Date of Issue:
13 October 2015

SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

Product Identifier

RM Number: 8040
RM Name: Sodium Oxalate ($Na_2C_2O_4$) Reductometric Standard
Other Means of Identification: Not applicable.

Recommended Use of This Material and Restrictions of Use

This Reference Material (RM) was prepared to provide material of uniform, high purity for use as a working standard for oxidation-reduction reactions. The material conforms to the American Chemical Society specification for reagent-grade material, but should not be considered as entirely free from impurities such as moisture, sodium hydrogen oxalate and sodium hydrogen carbonate. A unit of RM 8040 consists of one bottle containing 60 g of crystalline sodium oxalate.

Company Information

National Institute of Standards and Technology
Standard Reference Materials Program
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2. HAZARDS IDENTIFICATION

Classification

Physical Hazard:	Not classified.	
Health Hazard:	Acute Toxicity, Oral	Category 4
	Acute Toxicity, Dermal	Category 4

Label Elements
Symbol

Signal Word
WARNING

Hazard Statement(s):

H302+H312	Harmful if swallowed or in contact with skin.

Precautionary Statement(s):

P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves.
P301+P302+P312	If swallowed or if on skin: Call a physician if you feel unwell.
P330	Rinse mouth.
P302+P352	If on skin: Wash with plenty of water.
P363	Take off contaminated clothing and wash before reuse.
P501	Dispose of contents and container according to local regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients(s) with Unknown Acute Toxicity: Not applicable.

3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Substance: Sodium oxalate

Other Designations: Ethandioic acid; disodium salt; oxalic acid, disodium salt; disodium oxalate.

Components are listed in compliance with OSHA's 29 CFR 1910.1200; for the actual values see the Report of Investigation.

Hazardous Component(s)	CAS Number	EC Number (EINECS)	Nominal Mass Concentration (%)
Sodium oxalate	62-76-0	200-550-3	100

4. FIRST AID MEASURES

Description of First Aid Measures:

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration or oxygen by qualified personnel. Seek immediate medical attention.

Skin Contact: Wash skin with soap and water for at least 15 minutes. Thoroughly clean and dry contaminated clothing before reuse.

Eye Contact: Flush eyes with water for at least 15 minutes. If necessary, seek medical attention.

Ingestion: If a large amount is swallowed, get medical attention.

Most Important Symptoms/Effects, Acute and Delayed: Skin, eye, and possible respiratory irritation.

Indication of any immediate medical attention and special treatment needed, if necessary: If any of the above symptoms are present, seek medical attention if needed.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Slight fire hazard. See Section 9, "Physical and Chemical Properties" for flammability properties.

Extinguishing Media:
Suitable: Regular dry chemical, carbon dioxide, water, and regular foam.
Unsuitable: None listed.

Specific Hazards Arising from the Chemical: None listed.

Special Protective Equipment and Precautions for Fire-Fighters: Avoid inhalation of material or combustion byproducts. Wear full protective clothing and NIOSH approved self-contained breathing apparatus (SCBA).

NFPA Ratings (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health = 3 Fire = 1 Reactivity = 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection".

Methods and Materials for Containment and Clean up: Do not touch spilled material. Notify safety personnel of spills. Collect spilled material in appropriate container for disposal. Isolate hazard area and deny entry.

7. HANDLING AND STORAGE

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

Storage: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: No occupational exposure limits have been established. The exposure limits for Particulates Not Otherwise Regulated are applicable.

OSHA (PEL): 15 mg/m^3 (TWA, total particulates)
5 mg/m^3 (TWA, respirable particulates)

Engineering Controls: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Personal Protection: In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.

Respiratory Protection: If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

Eye/Face Protection: Wear splash resistant safety goggles with a face shield. An eye wash station should be readily available near areas of use.

Skin and Body Protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant gloves should be worn at all times when handling chemicals.

9. PHYSICAL AND CHEMICAL PROPERTIES

Descriptive Properties:

Appearance (physical state, color, etc.):	colorless to white crystalline powder
Molecular Formula:	$Na_2C_2O_4$
Molar Mass (g/mol):	134
Odor:	odorless
Odor threshold:	not available
pH (solution):	neutral in solution
Evaporation rate:	not applicable
Melting point/freezing point (ºC):	not available
Specific gravity (water = 1):	2.34
Vapor Pressure (mmHg):	not applicable
Vapor Density (air = 1):	not applicable
Viscosity (cP):	not applicable
Solubility(ies):	water soluble (3.7 % at 20 ºC); insoluble in alcohol and ether
Partition coefficient (n-octanol/water):	not available
Particle Size	not available

Thermal Stability Properties:

Autoignition Temperature (ºC):	not available
Thermal Decomposition (ºC):	250 to 270 (482 to 518 ºF)
Initial boiling point and boiling range (ºC):	not available
Explosive Limits, LEL (Volume %):	not available
Explosive Limits, UEL (Volume %):	not available
Flash Point (ºC)	not available
Flammability (solid, gas):	not available

10. STABILITY AND REACTIVITY

Reactivity: Stable at normal temperatures and pressure.

Stability: X Stable _____ Unstable

Possible Hazardous Reactions: None listed.

Conditions to Avoid: Avoid generating dust and exposure to moisture. Avoid heat, flames, sparks and other sources of ignition.

