



WEST BENGAL CHEMICAL INDUSTRIES LIMITED

145/1, Jessore Road, Lake Town,

Kolkata – 700 089, India.

Phone: +9133 4025 1700 Fax: +9133 2574 7410

Email: [wbcil@wbcil.com](mailto:wbcil@wbcil.com)

Website: [www.wbcil.com](http://www.wbcil.com)

## Section 1 - Chemical Product and Company Identification

**1.1 MSDS Name:** Calcium Ascorbate

**1.2 Product Code :** CASUS98

**1.3 Company Identification:**

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## Section 2 - Composition / Information on Ingredients

### 3.1 Substances

Sl No	Ingredient Name	CAS Number	EC no	Molecular Formula	Molecular Wt.
1)	Calcium Ascorbate	5743-28-2	XXXX	C <sub>12</sub> H <sub>18</sub> CaO <sub>14</sub>	426.34 g/mol





### Section 3: Hazards Identification

**Potential. Chronic/ acute health effects:**

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

**Classification of the substance or mixture:**

Not a hazardous substance or mixture.

**GHS Label elements, including precautionary statements:** Not a hazardous substance or mixture.

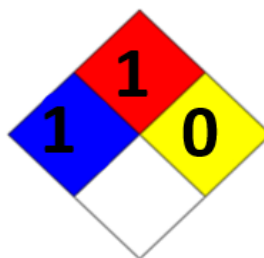
**Hazards not otherwise classified (HNOC) or not covered by GHS:** none

**CARCINOGENIC EFFECTS:** Not available.

**MUTAGENIC EFFECTS:** Not available.

**TERATOGENIC EFFECTS:** Not available.

**DEVELOPMENTAL TOXICITY:** Not available.



NFPA SCALE (0-4)



asparto

Health	1
Flammability	1
Physical Hazard	0

Personal protection **A**  
HMIS RATINGS (0-4)

### Section 4 - First Aid Measures

#### 4.1 Description of first aid measures

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**





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## Section 4 - First Aid Measures

Never give anything by mouth to an unconscious person. Rinse mouth with water.

### **Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labeling and/or in section 11

### **Indication of any immediate medical attention and special treatment needed**

No data available

## Section 5 - Fire-Fighting Measures

**Flammability of the Product:** May be combustible at high temperature.

**Auto-Ignition Temperature:** Not available.

**Flash Points:** Not available.

**Flammable Limits:** Not available.

**Products of Combustion:** Products of combustion are carbon oxides (CO, CO<sub>2</sub>). Some metallic oxides.

**Products of Decomposition:** acetone and calcium carbonate

**Fire Hazards in Presence of Various Substances:** Not available.

**Explosion Hazards in Presence of Various Substances:** Risks of explosion of the product in presence of mechanical impact/ static discharge: Not available.

### **Fire Fighting Media and Instructions:**

**SMALL FIRE:** Use DRY chemical powder.

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

**Special Remarks on Explosion Hazards:** Not available.

Suitable Extinguishing Media Water spray. Alcohol-resistant foam. Dry chemical. Carbon dioxide (CO<sub>2</sub>).





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## Section 6 - Accidental Release Measures

**Small Spill:** Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:** Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.

## Section 7 - Handling and Storage

**Precautions:** Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents, moisture.

**Storage:** Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place.

**Storage class**

**Storage class (TRGS 510): 11: Combustible Solids.**

## Section 8 - Exposure Controls / Personal Protection

**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:** Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:** Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.





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## Section 9 - Physical and Chemical Properties

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

<b>Appearance Form</b>	:	White to slightly yellow, practically Odorless powder
<b>Form</b>	:	Solid, powder in nature.
<b>Color</b>	:	White to slightly yellow.
<b>Molecular weight</b>	:	426.34gm/mol
<b>Solubility</b>	:	Freely soluble in water; slightly soluble in alcohol; insoluble in ether.
<b>pH (of 10% w/v Solution)</b>	:	6.8 – 7.4
<b>9.2 Other safety information</b>	:	No data available.
<b>Melting point / Freezing point</b>	:	166 °C / 331 °F Literary Reference.
<b>Boiling point / boiling range</b>	:	No information available.
<b>Flash Point</b>	:	300 °C / 572 °F CC (closed cup).
<b>Relative density</b>	:	0,7 g/cm <sup>3</sup> .

## Section 10 - Stability and Reactivity

**Reactivity:** No data available

**Chemical stability:** Stable under recommended storage conditions.

**Possibility of hazardous reactions:** No data available

**Conditions to avoid:** No data available

**Incompatible materials:** Strong oxidizing agents

**Hazardous decomposition products/ Other decomposition products:** No data available In the event of fire: see section 5





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## Section 11 - Toxicological Information

**Routes of Entry:** Inhalation. Ingestion.

**Toxicity to Animals:** LD50: Not available. LC50: Not available.

**Acute Toxicity:**

**Oral LD50 (rat):** 11,900 mg/kg

**Oral LD50 (mouse):** 8,000 mg/kg

**Intravenous LD50 (mouse):** 518 mg/kg

**Local Effects:**

**Eye Contact:** May cause irritation.

**Skin Contact:** May cause irritation, especially when in contact with moisture (e.g., perspiration).

**Mucous Membranes:** May cause irritation.

**Chronic Effects on Humans:** Not available.

**Other Toxic Effects on Humans:** Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** May affect genetic material.

**Special Remarks on other Toxic Effects on Humans:**

**Acute Potential Health Effects:** **Skin:** May cause skin irritation. **Eyes:** Dust may cause eye irritation. **Inhalation:** Dust may cause respiratory tract irritation. **Ingestion:** May cause gastrointestinal (digestive) tract irritation. May affect brain. The toxicological properties have not been fully investigated.

