 Skin Corrosion/Irritation:

Slightly hazardous in case of prolonged or repeated skin contact. May cause mild skin irritation.

# 11.4 Serious Eye Damage/Irritation:

Dust may cause mechanical eye irritation. Symptoms may include redness, itching, and tearing.

## 11.5 Respiratory or Skin Sensitization:





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Not expected to cause respiratory or skin sensitization.

# 11.6 Germ Cell Mutagenicity:

No data available.

# 11.7 Carcinogenicity:

Not listed as a carcinogen by OSHA, IARC, NTP, or EU CLP.

# 11.8 Reproductive Toxicity:

No data available.

# 11.9 Specific Target Organ Toxicity (STOT) - Single Exposure:

Dust inhalation may cause mild irritation to the respiratory system.

# 11.10 Specific Target Organ Toxicity (STOT) - Repeated Exposure:

No data available.

#### 11.11 Aspiration Hazard:

Not classified as an aspiration hazard.

## 11.12 Chronic Toxicity:

No significant chronic health effects expected under normal handling and usage.





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# **Section 11 - Toxicological Information**

#### 11.13 Other Information:

Toxicological properties have not been fully investigated. Individuals with preexisting respiratory conditions may experience exacerbated symptoms upon prolonged exposure to dust.

## **Section 12 - Ecological Information**

# 12.1 Toxicity

#### 12.1.1 Aquatic Toxicity:

- Fish (96 hours, LC50): >100 mg/L (Low toxicity).
- Daphnia magna (48 hours, EC50): >100 mg/L (Low toxicity).

#### 12.1.2 General Statement:

Calcium citrate dissociates into calcium ions and citrate in aquatic environments, both of which are naturally occurring and generally nontoxic to aquatic organisms.

# 12.2 Persistence and Degradability

Calcium Citrate is considered readily biodegradable under natural conditions.

Degradation products include calcium ions (Ca<sup>2+</sup>) and citrate anions, both of which are naturally present in the environment.





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#### 12.3 Bioaccumulative Potential

12.3.1 Bioaccumulation: Not expected to bioaccumulate in aquatic or terrestrial organisms due to its high-water solubility and natural occurrence in biological systems.

12.3.2 Bioconcentration Factor (BCF): Not applicable (low bioaccumulation potential).

# **12.4 Mobility in Soil:**

Calcium citrate is moderately mobile in soil due to its partial solubility in water. Dissociation into calcium and citrate ions allows migration through soil layers.

## 12.5 Results of PBT and vPvB Assessment

PBT (Persistent, Bioaccumulative, and Toxic): Not classified as PBT.

vPvB (Very Persistent and Very Bioaccumulative): Not classified as vPvB.

## 12.6 Products of Biodegradation:

Possibly hazardous short-term degradation products are not likely. However, long term degradation products may arise.

#### 12.7 Other Adverse Effects:

Calcium citrate is not expected to cause significant environmental harm under normal usage and disposal practices. Excessive release into water bodies may lead to localized pH changes and nutrient imbalances.





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# Section 13 - Disposal Considerations

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations

# **Section 14 - Transport Information**

14.1 UN number

ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods IMDG: Not dangerous goods IATA: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA: 
14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available Further information Not classified as dangerous in the meaning of transport regulations.

**Land Transport (Australia)** 

**ADG Code** 

Proper Shipping Name Calcium Citrate
Class No Data Available
Subsidiary Risk(s) No Data Available

No Data Available

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

**Comments** NON-DANGEROUS GOODS: Not regulated for LAND transport.



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# Land Transport (Malaysia)

ADR Code

**Proper Shipping Name** Calcium Citrate

Class No Data Available Subsidiary Risk(s) No Data Available

No Data Available

UN Number NoHazchemPack GroupSpecial ProvisionData AvailableNo Data AvailableNo Data Available

