1. IDENTIFICATION

1.1 Product Identification
- Product Name: Dipotassium succinate
- Chemical name: 
- CAS No.: 676-47-1
- EC No.: 211-628-1

1.2 Relevant identified uses of the substance or mixture and uses advised against
- Relevant identified uses: Coolant in wine making
- Uses advised against: Not approved for use as a pharmaceutical or medical product.

1.3 Details of the supplier
- Company: BIOAMBER Inc.
- Manufactured at: Route de Pomacle, 51110 BAZANCOURT, FRANCE
- Telephone: +33 (0)6 75 72 88 87 or +1 519 344 0065 #110
- E-mail Address: Sarnia.CustomerService@bio-amber.com

1.4. Emergency phone number
- Phone: + 33 (0)1 45 42 59 59 (ORFILA)
- For Hazardous Materials [or Dangerous Goods] Incidents
- Spill, Leak, Fire, Exposure, or Accident
- Call CHEMTREC Day or Night
- Within USA and Canada: 1-800-424-9300
- Outside USA and Canada: +1 703-527-3887 (collect calls accepted)
- France: + 33 (9) 75 18 14 07
- Germany: 0800 – 181 – 7059
- Holland: + 31 (8) 58 88 05 96
- Belgium: + 32 (2) 80 83 237
- Poland: + 48 (2) 23 98 80 29
- Japan (Tokyo): + 81 (3) 45 20 96 37
- China: 4001 – 204937
- South Korea: 00 – 3087 – 13 – 2549
- Taiwan: 00801 – 14 – 8954
- Malaysia: 1 – 800 – 815 - 308

2. HAZARD IDENTIFICATION

2.1. OSHA Classification: Classified as non-hazardous according to 29 CFR § 1910.1200

2.2. WHMIS Classification: Not classified according to WHMIS

2.3. GHS Classification
2.4. GHS Label elements, including precautionary statements: Not classified according to GHS

2.5. HMIS Classification

Health hazard: 1  
Flammability: 1  
Physical hazards: 1

2.6. NFPA Rating

Health hazard: 1  
Fire: 1  
Reactivity Hazard: 1

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>% (weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipotassium succinate</td>
<td>676-47-1</td>
<td>211-628-1</td>
<td>100</td>
</tr>
<tr>
<td>Succinic acid, dipotassium salt</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 First aid description

General instructions: Consult a doctor. Show this safety data sheet to the doctor to help him/her provide the right assistance. Move away from the danger zone.

If inhaled: If inhaled, get the person in question into fresh air. If they are no longer breathing, perform artificial respiration. Consult a doctor.

In the event of skin contact: Take off contaminated clothing and shoes immediately. Rinse with soap and plenty of water. Consult a doctor. Wash contaminated clothing before re-use.

In the event of contact with the eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a physician.

If ingested: Never administer anything by mouth to an unconscious person. Rinse the mouth with water. Consult a doctor.

4.2 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. FIREFIGHTING MEASURES

Conditions of flammability: Not flammable or combustible.
Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for fire-fighters: Wear self contained breathing apparatus for firefighting if necessary.
Hazardous combustion products: Hazardous decomposition products formed under fire conditions - Carbon oxides, Sodium oxides.
### 6. ACCIDENTAL RELEASE MEASURES

**6.1. Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Prevent further leakage or spillage if safe to do so. Avoid producing dust. Avoid breathing vapors, mist or gas. Keep away from incompatible products.

Advice for emergency responders: Evacuate personnel to safe areas. Keep people away from and upwind of spill. Use personal protection equipment. Ensure that ventilation is adequate.

**6.2. Environmental protection precautions**

Follow all regulations regarding releases into the environment. Do not let the product get into the drains. Follow all regulations regarding releases into sanitary sewer systems. If the product contaminates rivers and lakes or drains, inform respective authorities.

**6.3. Methods and materials for containment and cleaning**

Gather and dispose of without creating dust. Store in closed containers that are appropriate for disposal. Treat recovered material as described in the section "Disposal considerations".

### 7. HANDLING AND STORAGE

**7.1. Precautions to be taken for safe handling**

Avoid contact with skin and eyes. Avoid producing dust or aerosols. Provide appropriate ventilation in locations where dust is generated. The usual preventive measures for protecting against fire. Use only equipment and materials which are compatible with the product. Do not store for long periods at elevated temperatures.

