1. IDENTIFICATION

1.1. Product identifier

Product name: Disodium Succinate  
Chemical name: Disodium succinate anhydrous  
CAS number: 150-90-3  
EC number: 205-778-7  
Index number: Not applicable  
Registration number: Not applicable

1.2. Relevant identified uses of the substance and uses advised against

Relevant identified uses: Flavor enhancer in food  
Uses advised against: Not available

1.3. Details of the supplier of the safety data sheet

Name: BIOAMBER SARNIA Inc.  
Address: 1201 Vidal St. South  
Sarnia ON N7T 7M2 CANADA  
Phone: +1 519 344 0065 #110  
Contact email: Sarnia.CustomerService@bioamber.com

1.4. Emergency phone number

Phone: 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

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or the mixture

2.1.1. Classification of the substance according to DSD (67/548/EC)  
Xi; Irritant  
R36/37/38 Irritating to eyes, respiratory system and skin

2.1.2. Classification of the substance according to CLP (1272/2008/EC)  
Skin Irrit. 2  
H315 Causes skin irritation  
Eye Irrit. 2  
H319 Causes serious eye irritation  
STOT SE 3  
H335 May cause respiratory irritation
2.2. Label elements according to the regulation (EC) n° 1272/2008 (CLP)

Hazard pictograms

Signal word

Warning

Hazard statements
H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation

Precautionary statements - Prevention
P280 Wear protective gloves/protective clothing/eye protection/face protection
P261 Avoid breathing dust/fume/gas/mist/vapors/spray

Precautionary Statement - Response
P362 Take off contaminated clothing and wash before reuse
P312 Call a POISON CENTER or doctor/physician if you feel unwell

Precautionary Statement - Storage
P403 + P233 Store in a well ventilated place. Keep container tightly closed

Precautionary Statement - Disposal
P501 Dispose of container as conventional waste in accordance with all national regulations

2.3. Other hazards

Routes of entry
Inhalation, ingestion, and dermal and eye contact

Potential health effects
Inhalation: May be harmful if inhaled. Causes respiratory tract irritation
Skin: May be harmful if absorbed through skin. Causes skin irritation
Eyes: Causes eye irritation
Ingestion: May be harmful if swallowed

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Nr.</th>
<th>EC Nr.</th>
<th>Index Nr.</th>
<th>Concentration [%]</th>
<th>Classification DSD/CLP</th>
<th>Specific concentration limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium succinate anhydrous</td>
<td>150-90-3</td>
<td>205-778-7</td>
<td>-</td>
<td>98 - 100</td>
<td>Xi; R36/37/38</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

4.1. Description of first aid measures

General descriptions
Call a POISON CENTER or doctor/physician if you feel unwell. Show this safety data sheet to the doctor to help him provide the right assistance. Move away from the danger zone.

After inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, perform artificial respiration. Consult a doctor.

After skin contact
Wash with soap and plenty of water. If skin irritation occurs: Get medical advice/attention.

After eye contact
Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. If eye irritation persists get medical advice/attention.

After ingestion
Never administer anything by mouth to an unconscious person. Rinse the mouth with water. Consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed
Not determined

4.3. Indication of immediate medical attention and special treatment
Treat symptomatically

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Appropriate: water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Inappropriate: not determined

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition products formed under fire conditions: carbon oxides, sodium oxides

5.3. Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES
6.1. Personal precautions, protective equipment and emergency procedures

6.2. Environmental precautions
Do not let the product get into the drains.

6.3. Methods and material for containment and cleaning up
Gather and dispose of without creating dust. Store in closed containers that are appropriate for disposal.

6.4. Reference to other sections
Refer to sections 7, 8 and 13.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling
Avoid contact with skin and eyes. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Provide appropriate ventilation in locations where dust is generated. Apply the usual preventive measures for protecting against fire.

7.2. Conditions for safe storage, including any incompatibilities
Use tightly sealed containers and store them in a dry and well-ventilated space. Store locked up.

7.3. Specific end use(s)
Not available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters
Contains no substances with occupational exposure limit values.

8.2. Exposure controls
Appropriate engineering controls
Use mechanical exhaust or laboratory fume hood to avoid exposure. Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment
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).

Hand protection: Wear gloves when handling. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product.
Select bodily protection measures depending on the quantity and concentration of the hazardous substance in the workplace.

Eye 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).

Hygiene measures: Handle in accordance with industrial good hygiene and safety practices. Wash hands before breaks, after handling and at the end of the day.

