1. IDENTIFICATION

1.1 Product identification

Product name	Disodium Succinate
Chemical name	Sodium succinate anhydrous
CAS	150-90-3
EC number	205-778-7

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

Name	BIOAMBER Inc.
Address	3850 Annapolis Lane North Plymouth, MN 55447, USA
Phone	+1 519 344 0065 #110
Contact email	Sarnia.CustomerService@bio-amber.com

1.4 Emergency phone number

For Hazardous Materials 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)

2. HAZARD IDENTIFICATION

2.1 OSHA Hazards : Irritant

2.2 WHMIS Classification

D2B Toxic Material Causing Other Toxic Effects
Moderate skin irritant
Moderate respiratory irritant
Moderate eye irritant

2.3 GHS Classification

Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity - single exposure (Category 3)

2.4..GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)

H315 : Causes skin irritation.

H319 : Causes serious eye irritation.
H335 : May cause respiratory irritation.

Precautionary statement(s)

P261 : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P305 + P351 + P338 : IF IN EYES, Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.5..HMIS Classification

Health hazard: 2
Flammability: 0
Physical hazards: 0

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.

2.6. NFPA Rating

Health hazard: 2
Fire: 0
Reactivity Hazard:.....0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common name/Synonyms	CAS number	EC number	[%]
Sodium succinate anhydrous	Sodium succinate dibasic Succinic acid disodium salt	150-90-3	205-778-7	98-100

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: Rinse with soap and plenty of water. Consult a doctor.
In the event of contact with the eyes: Rinse cautiously with water for several 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 fire fighting if necessary.
Hazardous combustion products: Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sodium oxides

Explosion data - sensitivity to mechanical impact: no data available
Explosion data - sensitivity to static discharge : no data available

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures	Use personal protection equipment. Avoid producing dust. Avoid breathing vapors, mist or gas. Ensure that ventilation is adequate.
6.2. Environmental protection precautions	Do not let the product get into the drains.
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.

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.
7.2. Safe storage conditions, including any incompatibilities	Use tightly sealed containers and store them in a dry and well-ventilated space.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits	OSHA: Not established ACGIH: Not established

8.2. Personal protection

Appropriate engineering measures	Use mechanical exhaust or laboratory fume hood 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. Select bodily protection measures depending on the quantity and concentration of the hazardous substance in the workplace. 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: 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. Information about the essential physical and chemical properties

Physical state	Solid
Colour	White
Odour	Not available
pH	Not available
Melting point/freezing point	Not available
Boiling point	Not available
Flash point	Not available
Vapour pressure	Not available
Relative density	Not available
Solubility in water	Not available
Partition coefficient: *n*-octanol/water	Not available

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	Not available.
10.4. Incompatible materials	Strong oxidising agents, strong acids
10.5. Dangerous decomposition products	Hazardous decomposition products formed under fire conditions: carbon oxides, sodium oxides.

11. TOXICOLOGICAL INFORMATION

11.1. Information about toxicological effects

Routes of Entry	Inhalation, ingestion, and dermal and eye contact
Acute toxicity	**Oral LD_{50}**: no data available **Inhalation LC_{50}**: no data available **Dermal LD_{50}**: no data available **Intravenous (mouse) LD_{50}** : 4 500 mg/kg
Skin corrosion/skin irritation	no data available

Severe eye injuries/eye irritation	no data available
Respiratory or cutaneous sensitisation	no data available
Stem cell mutagenicity	no data 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	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	No data available
12.2. Persistence and degradability	No data available
12.3. Bioaccumulation potential	No data available
12.4. Mobility in the soil	No data available
12.5. Results of PBT and vPvB evaluations	No data available
12.6. Other undesirable effects	No data available

13. DISPOSAL CONSIDERATIONS

13.1. Waste handling methods	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

14. INFORMATION FOR TRANSPORT

DOT (US). Not dangerous goods.

IMDG. Not dangerous goods.

IATA. Not dangerous goods.

15. REGULATORY INFORMATION

OSHA Hazards : Irritant
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.

WHMIS Classification
D2B Toxic Material Causing Other Toxic Effects
Moderate skin irritant
Moderate respiratory irritant
Moderate eye irritant

16. OTHER INFORMATION

16.1. Information about the revision

SDS created on Aug 23 2012.
Version 2.2. July 23 2015. Minor changes made: email address, copyright date.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. BioAmber Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.