**7.2. Safe storage conditions, including any incompatibilities**

Use tightly sealed and properly labeled containers and store them in a dry and well-ventilated space.

Suggested packing material: blow-lined fiber drums, steel, stainless steel, HD polyethylene.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1. Control parameters**

<table>
<thead>
<tr>
<th>Exposure limits</th>
<th>OSHA: Not established</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACGIH: Not established</td>
</tr>
</tbody>
</table>

**8.2. Personal protection**

Appropriate engineering measures

Use mechanical exhaust or laboratory fumehood to avoid exposure. Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
### Personal protection equipment

**Eye/face protection:** Wear eye protection/face protection. Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

**Skin/hand protection:** Wear gloves when handling. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Suitable material: Butyl rubber, nitrile, natural rubber, latex, viton, Silver Shield/4H. Unsuitable material: Leather. Select bodily protection measures depending on the quantity and concentration of the hazardous substance in the workplace ex. Chemical resistant apron.

**Respiratory protection:** If the risk assessment shows that gas masks with air purifying filters are appropriate, use a type N95 mask (US) or a type P1 (EN 143) respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use masks that have been tested and approved to the appropriate standards such as NIOSH (US) or CEN (EU).

**Hygiene measures:** Eye wash bottles or eye wash stations in compliance with applicable standards. Take off contaminated clothing and shoes immediately. Handle in accordance with industrial good hygiene and safety practices. Wash hands before breaks and at the end of the day.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Crystalline solid</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild vinegar</td>
</tr>
<tr>
<td>pH</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Could not be determined (decomposition began at 369.3 °C ) (method OECD 102)</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>Could not be determined (decomposition began at 398 °C ) (method OECD 103)</td>
</tr>
<tr>
<td>Flash point</td>
<td>Closed cup test could not be determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flammability</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt;369°C</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Less than the minimum range of experimental method (OECD 104)</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.73 g/ml (OECD 109)</td>
</tr>
<tr>
<td>Surface Tension</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Solubility</td>
<td>88.1 g/L (OECD 105)</td>
</tr>
<tr>
<td>Partition coefficient: (n-octanol/water)</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable for a solid</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No Data Available</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

10.1. Chemical stability
Stable under the recommended storage conditions.

10.2. Potential for dangerous reactions
Not available

10.3. Conditions to be avoided
Excessive heat, contact with incompatible materials.

10.4. Incompatible materials
Strong oxidising agents, strong acids

10.5. Dangerous decomposition products
No known hazardous decomposition products at room temperature.

11. TOXICOLOGICAL INFORMATION

11.1. Information about toxicological effects
Routes of Entry
Inhalation, ingestion, and dermal and eye contact.

Acute toxicity
Oral LD$_{50}$ Female rat: >2000 mg/kg (method OCSPP No.870.1100 & OECD 425)
Inhalation LC$_{50}$: no data available
Dermal LD$_{50}$ Male/Female Rats: >2020 mg/kg (method OCSPP No.870.1200 & OECD 402)

Skin corrosion/skin irritation
no data available

Severe eye injuries/ eye irritation
no data available

Respiratory or cutaneous sensitisation
no data available

Mutagenicity
Non-mutagenic (Bacterial Reverse Mutation Assay, Ames methodology & OECD 471)

Carcinogenicity

Reproductive toxicity
No data available.

Teratogenicity/Embryotoxicity
No data available.

Specific toxicity for various target organs - single exposure (GHS)
Inhalation. May cause respiratory irritation.

Specific toxicity for various target organs - repeated exposure (GHS)
No data available

Hazards due to aspiration
No data available

Toxicologically Synergistic Materials
No data available

11.2. Potential health effects
Inhalation
May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion
May be harmful if swallowed.

Cutaneous
May be harmful if absorbed through skin. Causes skin irritation.

