1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT DESCRIPTION: Calcium Stearate FP; Calcium Stearate FP FG Vegetable
PHYSICAL FORMS: Powder
CHEMICAL NAME: Calcium Stearate
GENERAL USE: Lubricant Chemical intermediate
MANUFACTURE: PMC Biogenix, Inc.
1231 Pope Street
Memphis, TN 38108 USA
SERVICE CONTACT NUMBER: 800-641-2152
EMERGENCY CONTACT: Environmental Health and Safety Department
EMERGENCY PHONE: 901-320-5820
24 HR. EMERGENCY TELEPHONE NUMBER: CHEMTREC (24 hours) 800-424-9300

2. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW
IMMEDIATE CONCERNS: Usual hazards associated with organic dusts. The possibility of explosions exists under dusty conditions. Avoid dusting when handling and avoid all possible sources of ignition (Spark and Flame). Molten product may cause thermal burns.

Potential Acute Health Effects

<table>
<thead>
<tr>
<th>Eye</th>
<th>May cause eye irritation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>May cause mild skin irritation.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Large oral doses may cause irritation to the gastrointestinal tract.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Symptoms from excessive inhalation of dust may include coughing and difficult breathing</td>
</tr>
<tr>
<td>Chronic</td>
<td>No adverse health effects expected.</td>
</tr>
</tbody>
</table>

GHS Label elements , including precautionary statements

Pictogram      None
Signal word    None
Hazard statement(s) None

Precautionary statement(s)
P261            Avoid breathing dust/fume/gas/mist/vapors/spray
P264            Wash skin thoroughly after handling
P280            Wear protective gloves/eye protection/face protection
P302 + P352     IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
SAFETY DATA SHEET

CALCIUM STEARATE FP

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT(S)</th>
<th>CAS</th>
<th>EINEC No.</th>
<th>% BY WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium stearate</td>
<td>1592-23-0</td>
<td>216-472-8</td>
<td>&gt; 95</td>
</tr>
<tr>
<td>Octadecanoic acid</td>
<td>57-11-4</td>
<td>200-313-4</td>
<td>&lt; 2</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>231-791-2</td>
<td>&lt; 3</td>
</tr>
</tbody>
</table>

No Hazardous Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>Country</th>
<th>Type</th>
<th>Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium stearate</td>
<td>USA</td>
<td>TWA, OSHA</td>
<td>15mg/m3</td>
<td>Respirable fraction TWA-PEL, OSHA</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Inhalation Remove to fresh air
Skin Contact Wash skin thoroughly with soap and water for at least 15 minutes. If redness or irritation occurs, seek medical attention.
Eye Contact Immediately flush eyes with water and continue washing for at least 15 minutes. If redness or irritation occurs, seek medical attention.
Indigestion No emergency care anticipated.
Notes to Physician Treat symptomatically and supportively

5. FIRE-FIGHTING MEASURES

Flash point: 176 °C (349 °F)
Autoignition temperature Not available
Extinguishing Media Dry chemical, water spray, CO2, foam
Fire Fighting Procedure: Do not direct a solid stream of water or foam into burning molten material; this may cause spattering and spread the fire.
Special protective equipment for fire fighting: Firefighters must be equipped to prevent breathing of vapors or products of combustion. Wear an approved self-contained breathing apparatus and protective clothing.
Hazardous combustion products: Carbon monoxide; Carbon dioxide

6. ACCIDENTAL RELEASE MEASURES

Environmental Precautions This product is insoluble in water and will float on the surface.
Methods for cleaning up Avoid dust formation. Avoid dispersion of dust. Sweep up and collect in a suitable container for disposal. Sweep up using non-sparking equipment. Observe government regulations.

7. HANDLING AND STORAGE
Handling  Avoid breathing dust. Avoid dispersion of dust to reduce fire and explosion potential

Storage  Normal precautions common to good safety practice should be followed in storage. Store at ambient temperature.

<table>
<thead>
<tr>
<th>Component</th>
<th>Country</th>
<th>Type</th>
<th>Value</th>
<th>Remark</th>
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<tbody>
<tr>
<td>Calcium stearate</td>
<td>USA</td>
<td>TWA, OSHA</td>
<td>15mg/m³</td>
<td>Respirable fraction TWA-PEL, OSHA</td>
</tr>
<tr>
<td>Octadecanoic acid</td>
<td>USA</td>
<td>PEL, OSHA</td>
<td>5 mg/m³</td>
<td>Respirable dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL, OSHA</td>
<td>15 mg/m³</td>
<td>Total dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA, ACGIH</td>
<td>10 mg/m³</td>
<td>Total dust for nuisance particulates</td>
</tr>
<tr>
<td>Particulates</td>
<td></td>
<td>TWA, OSHA</td>
<td>15.0 mg/m³</td>
<td>Total dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA, OSHA</td>
<td>5.0 mg/m³</td>
<td>Respirable Fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA - ACGIH</td>
<td>10.0 mg/m³</td>
<td>Total inhalable dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA - ACGIH</td>
<td>3.0 mg/m³</td>
<td>Respirable Fraction</td>
</tr>
</tbody>
</table>

No other exposure limits have been established. Consult local authorities for acceptable provincial values.