Environmental exposure controls Not available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information of basic physical and chemical properties

- **Physical state** Solid
- **Colour** White
- **Odour** Not available
- **Odour threshold** Not applicable
- **pH** Not applicable
- **Melting point / range** Not available
- **Boiling point / range** Not available
- **Flashpoint** Not available
- **Evaporation rate** Not available
- **Auto-ignition temperature** Not available
- **Flammability** Not flammable
- **Upper/Lower flammability or explosive limits** Not available
- **Vapour pressure** Not available
- **Vapor density** Not available
- **Relative density** Not available
- **Water solubility** Not available
9.2. Other information
None

10. STABILITY AND REACTIVITY

10.1. Reactivity
Not available

10.2. Chemical stability
Stable under the recommended storage conditions.

10.3. Possibility of hazardous reactions
Not available

10.4. Conditions to avoid
Not available

10.5. Incompatible materials
Strong oxidising agents, strong acids

10.6. Hazardous decomposition materials
Hazardous decomposition products formed under fire conditions: carbon oxides, sodium oxides.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
- Acute Toxicity
  Oral LD₅₀: not available
  Dermal LD₅₀: not available
  Inhalation LC₅₀: not available
  Intravenous (mouse) LD₅₀: 4 500 mg/kg
- Skin corrosion/irritation
  Irritating to skin
- Serious eye damage/irritation
  Irritating to eyes

- Respiratory or skin sensitisation
  Not available

- Germ cell mutagenicity
  Not available

- Carcinogenicity
  IARC: No component of the 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 the product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH

- Reproductive toxicity
  Not available

- STOT-single exposure
  Irritating to respiratory tract

- STOT-repeated exposure
  Not available

- Aspiration hazard
  Not available

11.2. Other information
  None

12. ECOLOGICAL INFORMATION

12.1. Toxicity
  Not available

12.2. Persistence and degradability
  Not available

12.3. Bioaccumulation potential
  Not available

12.4. Mobility in the soil
  Not available

12.5. Results of PBT and vPvB assessment
  Not a PBT or vPvB

12.6. Other adverse effects
  Not available

12.7. Additional information
  Not available

13. DISPOSAL CONSIDERATIONS
13.1. Waste treatment methods

*Product:* Respect the regulations in force. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact an accredited service professional for disposal of this product.

*Contaminated packaging:* dispose of with unused product

13.2. Waste code numbers / Waste identification

13.2.1. Waste code numbers product Not available

13.2.2 Waste identification of uncleaned packaging Not available

14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>Overland transport (ADR/RID)</th>
<th>River transport (ADN)</th>
<th>Sea transport (IMDG)</th>
<th>Air transport (ICAO-TI / IATA-DGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1. UN Number</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>14.2. UN proper shipping name</td>
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<td></td>
</tr>
<tr>
<td>14.3. Transport hazard classes</td>
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<td>14.4. Packing group</td>
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<tr>
<td>14.5. Environmental hazards</td>
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<td>14.6. Classification</td>
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<td>14.7. Classification code</td>
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<tr>
<td>14.8. Danger sheet</td>
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<tr>
<td>14.9. Limited amount (LQ)</td>
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<tr>
<td>14.10. Additional information</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14.11. Special precautions for user

Not available
14.12. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not available

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

**U.S. Regulations:**
OSHA Hazards: Irritant

**HMIS Classification:**
Health hazard: 2
Flammability: 0
Physical hazards: 0

**SARA 302 Components:**
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components:**
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards:** Acute Health Hazard

**Massachusetts Right To Know Components:** No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components:**
Disodium succinate CAS-No.150-90-3 Revision Date

**New Jersey Right To Know Components:**
Disodium succinate CAS-No.150-90-3 Revision Date

**California Prop. 65 Components:**
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**Canadian Regulations:**
WHMIS Classification:
D2B Toxic Material Causing Other Toxic Effects
Moderate skin irritant
Moderate respiratory irritant
Moderate eye irritant

15.2. Chemical safety assessment
A chemical safety report was not assessed for this substance by the supplier

16. OTHER INFORMATION

16.1. Information on the SDS
Creation of the SDS on August 18 2015 by BioAmber Sarnia Inc..

16.2. Abbreviations and acronyms
16.3. Key literature references and sources for data
Not available

16.4. Classification of mixtures und applied evaluation method
Not applicable

16.5. Wording of the R- and H- phrases (which are not written in full under section 2 to 15)

Risk phrases: -

H statements: -

16.6. Training advice
Unavailable

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific
product features and shall not establish a legally valid contractual relationship. By using suitable industrial safety precautions, it is paramount to make sure that the relevant exposition measures at the work place are adhered to, and negative health effects are avoided.