## MATERIAL SAFETY DATA SHEET

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Section 1 - Product and Company Information Product Name SUCCINIC ACID, DISODIUM SALT, 99% Product Number 224731 Brand ALDRICH Company Sigma-Aldrich Address 3050 Spruce Street SAINT LOUIS MO 63103 US Technical Phone: 800-325-5832 800-325-5052 Fax: 314-776-6555 Emergency Phone: Section 2 - Composition/Information on Ingredient SARA 313 Substance Name CAS # SUCCINNIC ACID, SODIUM SALT 150 - 90 - 3No Formula C4H4O4.2Na Synonyms Butanedioic acid, disodium salt (9CI) \* Disodium succinate \* Jantaran sodny (Czech) \* Sodium succinate \* Soduxin WM7751000 RTECS Number: Section 3 - Hazards Identification EMERGENCY OVERVIEW Irritant. Irritating to eyes, respiratory system and skin. HMIS RATING HEALTH: 2 FLAMMABILTTY: 0 **REACTIVITY: 0** NFPA RATING HEALTH: 2 FLAMMABILITY: 0 **REACTIVITY: 0** For additional information on toxicity, please refer to Section 11. Section 4 - First Aid Measures ORAL EXPOSURE If swallowed, wash out mouth with water provided person is conscious. Call a physician. INHALATION EXPOSURE If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water. EYE EXPOSURE In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes. Section 5 - Fire Fighting Measures FLASH POINT N/A AUTOIGNITION TEMP N/A FLAMMABILITY N/A EXTINGUISHING MEDIA Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam. FIREFIGHTING Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions. Section 6 - Accidental Release Measures PROCEDURE(S) OF PERSONAL PRECAUTION(S) Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. METHODS FOR CLEANING UP Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete. Section 7 - Handling and Storage HANDLING User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. STORAGE Suitable: Keep tightly closed. SPECIAL REQUIREMENTS Hygroscopic. Section 8 - Exposure Controls / PPE ENGINEERING CONTROLS Safety shower and eye bath. Mechanical exhaust required. PERSONAL PROTECTIVE EOUIPMENT Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Hand: Rubber gloves.

## Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid Color: White
Property	Value At Temperature or Pressure
Molecular Weight pH BP/BP Range MP/MP Range Freezing Point Vapor Pressure Vapor Density Saturated Vapor Conc. SG/Density Bulk Density Odor Threshold Volatile% VOC Content Water Content Evaporation Rate Viscosity Surface Tension Partition Coefficient Decomposition Temp. Flash Point Explosion Limits Flammability Autoignition Temp Refractive Index Optical Rotation Miscellaneous Data Solubility N/A = not available	- 162.05 AMU N/A N/A N/A N/A N/A N/A N/A N/A
Section 10 - Stability	nd Reactivity
STABILITY Stable: Stable. Conditions of Instab Materials to Avoid:	lity: Hygroscopic. Strong oxidizing agents, Strong acids.
HAZARDOUS DECOMPOSITION Hazardous Decomposit	PRODUCTS on Products: Carbon monoxide, Carbon dioxide.
HAZARDOUS POLYMERIZATION Hazardous Polymerization: Will not occur	
Section 11 - Toxicological Information	
ROUTE OF EXPOSURE Skin Contact: Causes Skin Absorption: May Eye Contact: Causes	be harmful if absorbed through the skin.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed. SIGNS AND SYMPTOMS OF EXPOSURE To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. TOXICITY DATA Intravenous Mouse 4500 MG/KG LD50 Section 12 - Ecological Information No data available. Section 13 - Disposal Considerations APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION Symbol of Danger: Xi Indication of Danger: Irritant. R: 36/37/38 Risk Statements: Irritating to eyes, respiratory system and skin. S: 26-36 Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US CLASSIFICATION AND LABEL TEXT Indication of Danger: Irritant. Risk Statements: Irritating to eyes, respiratory system and skin. Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

UNITED STATES REGULATORY INFORMATION SARA LISTED: No TSCA INVENTORY ITEM: Yes

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CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in
accordance with the hazard criteria of the CPR, and the MSDS
contains all the information required by the CPR.
DSL: Yes
NDSL: No
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Section 16 - Other Information

## DISCLAIMER

For R&D use only. Not for drug, household or other uses.

## WARRANTY

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. Sigma-Aldrich 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. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.