**Engineering Measures**
Use local ventilation or engineering controls as needed to maintain personnel exposure below TLV.

**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practices.

**Personal Protective Equipment**
- **Respiratory Protection**
  Use NIOSH/MSMA certified dusk mask and/or respirator where appropriate
- **Hand Protection**
  Neoprene
- **Eye Protection**
  Monogoggles.
- **Skin Protection**
  Rubber or plastic apron

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Powder</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight Fatty</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Decomposes</td>
</tr>
<tr>
<td>Melting Point</td>
<td>160 °C (320 °F)</td>
</tr>
<tr>
<td>Solidification</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
</tbody>
</table>
Vapor Density: Not available
Specific gravity (H2O=1): Not available
Solubility in water: Insoluble
Solubility in organic solvents: No data available
Partitioning coefficient: Not available
Autoignition temperature: Not available
Upper explosion limits: Not available
Lower explosion limits: Not available
Decomposition temperature: Not available
Flash point: 176 °C (349 °F) Method: Cleveland open cup ASTM D 92
Percent volatiles: <2 %(m)

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions
Conditions to avoid: None Known
Incompatible materials: Strong oxidizing agents
Hazardous decombustion products: Carbon monoxide; Carbon dioxide
Hazardous polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

ORAL LD₅₀: No Data Available
INHALATION LC₅₀: No Data Available
DERMAL LD₅₀: No Data Available

CARCINOGENICITY

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Potential Acute Health Effects

Eye: May cause eye irritation
Skin: May cause mild skin irritation.
Ingestion: Large oral doses may cause irritation to the gastrointestinal tract.
Inhalation: Symptoms from excessive inhalation of dust may include coughing and difficult breathing
Chronic: No adverse health effects expected.
SAFETY DATA SHEET

CALCIUM STEARATE FP

REPRODUCTIVE TOXICITY: No data available
TERATOGENICITY: No data available
REPRODUCTIVE EFFECTS: No data available
MUTAGENICITY: No data available

Specific target organ toxicity - single exposure (Globally Harmonized System): No Data Available
Specific target organ toxicity - repeated exposure (Globally Harmonized System): No Data Available

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available
Bioaccumulative Potential: Bioaccumulative unlikely.
Comments: Not expected to be acutely toxic to aquatic organisms.

13. DISPOSAL CONSIDERATION

General: It is our opinion this product is not a RCRA hazardous waste. It is the generator's responsibility to make their own determination as to the RCRA status of waste they generate. We have not performed a Toxicity Characteristic Leachate Procedure (TCLP) on this product. Incinerate in a furnace where permitted under appropriate Federal, State, and local regulations.

Non-cleaned packages: Subject completely emptied paper bags to paper recycling

14. TRANSPORTATION INFORMATION

DOT: This product is not regulated by DOT
Canada Transportation of Dangerous Goods: This product is not regulated by TDG
IMDG Classification: This product is not regulated by IMDG
ICAO Classification: This product is not regulated by ICAO

15. REGULATORY INFORMATION

UNITED STATES
SARA Title III (Superfund Amendments and Reauthorization Act)
313 Reportable Ingredients: None
302/304 Emergency Planning
Emergency Plan: None
CERCLA (Comprehensive Response, Compensation and Liability Act)
CERCLA RQ: None
EPA Hazard Categories
SARA 311/312: None
TSCA (Toxic Substance Control Act)
SAFETY DATA SHEET

CALCIUM STEARATE FP

Date Issued: 02/01/2013
MSDS No.: 1003031

TSCA Status: This product is on the TSCA inventory

New Jersey Worker and Community Right-To-Know Act (Labeling Requirements)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>C.A.S. Number</th>
<th>New Jersey TS Number</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1592-23-0</td>
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</table>

California Proposition 65: Does not contain any contaminate or byproducts known by the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 Safe Drinking Water and Toxic Enforcement Act.

CANADA

WHMIS CLASSIFICATION: Not Controlled

CPR Compliance: This Product has been classified with the hazard criteria of the CPR, and the MSDS contains all the information required by CPR

Domestic Substance List (Inventory): This product is on the DSL

Chemical Inventory

Canada: This product is on the DSL.
Europe: This product is on the EINECS inventory.
United States: This product is on the TSCA inventory.
Australia: This product is on the AICS inventory.
China: This product is on the IECSC Inventory.
Japan: This product is on the ENCS inventory.
Korea: This product is listed on the Existing Chemicals List (ECL).
Philippines: This product is on the Philippines Inventory of Chemicals and Chemical Substances (PICCS).

16. OTHER INFORMATION

Revision: 3
Supersedes Date: 04/01/2011
Approved By: Safety Health & Environmental Department
Prepared By: Quality Assurance, Product Safety

HMIS Rating

<table>
<thead>
<tr>
<th>HEALTH:</th>
<th>FLAMMABILITY:</th>
<th>PHYSICAL HAZARD:</th>
<th>PERSONAL PROTECTION:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Manufacturer Disclaimer: The opinions expressed herein are those of qualified experts within PMC Biogenix Inc.. We believe that the information contained herein is current as of the date of this safety data sheet. Since the use of this information and of these opinions and the conditions of use of this product are not within the control of PMC Biogenix Inc., it is the user's obligation to determine the conditions of safe use of the products.