**Comments** NON-DANGEROUS GOODS: Not regulated for LAND transport.

## Land Transport (New Zealand)

NZS5433

**Proper Shipping Name** Calcium Citrate

Class No Data Available Subsidiary Risk(s) No Data Available

No Data Available

UN NumberHazchemPack GroupSpecial ProvisionNo Data AvailableNo Data Available

**Comments** NON-DANGEROUS GOODS: Not regulated for LAND transport.

# **Land Transport (United States of America)**

**US DOT** 

**Proper Shipping Name** Calcium Citrate

Class No Data Available Subsidiary Risk(s) No Data Available

No Data Available

UN NumberHazchemNo Data Available





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**Pack Group** No Data Available **Special Provision** No Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Sea Transport** IMDG Code

**Proper Shipping Name:** Class Subsidiary Risk(s)

**UN Number** Hazchem Pack Group

**EMS Marine Pollutant** 

Comments

**Special Provision** 

**Air Transport** 

IATA DGR

**Proper Shipping Name:** Class Subsidiary Risk(s)

**UN Number** Hazchem

**Pack Group Special Provision** 

Comments

**National Transport Commission (Australia)** 

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code).

Calcium Citrate

No Data available No Data available

No Data available No

Calcium Citrate

No Data available

No Data available

No Data available

No Data available No Data available

No Data available

AIR transport

Non-Dangerous Goods: Not regulated for **SEA** transport



Non-Dangerous Goods: Not regulated for



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**Dangerous Goods Classification:** Not Dangerous Goods according to the criteria of

the Australian Code for the Transport Of dangerous

Goods by Road & Rail (ADG Code).

# Section 15 - Regulatory Information

# **United States of America Inventory**

Component	<u>CAS No</u>	<u>TSCA</u>	TSCA Inventory notification- Active- inactive	TSCA - EPA Regulatory Flags
Calcium Orotate tetrahydrate	5785-44-4	-	-	-
Calcium Orotate	813-94-5	Х	Active	-

# Legend:

TSCA US EPA(TSCA)- Toxic Substances Control Act, (40 CFR Part 710)

X – Listed

'-' - Not listed

TSCA- Per 40 CFR 751, regulation of certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not Applicable

**TSCA 12(b)** – Notices of Export Not Applicable





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## **International Inventories:**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Calcium citrate tetrahydrate	5785- 44-4	-	-	-	Х	-		Х	-	-
Calcium Citrate	813- 94-5	Х	-	212- 391-7	Х	Х	Х	Х	Х	KE- 34049

**KECL** – NIER number or KE number (https://ncis.nier.go.kr/en/main.do)

# **U.S Federal Regulations:**

**SARA 313:** Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Actand Title 40 of the Copde of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories:** Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act): Not Applicable

Authorisation / Restrictions according to EU REACH: Not applicable





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Component	CAS No	REACH (1907/2006)- Annex XIV – Substances subject to Authorization	REACH (1907/2006)- Annex XVII – Restrictions on Certain dangerous Substances	REACH REGULATI ON (EC 1907/2006 ) article 59- Candidate List of Substance s of very High Concern (SVHC)
Calcium Citrate tetrahydrate	5785-44-4	-	-	-
Calcium Citrate	813-94-5	-	-	-

Safety, health and environmental regulations / legislation specific for the substance or mixture.

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Calcium Citrate	5785-44-4	Not	Not	Not applicable	Not applicable
tetrahydrate		applicable	applicable		
Calcium Citrate	813-94-5	Not	Not	Not applicable	Not applicable
		applicable	applicable		

Contains component(s) that meet a "definition" of per & poly fluoroalkyl substance (PFAS)?





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Not applicable

# **Other International Regulations:**

Component	CAS No	Seveso III Directive (2012/18/EC) -Qualifying Quantities for major accident notification	Seveso III Directive (2012/18/EC)- Qualifying Quantities for safety report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Calcium Citrate tetrahydrate	5785-44-4	Not applicable	Not applicable	Not applicable	Not applicable
Calcium Citrate	813-94-5	Not applicable	Not applicable	Not applicable	Not applicable



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## **Section 16 - Other Information**

Other information Full text of other abbreviations ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS -Globally Harmonized System; GLP - Good Laboratory Practice; IARC -International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC -No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT -Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition





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Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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