MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2320
Gaithersburg, Maryland 20899-2320

SRM Number: 910
MSDS Number: 910
SRM Name: Sodium Pyruvate

Date of Issue: 05 August 2005

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Description: Standard Reference Material (SRM) 910 is intended primarily for use in the calibration and standardization of procedures for pyruvate, lactic dehydrogenase, and glutamic-pyruvic transaminase determinations in clinical analyses, and for critical evaluation of the routine working or secondary reference materials used in these procedures. Each unit of SRM 910 consists of a bottle containing approximately 25 g.

Substance: Sodium Pyruvate

Other Designations: **Sodium Pyruvate** (pyruvic acid, sodium salt; propanoic acid, 2-oxo-sodium salt; sodium alpha-ketopropionate; 2-oxopropanoic acid, sodium salt)

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Component:	**Sodium Pyruvate**
CAS Number:	113-24-6
EC Number (EINECS):	204-024-4
SRM Nominal Concentration (weight %):	99
EC Classification:	Xi
EC Risk (R No.):	36, 37, 38
EC Safety (S No.):	2, 24, 25, 26, 46
EC Risk/Safety Phrases:	See Section 15, "Regulatory Information".

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 2 Fire = 1 Reactivity = 0

Major Health Hazards: Respiratory tract, skin and eye irritation.

Physical Hazards: Dust/air mixtures may ignite or explode.

Potential Health Effects

Inhalation: Inhalation (acute exposure) of sodium pyruvate may cause coughing, respiratory tract irritation, dyspnea, and pulmonary edema. Prolonged exposure may cause mucous membrane irritation.

Skin Contact: Skin contact with sodium pyruvate may cause irritation and pain. Prolonged contact may cause dermatitis.

Eye Contact: Eye contact with sodium pyruvate redness, pain, and irritation. Repeated contact may cause conjunctivitis.

Ingestion: No information is available for acute or chronic exposure by ingestion of sodium pyruvate.

Listed as a Carcinogen/ Potential Carcinogen:	Yes	No	
		X	In the National Toxicology Program (NTP) Report on Carcinogens.
		X	In the International Agency for Research on Cancer (IARC) Monographs.
		X	By the Occupational Safety and Health Administration (OSHA).

4. First Aid Measures

Inhalation: If adverse effects occur, remove to uncontaminated area. Give artificial respiration, if not breathing, by qualified personnel. Get immediate medical attention.

Skin Contact: Rinse affected area with copious amounts of water for at least 15 minutes while removing contaminated clothing. Get medical attention, if needed.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Get immediate medical attention.

Ingestion: If a large amount of sodium pyruvate is swallowed, get immediate medial attention.

5. Fire Fighting Measures

Fire and Explosion Hazards: Sodium pyruvate is a slight fire hazard. Dust/air mixtures may ignite or explode in the presence of an ignition source.

Extinguishing Media: Regular dry chemical. Carbon dioxide. Water. Regular foam.

Fire Fighting: Move container from fire area if it can be done without risk. Do NOT scatter pilled material with high-pressure water streams. Use extinguishing agents that are appropriate for the surrounding fire. Avoid inhalation of material or combustion by-products. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Flash Point (°C): Not applicable.
Method Used: Not applicable.

Autoignition Temp. (°C): Not applicable.

Flammability Limits in Air
UPPER (Volume %): Not applicable.
LOWER (Volume %): Not applicable.

6. Accidental Release Measures

Occupational Release: Collect spilled material in an appropriate container for disposal. Keep out of water supplies and sewers.

Disposal: Refer to Section 13, "Disposal Considerations".

7. Handling and Storage

Storage: Store and handle in accordance with all current regulations and standards. Refer to SRM 910 Certificate of Analysis for storage of SRM 910.

Safe Handling Precautions: See Section 8, "Exposure Controls and Personal Protection".

8. Exposure Controls and Personal Protection

Exposure Limits: **Sodium Pyruvate:** No occupational limits established.

Ventilation: Use local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Respirator: Under conditions of heavy exposure or exhaust ventilation system is NOT available, respiratory protection may be needed. Refer to the "NIOSH Guide to the Selection and Use of Particulate Respirators Certified under 42 CFR 84" for selection and use of respirators certified by NIOSH.

Eye Protection: Wear safety goggles. **DO NOT** wear contact lenses in the laboratory. An eye wash station should be readily available near areas of use.

Personal Protection: Wear appropriate protective clothing and chemically resistant gloves to prevent skin exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Component: **Sodium Pyruvate**

Appearance: Powder. White.

Relative Molecular Weight: 110.04 g/mol

Molecular Formula: $C_3H_3NaO_3$

Melting Point: > 300 °C (> 572 °F)

Water Solubility: Soluble.

Solvent Solubility: Soluble in alcohol and ether.

10. STABILITY AND REACTIVITY

Stability: X Stable _____ Unstable

Stable at normal temperatures and pressure of use and storage.

Conditions to Avoid: Avoid heat, flames, sparks, and other sources of ignition. Avoid contact with incompatible materials. Keep out of water supplies and sewers.

Incompatible Materials: Oxidizing materials.

Fire/Explosion Information: See Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Oxides of sodium. Carbon dioxide. Carbon monoxide.

Hazardous Polymerization: _____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: X Inhalation X Skin X Ingestion

Toxicity Data: No data available.

Health Effects (Acute and Chronic): See Section 3: "Hazards Identification" for potential health effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: Not available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOTand IATA: Not regulated by DOT.

15. REGULATORY INFORMATION

U.S. Regulations: CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Not regulated.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE:	Yes.
CHRONIC:	No.
FIRE:	No.
REACTIVE:	No.
SUDDEN RELEASE:	No.

State Regulations: California Proposition 65: Not regulated.

CANADIAN Regulations

WHMIS Classification: Not determined.

EUROPEAN Regulations

EC Classification (assigned):	Xi	Irritant.
EC Risk Phrases:	R36	Irritating to eyes.
	R37	Irritating to respiratory system.
	R38	Irritating to skin.
EC Safety Phrases:	S2	Keep out of reach of children.
	S24	Avoid contact with skin.
	S25	Avoid contact with eyes.
	S26	In case of contact with eyes, rinse immediately with copious amount of water and seek immediate medical attention.
	S46	If swallowed, seek immediate medical advice.

National Inventory Status

U.S. Inventory (TSCA): Listed on inventory.

TSCA 12(b) Export Notification: Not listed.

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Pyruvic Acid, Sodium Salt*, 16 March 2003.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.