Eye
Causes eye irritation.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Acute toxicity
- To fish: No Data Available

Chronic toxicity
- To fish: No Data Available
- To daphnia and other aquatic invertebrates: No Data Available
- To algae: No Data Available

12.2 Persistence and degradability

This substance has been determined to be Readily Biodegradable (method OPPTS 835.3110 & OECD 301B)

Abiotic degradation
- Air: No data available
- Water: No data available
- Soil: No data available

12.3 Bioaccumulative potential
No Data Available

12.4. Mobility
- Water, Soil/sediments: No Data Available

12.5. PBT and vPvB assessment: No Data Available

12.6. Other adverse effects: No Data Available

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods: Dispose of by incineration or according to local and national regulations.

13.2. Contaminated packaging: Where possible recycling is preferred to disposal or incineration. Clean container with water. Dispose of unused product in accordance with local and national regulations.
14. TRANSPORT INFORMATION

14.1. International transport regulations: UN Number: Not regulated; non-hazardous for transport

14.2 UN proper shipping name: Not Applicable

14.3 Transport hazard class(es): No Data Available

14.4 Packing group: No Data Available

14.5 Environmental hazards: No Data Available

14.6 Special precautions for user: No Data Available

14.7 Transport in bulk accordance with Annex II of MARPOL 73/78 and the IBC Code: No Data Available

15. REGULATORY INFORMATION

Canada:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

USA:
This product has been classified in accordance with the 2012 hazard criteria of the Occupational Safety and Health Administration’s (OSHA) Hazard Communication Standard (HCS) and the SDS contains all the information required by the 29 CFR § 1910.1200.

--Global Chemical Inventories—
USA
This substance is specified on the U.S. Toxic Substances Control Act (TSCA) Inventory.

Other TSCA Reg.
None known.

EU
This substance is specified with REACH per the EC Seventh Amendment Directive 92/33EEC.

Japan
This substance is specified with the Chemical Substances Control Law (CSCL) of Japan.

Australia
This substance is specified on the Australian Inventory of Chemical Substances (AICS).

Canada
This substance is NOT specified on the Domestic Substances List (DSL) but is on the Non-Domestic Substances List (NDSL).

Korea
This substance is NOT specified on the Korea Existing Chemical Inventory (KECI).

--Other U.S. Federal Regulations—

This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances List.

SARA Section 313
This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substances) of any chemical substance listed under SARA 313

SARA Classifications

<table>
<thead>
<tr>
<th>Hazard Type</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Chronic Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactivity Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

CERCLA Hazardous Substances
None known

FDA Approval
No Data Available

California Prop. 65
This compound is not known to contain any chemicals on the Proposition 65 list.
16. OTHER INFORMATION

16.1. Information about the revision
   SDS 2.0 July 24 2012. Addition of data from toxicological and physic-chemistry studies.

16.2. Meanings of the abbreviations and acronyms used
   ACGIH: American conference of Governmental Industrial Hygienists
   CAS: Chemical Abstract Service
   CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
   CFR: Code of Federal Regulations
   EC: European Commission
   EC50: Effective Concentration – 50%
   GHS: Globally Harmonized System
   HD: High Density
   HMIS: Hazardous Material Information System
   IBC: International Bulk Chemical
   LDI50: Lethal Dose – 50%
   MARPOL: International Convention for the Prevention of Pollution From Ships
   MSDS: Material Safety Data Sheet
   NOEC: No Observed Effect Concentration
   OCSPP: Office of Chemical Safety and Pollution Prevention
   OECD: Organisation for Economic Co-operation and Development
   OSHA: Occupational Safety and Health Administration
   OPPTS: Office of Prevention, Pesticides, and Toxic Substances
   PBT: Persistent Bioaccumulative Toxic Substances
   Prop.: Proposition
   REACH: Registration, Evaluation, Authorisation and Restriction of Chemical Substances
   SARA: Superfund Amendments and Reauthorization Act
   SDS: Safety Data Sheet
   UN number: United Nations number
   vPvB: very Persistent and very Bioaccumulative
   WHMIS: Workplace Hazardous Material Information System

DISCLAIMER:
BIOAMBER urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate. However, no warranty or representation of any kind, express or implied, is given, including any warranty of merchantability or fitness for a particular purpose nor shall BIOAMBER indemnify any buyer against or be liable for any third party claims with respect to such information or any use thereof. Regulatory requirements are subject to change and may differ between various locations. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under control of the manufacturer, it is the buyer’s/user’s duty to determine the conditions necessary for the safe use of this product.