SAFETY DATA SHEET
S-50

Section 1: Identification of the Substance/Mixture and of the company/Undertaking

1.1. Product Identifier

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>S-50</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACH Registered Name:</td>
<td>S-50</td>
</tr>
<tr>
<td>REACH Registered Number:</td>
<td>Exemption under annex V</td>
</tr>
<tr>
<td>CAS #:</td>
<td>527-07-1, 7732-18-5</td>
</tr>
<tr>
<td>EC #:</td>
<td>None</td>
</tr>
<tr>
<td>Product Code:</td>
<td>71510, 71511, 71545</td>
</tr>
<tr>
<td>Synonyms:</td>
<td>2, 3, 4, 5, 6-Pentahydroxycaproic acid, hexanoate,</td>
</tr>
<tr>
<td>INCI Name:</td>
<td>S-50</td>
</tr>
</tbody>
</table>

1.2. Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Chelating agent in foods, dressings, electroplating, concrete mixtures

1.3. Details of the Supplier of the Safety Data Sheet

Company : PMP Fermentation Products, Inc.
900 NE Adams Street
Peoria, Illinois 61603, USA

Telephone: 1-309-637-0400 8 am – 4 pm CST M-F
Fax Number : 1-309-637-9302
E mail: sales@pmpinc.com

1.4. Emergency Contact

Chemetrec: 1-(800) 424-9300

SECTION 2: Hazards Identification

2.1. Classification of the Substance or Mixture

Classification under CLP: This product has no CLP classification

<table>
<thead>
<tr>
<th>GHS Classification</th>
<th>Health</th>
<th>Environmental</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Classification</td>
<td>No Classification</td>
<td>No Classification</td>
<td>No Classification</td>
</tr>
</tbody>
</table>
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2.2. Label Elements

Label Elements This product has no label elements under CLP or GHS

2.3. Other Hazards

PBT: This product is not identified as a PBT substance

Section 3: Composition/Information on Ingredients

3.1. Substances

Chemical Identity: Liquid Gluconate 60

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Gluconate</td>
<td>No classification</td>
<td>22 - 30%</td>
</tr>
<tr>
<td>No. CAS</td>
<td>527-07-1</td>
<td></td>
</tr>
<tr>
<td>No CE</td>
<td>208-407-7</td>
<td></td>
</tr>
<tr>
<td>Glucose</td>
<td>No classification</td>
<td>20%</td>
</tr>
<tr>
<td>No CAS</td>
<td>50-99-7</td>
<td></td>
</tr>
<tr>
<td>No CE</td>
<td>200-075-1</td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>No classification</td>
<td>50 - 58%</td>
</tr>
<tr>
<td>No CAS</td>
<td>7732-18-5</td>
<td></td>
</tr>
<tr>
<td>No CE</td>
<td>231-791-2</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4: First Aid Measures

4.1. Description of First-Aid Measures

Skin: Wash with soap and plenty of water.

Eyes : Wash thoroughly with plenty of water for at least 15 minutes, and seek medical advice.

Ingestion: Get medical attention if adverse effects occur.

Inhalation If adverse effects occur, get medical attention
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4.2. Most Important Symptoms and Effects, both Acute and Delayed

Skin: Can cause irritation and redness to susceptible individuals.

Eyes: May cause mild irritation. The eyes may water profusely.

Ingestion: Can cause irritation if large amounts are swallowed. You may experience nausea and stomach pain. There may be vomiting and diarrhea.

Inhalation: May cause respiratory irritation in susceptible individuals. Can cause shortness of breath, sneezing and coughing.

Delayed/Immediate Effects: Long-term inhalation of excessive dust may cause delayed lung injury.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Need

Immediate/Special Treatment: Eye wash stations should be available

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

Extinguishing media: water, carbon dioxide, foam, halogen

5.2. Special Hazards Arising from the Substance or Mixture

Exposure hazards: In combustion emits toxic fumes of carbon monoxide carbon dioxide.

5.3. Advice for Fire Fighters

Advice for firefighters: Wear self-contained breathing apparatus. Wear suitable protective clothing to prevent contact with skin and eyes.

5.4 Other Information

None
SECTION 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Personal precautions: Use appropriate protective clothing. See section 8.

6.2. Environmental Precautions

Environmental precautions: Do not discharge into drains or rivers.

6.3. Methods and Material for Containment and Cleaning Up

Clean-Up Procedures: Collect as much as possible for use or disposal in a properly labeled container. Flush remainder into normal drainage with copious amounts of water.

6.4. Reference to Other Sections

Reference to other sections: see sections 8 and 13

Section 7: Handling and Storage

7.1. Precautions for Safe Handling

Handling requirements: Use suitable protective clothing. Make sure there is adequate ventilation in the area.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Storage conditions: Store in a cool, well-ventilated area. Keep away from direct sunlight.

Packaging: plastic or lined poly drums.