**Mutagenicity**

No evidence of mutagenic effects based on available studies.

**Carcinogenicity**

Not classified as a carcinogen based on available data from various species studies.

**Reproductive Toxicity**

No evidence of teratogenic or embryotoxic effects in available studies.

**Additional Toxicological Information**

The Recommended Daily Allowance (RDA) for Vitamin C is 60 mg.

Oral intake of up to 9 grams per day does not generally result in serious toxic effects; however, doses higher than the RDA may cause gastrointestinal disturbances such as diarrhea.

**Chronic toxicity:** Chronic intake of 4–12 grams per day may result in the formation of urinary calculi (kidney stones) in predisposed individuals.





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## Section 12 - Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:** Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are more toxic.

**Special Remarks on the Products of Biodegradation:** Not available.

**Inherent biodegradability:** Well inherently biodegradable;

97 %, 5 d; 100 %, 15 d

Ecotoxicity: Barely toxic for fish (rainbow trout) LC50 (96 h) 1020 mg/l; the inhibitory concentration relates to re-attachment to substrate (*Dreissena polymorpha*) MIC (48 h) > 50 g/L(nominal concentration).





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## Toxicity

### Aquatic Toxicity:

**Fish (LC50, 96h, *Leuciscus idus*):** >1000 mg/L (Based on studies with Vitamin C and related compounds, expected to show low aquatic toxicity)

**Daphnia (EC50, 48h, *Daphnia magna*):** >1000 mg/L (Expected to show minimal toxicity)

**Algae (EC50, 72h, *Pseudokirchneriella subcapitata*):** No significant effect on growth at concentrations up to 1000 mg/L

### Persistence and Degradability

#### Biodegradability:

Calcium ascorbate is readily biodegradable in water and soil environments. It breaks down into ascorbic acid (Vitamin C), which is naturally metabolized by living organisms. The compound does not persist in the environment for prolonged periods.

**Biological Oxygen Demand (BOD5):** 60-80% biodegradability within 5 days in standard test conditions (OECD 301B).

#### Degradation Products:

Calcium ascorbate degrades into Vitamin C (ascorbic acid), which is metabolized into harmless substances such as carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O). No hazardous degradation products are expected under normal environmental conditions.

### Bioaccumulative Potential

#### Bioaccumulation:

The bioaccumulation potential of calcium ascorbate is **low** due to its high water solubility and quick metabolic breakdown.

It does not accumulate in the tissues of aquatic or terrestrial organisms.

### Mobility in Soil

#### Soil Mobility:

Calcium ascorbate is highly soluble in water, which increases its mobility in soil and water environments. It is likely to leach through soil layers without significant adsorption, resulting in low soil retention.

### Other Adverse Effects

#### Ozone Depletion Potential:

Calcium ascorbate does not contribute to ozone depletion. It is not classified as an ozone-depleting substance.

#### Global Warming Potential (GWP):

The compound does not contribute to global warming. It does not produce greenhouse gases during its degradation.







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**Effect on Terrestrial Plants and Animals:**

No significant adverse effects on terrestrial plants or animals are expected based on available data. Calcium ascorbate is an essential nutrient for most organisms at low concentrations.

**Endocrine Disruption:**

No evidence of endocrine-disrupting properties based on available toxicological studies.

**Additional Ecological Information:**

**Environmental Fate:**

Calcium ascorbate is considered an environmentally benign substance with minimal adverse effects. Its natural degradation and low toxicity make it a compound with minimal long-term environmental impact.


**Ecotoxicological Summary:**

The compound does not pose a significant risk to the environment under normal conditions of use and disposal. However, it should still be handled with care to avoid large-scale environmental release.

### 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

<b>DOT Classification</b>	:	Not a DOT controlled material.
<b>Air transport Goods</b>	:	Nonhazardous/non dangerous as per IATA DGR
<b>Special Provisions for Transport</b>	:	Not applicable
<b>IATA Specification</b>	:	Non-dangerous, non-hazardous
<b>DOT (Pictograms)</b>		





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## Section 15 - Regulatory Information

**Federal and State Regulations:** TSCA 8(b) inventory: Calcium Ascorbate

**Other Regulations:** Not available.

**Other Classifications:**

**WHMIS (Canada):** Not controlled under WHMIS (Canada).

**DSCL (EEC):** This product is not classified according to the EU regulations.

**HMIS (U.S.A.):**

**Health Hazard:** 1

**Fire Hazard:** 1

**Reactivity:** 0

**Personal Protection:** a

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

**Health:** 1

**Flammability:** 1

**Reactivity:** 0

## Section 16 - Other Information

**Disclaimer:** This material safety data sheet is provided as an information resource only.  
WEST BENGAL CHEMICAL INDUSTRIES LIMITED believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to verify its validity. The buyer assumes all responsibility of using and handling the product in accordance with federal, state, and local regulations.

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**Revision No.:**

03

