

1. IDENTIFICATION

1.1. Product identifier

Product name	Disodium Succinate
Chemical name	Dodium 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@bio-amber.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
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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
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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

Name	CAS Nr.	EC Nr.	Index Nr.	Concentration [%]	Classification DSD/CLP	Specific concentration limits
Sodium succinate anhydrous	150-90-3	205-778-7	-	98 - 100	Xi; R36/37/38	-
					Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335	-

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	<i>Appropriate:</i> water spray, alcohol-resistant foam, dry chemical or carbon dioxide. <i>Inappropriate:</i> 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** Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Ensure adequate ventilation.
- 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

- Other solvents	Not available
- Partition coefficient n-Octanol/Water (log P _{O/W})	Not available
- Decomposition temperature	Not available
- Viscosity	Not applicable
- Explosion properties	Not available
- Oxidizing properties	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 LD ₅₀ : not available Dermal LD ₅₀ : not available Inhalation LC ₅₀ : not available Intravenous (mouse) LD ₅₀ : 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	<i>IARC:</i> 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 <i>ACGIH:</i> 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

	Overland transport (ADR/RID)	River transport (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1. UN Number	Not regulated			
14.2. UN proper shipping name	Not regulated			
14.3. Transport hazard classes	Not regulated			
14.4. Packing group	Not regulated			
14.5. Environmental hazards	Not regulated			
14.6. Classification	Not regulated			
14.7. Classification code	Not regulated			
14.8. Danger sheet	Not regulated			
14.9. Limited amount (LQ)	Not regulated			
14.10. Additional information	-			

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

ADN/ADNR: Regulations concerning the transport of dangerous substances in barges on inland waterways.

ADR/RID: European Agreement concerns the International Carriage of Dangerous Goods by Road/ Regulations concerning the international carriage of dangerous goods by rail.

ANSI: American National Standards Institute

CAS N^o.: Chemical Abstract Service Number

CFR: Code of Federal Regulations

CLP: Classification, Labeling and Packaging

DSD: Dangerous Substance Directive

DPD : Dangerous Preparation Directive

EC No.: European Commission Number

IATA: International Air Transport Associations

IMDG: International Maritime Dangerous Goods code

NFPA: National Fire Protection Association

PBT: Persistent, Bioaccumulative, Toxic

RCRA: The Resource Conservation and Recovery Act

UN N^o.: United Nations Number

UVCB: Substances of Unknown or Variable composition, Complex reaction products or Biological materials

vPvB: very Persistent and very Bioaccumulative

WHMIS: Workplace Hazardous Materials Information System

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



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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.