Incompatible Materials: None listed.

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

Hazardous Decomposition: Thermal decomposition will produce oxides of carbon.

Hazardous Polymerization: _____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Exposure: X Inhalation _____ Skin _____ Ingestion

Symptoms Related to the Physical, Chemical and Toxicological Characteristics: Skin, eye, and possible respiratory irritation.

Potential Health Effects (Acute, Chronic and Delayed):

Inhalation: Inhalation of dust may cause irritation of the mucous membranes. No data available for chronic exposure.

Skin Contact: Exposure to dust may result in irritation. Solutions of sodium oxalate may be absorbed through the skin causing hypocalcemia and renal impairment. Prolonged immersion of the hands in sodium oxalate solutions has resulted in gangrene due to absorption.

Eye Contact: Depending on concentration and duration of exposure, sodium oxalate dust may cause eye irritation with redness and pain. Repeated or prolonged contact may result in the same effects as acute exposure.

Ingestion: Ingestion of this material is unlikely under normal conditions of use. If ingested, gastrointestinal irritation and possible burns to the mouth and stomach may result. Large doses of dilute solutions may result in renal failure. Chronic ingestion of oxalates may result in urinary calculi.

Numerical Measures of Toxicity:

Acute Toxicity: Category 4, Oral and Dermal.
Rat, Oral LD50: 11 160 mg/kg

Skin Corrosion/Irritation: Not classified; no data available.

Serious Eye Damage/Irritation: Not classified; no data available.

Respiratory Sensitization: Not classified; no data available.

Skin Sensitization: Not classified; no data available.

Germ Cell Mutagenicity: Not classified; no data available.

Carcinogenicity: Not classified.

Listed as a Carcinogen/Potential Carcinogen _____ Yes X No
Sodium oxalate is not listed by IARC, NTP or OSHA as a carcinogen.

Reproductive Toxicity: Not classified; no data available.

Specific Target Organ Toxicity, Single Exposure: Not classified; no data available.

Specific Target Organ Toxicity, Repeated Exposure: Not classified; no data available.

Aspiration Hazard: Not classified; no data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: No data available.

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other Adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Not regulated by DOT or IATA.

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 HEALTH:	Yes.
CHRONIC HEALTH:	Yes.
FIRE:	No.
REACTIVE:	No.
PRESSURE:	No.

State Regulations:

California Proposition 65: Not listed.

U.S. TSCA Inventory: Listed.

TSCA 12(b), Export Notification: Not listed.

Canadian Regulations:

WHMIS Information: Not provided for this material.

16. OTHER INFORMATION

Issue Date: 13 October 2015

Sources: ChemAdvisor, Inc., SDS *Sodium Oxalate*, 20 March 2015.

European Chemical Agency (ECHA), Dis*odium Oxalate, CAS No.62-76-0,* available at http://echa.europa.eu/information-on-chemicals (accessed Oct 2015).

Center for Disease Control (CDC), NIOSH Pocket Guide to Chemical Hazards, *Particulates Not Otherwise Regulated*, available at http://www.cdc.gov/niosh/npg/npgd0480.html (accessed Oct 2015).

Key of Acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists	NIOSH	National Institute for Occupational Safety and Health
ALI	Annual Limit on Intake	NIST	National Institute of Standards and Technology
CAS	Chemical Abstracts Service	NRC	Nuclear Regulatory Commission
CEN	European Committee for Standardization	NTP	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	OSHA	Occupational Safety and Health Administration
CFR	Code of Federal Regulations	PEL	Permissible Exposure Limit
CPSU	Coal Mine Dust Personal Sample Unit	RCRA	Resource Conservation and Recovery Act
DOT	Department of Transportation	REL	Recommended Exposure Limit
EC50	Effective Concentration, 50 %	RM	Reference Material
EINECS	European Inventory of Existing Commercial Chemical Substances	RQ	Reportable Quantity
EPCRA	Emergency Planning and Community Right-to-Know Act	RTECS	Registry of Toxic Effects of Chemical Substances
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act
IATA	International Air Transportation Association	SCBA	Self-Contained Breathing Apparatus
IDLH	Immediately Dangerous to Life and Health	SRM	Standard Reference Material
ISO	International Organization for Standardization	STEL	Short Term Exposure Limit
LC50	Lethal Concentration, 50 %	TDLo	Toxic Dose Low
LD50	Lethal Dose, 50 %	TLV	Threshold Limit Value
LEL	Lower Explosive Limit	TPQ	Threshold Planning Quantity
MSDS	Material Safety Data Sheet	TSCA	Toxic Substances Control Act
NFPA	National Fire Protection Association	TWA	Time Weighted Average
MSHA	Mine Safety and Health Administration	UEL	Upper Explosive Limit
		WHMIS	Workplace Hazardous Materials Information System

Disclaimer: Physical and chemical data contained in this SDS are provided only for use in assessing the hazardous nature of the material. The SDS was prepared carefully, using current references; however, NIST does not certify the data in the SDS. The reference values for this material are given in the NIST Report of Investigation.

Users of this RM should ensure that the SDS in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; fax (301) 948-3730; e-mail srmmsds@nist.gov; or via the Internet at http://www.nist.gov/srm.