MATERIAL SAFETY DATA SHEET

Dibasic Calcium Phosphate, Dihydrate

1. **Product Identification**

   **Synonyms:** Calcium Phosphate sec  
   **CAS No.:** 7789-77-7  
   **Molecular Weight:** 172.09  
   **Chemical Formula:** CaHPO$_4$.2H$_2$O  
   **Product Codes:** D132

2. **Composition/Information on Ingredients**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibasic Calcium Phosphate, Dihydrate</td>
<td>7789-77-7</td>
<td>100</td>
<td>No</td>
</tr>
</tbody>
</table>

3. **Hazards Identification**

   **EMERGENCY OVERVIEW**

   As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

   Health Rating: 1 - Slight
   Flammability Rating: 0 - None
   Reactivity Rating: 0 - None
   Contact Rating: 1 - Slight
   Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
   Storage Color Code: Green (General Storage)

   **Potential Acute Health Effects:**

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

   **Inhalation:**
   Not expected to be a health hazard.

   **Ingestion:**
   Not expected to be a health hazard.

   **Skin Contact:**
   Not expected to be a health hazard from skin exposure.

   **Eye Contact:**
   No adverse effects expected.
Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available.
Repeated or prolonged exposure is not known to aggravate medical condition.
Aggravation of Pre-existing Conditions:
Not available.

4. First Aid Measures

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Skin Contact:
Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact:
Not available.

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

5. Fire Fighting Measures

Fire:
Non-flammable.

Explosion:
Not considered as explosion hazard.

Explosion Hazards in Presence of Various Substances:
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 available

Special Remarks on Explosion Hazards:
Not available.

Fire Extinguishing Media:
Not applicable.

Products of Combustion:
Not available.

Fire Hazards in Presence of Various Substances:
Not applicable.

Special Information on Fire Hazards:
Not available.

Fire Fighting Media and Instructions:
Not applicable.

Special Information:
Not applicable.
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 to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7. **Handling and Storage**

   **Precautions:**
   Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label.

   **Storage:**
   Keep container tightly closed. Keep container in a cool, well-ventilated area.

8. **Exposure Controls/Personal Protection**

   **Airborne Exposure Limits:**
   None established.

   **Ventilation System:**
   Not available.

   **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.

   **Personal Respirators:**
   Not available.

   **Skin Protection:**
   Wear protective gloves and clean body-covering clothing.

   **Eye Protection:**
   Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.
9. **Physical and Chemical Properties**

**Appearance:**
Solid. (Powdered solid).

**Odor:**
Odorless.

**Solubility:**
Insoluble in cold water, hot water, methanol, n-octanol. Solubility in water: 0.032g/100 ml water. Readily soluble in dilute hydrochloric and nitric acids. Insoluble in alcohol.

**Density:**
2.31 (Water = 1).

**pH:**
7.2 - 7.5 (25% slurry).

**% Volatiles by volume @ 21°C (70°F):**
0.

**Boiling Point:**
Not available.

**Melting Point:**
Decomposition temperature: 190°C (374°F).

**Vapor Density (Air=1):**
Not available.

**Vapor Pressure (mm Hg):**
Not available.

**Molecular Weight:**
172.09

**Evaporation Rate (BuAc=1):**
Not available.

10. **Stability and Reactivity**

**Stability:**
The product is stable.

**Conditions to Avoid:**
Not available.

**Conditions of Instability:**
Incompatible materials.

**Incompatibilities:**
Reactive with oxidizing agents.

**Hazardous Decomposition**
Not available.

**Special Remarks on Reactivity:**
Not available.

**Corrosivity:**
Not available.

**Hazardous Polymerization:**
Will not occur.
11. **Toxicological Information**

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

**Toxicity to Animals:**
Acute oral toxicity (LD50): >10000 mg/kg [Rat].
Acute dermal toxicity (LD50): >7940 mg/kg [Rabbit].

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

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

**Acute Potential Health Effects:**

**Skin:**
Causes skin irritation. May cause dermatitis.

**Eyes:**
Causes eye irritation.

**Inhalation:**
May cause respiratory tract irritation with coughing and sneezing.

**Ingestion:**
May cause mild gastrointestinal tract irritation (distress), flatulence, cramps, nausea, vomiting, constipation or diarrhea. No adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed. If ingested in large amounts, calcium salts may affect cardiovascular system (hypertension, atrial fibrillation, and vasodilation), behavior/nervous system (confusion, somnolence, coma, decreased tendon reflexes, depression, fatigue, hallucinations, lethargy, weakness, and stupor), kidneys (abnormal renal function, renal calculus) depending on the amount and duration of ingestion. May also cause acidosis or alkalosis hypercalcemia.

**Chronic Potential Health Effects:**

**Skin:** Repeated or prolonged contact may cause drying and chapping of the skin.
The toxicological properties of this substance have not been fully investigated.

12. **Ecological Information**

**Ecotoxicity:**
Ecotoxicity in water (LC50): >1000 mg/l 96 hours [Daphnia (daphnia)].

**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 product itself and its products of degradation are not toxic.

13. **Disposal Considerations**
Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal
regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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

14. **Transport Information**
   **DOT Classification:**
   Not a DOT controlled material.
   **Identification:**
   Not applicable.
   **Special Provisions for Transport:**
   Not available.
   **Protective Equipment:**
   Gloves (impervious). Synthetic apron. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

15. **Other Information**

   **NFPA Ratings:** Health: 1 Flammability: 0 Reactivity: 0

   **Label Hazard Warning:**
   As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

   **Label Precautions:**
   None.

   **Label First Aid:**
   Not applicable.

   **Product Use:**
   Laboratory Reagent.

**Revision Information:**
The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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