7.3. Specific End Use(s)

No special requirement
### SECTION 8: Exposure Controls/Personal Protection

#### 8.1. Control Parameters

None established:

#### 8.2. Exposure Controls

- **Engineering measures:** Provide sufficient ventilation of the area.
- **Respiratory protection:** Respirator with particle filter
- **Hand Protection:** Protective gloves
- **Eye Protection:** Safety goggles, provide eye wash stations
- **Skin Protection:** Protective clothing. Provide safety shower
- **Environmental:** No special requirement

### Section 9: Physical and Chemical Properties

#### 9.1. Information on Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Brown to Dark Brown</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>pH</td>
<td>5 - 6</td>
</tr>
<tr>
<td>Melting point</td>
<td>Data not available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>&gt;100 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>Data not available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Flammability</td>
<td>Data not available</td>
</tr>
<tr>
<td>Upper Explosion Limit</td>
<td>Data not available</td>
</tr>
<tr>
<td>Lower Explosion Limit</td>
<td>Data not available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Data not available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Data not available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.2 – 1.3</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Complete</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Data not available</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>13.1 °F</td>
</tr>
<tr>
<td>Viscosity</td>
<td>32 Cp at 25 °C</td>
</tr>
<tr>
<td>Oxidizing substances</td>
<td>Non-oxidizing</td>
</tr>
<tr>
<td>Peso molecular</td>
<td>Data not available</td>
</tr>
</tbody>
</table>
9.2. Other Information

Other Information: Not applicable

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity: Stable under recommended storage and transport conditions

10.2. Chemical Stability

Chemical Stability: Stable under normal conditions

10.3. Possibility of Hazardous Reactions

Hazardous Reactions: Hazardous reactions will not occur under normal conditions

10.4. Conditions to Avoid

Conditions to Avoid: Direct sunlight

10.5. Incompatible Materials

Materials to Avoid: Strong Oxidizers

10.6. Hazardous Decomposition Products

Hazardous Decomposition Products: In combustion, emit toxic fumes of carbon dioxide/monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Toxicity Values:

<table>
<thead>
<tr>
<th>Route</th>
<th>Species</th>
<th>Test</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>LD₅₀</td>
<td>&gt;2000</td>
<td>mg/kg</td>
</tr>
<tr>
<td>Intravenous</td>
<td>Rabbit</td>
<td>LD₅₀</td>
<td>7630</td>
<td>mg/kg</td>
</tr>
</tbody>
</table>
Symptoms/Routes of Exposure

Contact on Skin:
May cause irritation and redness for susceptible individuals.

Eyes:
May cause mild irritation. Eyes may water profusely.

Ingestion
May cause irritation if large amounts are swallowed. Nausea and stomach pain may occur. There may be vomiting and diarrhea.

Inhalation
May cause respiratory irritation in susceptible individuals. May cause shortness of breath, sneezing and coughing.

Delayed/Immediate effects:
Long-term inhalation of excessive dust may cause delayed lung injury.

Carcinogenicity: Not applicable
Mutagenicity: Not applicable
Teratogenicity: Not applicable
Reproductive Toxicity: Not applicable

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Values:

<table>
<thead>
<tr>
<th>Species</th>
<th>Test</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish</td>
<td>96H LC50</td>
<td>&gt; 1000.0</td>
<td>mg/L</td>
</tr>
<tr>
<td>Daphnid</td>
<td>48H LC50</td>
<td>&gt; 1000.0</td>
<td>mg/L</td>
</tr>
<tr>
<td>Green Algal</td>
<td>96H EC50</td>
<td>&gt; 1000.0</td>
<td>mg/L</td>
</tr>
<tr>
<td>Fish</td>
<td>ChV*</td>
<td>&gt; 100.0</td>
<td>mg/L</td>
</tr>
<tr>
<td>Daphnid</td>
<td>ChV</td>
<td>&gt; 100.0</td>
<td>mg/L</td>
</tr>
<tr>
<td>Algal</td>
<td>ChV</td>
<td>&gt; 100.0</td>
<td>mg/L</td>
</tr>
<tr>
<td>Bacteria</td>
<td>EC50</td>
<td>&gt; 5000.0</td>
<td>mg/L</td>
</tr>
</tbody>
</table>

*Chronic Value

12.2. Persistence and Degradability

Persistence and Degradability: Readily and rapidly biodegradable
12.3. Bioaccumulative Potential

Bioaccumulative Potential: Product does not bioaccumulate

12.4. Mobility in Soil

Mobility: Soluble in water

12.5. Results of PBT and vPvB Assessment

PBT Identification: This substance is not identified as a PBT substance.

12.6. Other Adverse Effects

Other Adverse Effects: Not expected to cause significant environmental impact.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

Disposal Operations: In accordance with applicable regulations. Normally can be flushed down sewers.

Recovery Operations: No information available

Disposal of Packaging: Contaminated containers must not be treated as household waste. Where practical, containers and packaging should be recycled by a licensed contractor.

SECTION 14: TRANSPORT INFORMATION

Transport Class: This product does not require a classification for transport.
SECTION 15: REGULATORY INFORMATION

15.1. Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture

Specific Regulations


Directive 96/82/EC does not apply

Europe Risk Phrases not classified in Europe

Europe Safety Phrases not classified in Europe

15.2. Chemical Safety Assessment

Chemical Safety Assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier

SECTION 16: OTHER INFORMATION

Other Information:

This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010

There are no exposure levels set for the specific product.

Legal Disclaimer

The information herein has been compiled from sources believed to be reliable and is accurate to the best of our knowledge. However, PMP Fermentation Products, Inc. cannot give any guarantees regarding information from other sources, and expressly does not make any warranties, nor assumes any liability, for its use.

Date of Revision 02/13/15