

# MATERIAL SAFETY DATA SHEET

## 1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology  
Standard Reference Materials Program  
100 Bureau Drive, Stop 2300  
Gaithersburg, Maryland 20899-2300

RM Number: 8545  
MSDS Number: 8545  
RM Name: LSVEC (Carbon, Oxygen, and  
Lithium Isotopes in Lithium Carbonate)

Date of Issue: 20 December 2011

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**Description:** A unit of Reference Material (RM) 8545 consists of 0.4 g of lithium carbonate.

**Substance:** Lithium Carbonate.

**Other Designations:** Lithium Carbonate (carbonic acid, dilithium salt; dilithium carbonate; lithonate; carbolith).

## 2. HAZARDS IDENTIFICATION

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

**Physical Hazards:** None listed.

**Major Health Hazards:** Eye, skin, and gastrointestinal irritant, and neurological effects.

### Potential Health Effects

**Inhalation:** Short term (acute) exposure to dust may irritate the respiratory tract and result in coughing and/or sore throat. There is no data listed for long term (chronic) exposure.

**Skin Contact:** Skin contact may result in irritation. There is no data listed for long term (chronic) exposure.

**Eye Contact:** Direct contact may cause irritation with redness and pain. Repeated exposure may result in conjunctivitis.

**Ingestion:** Exposure to lithium carbonate in large doses may result in irritation of the gastrointestinal tract, central nervous system effects, kidney damage, cardiac or pulmonary complications. In severe cases, death may result. Long term or repeated (chronic) exposure may result in the same symptoms as acute ingestion, as well as effects to the endocrine system resulting in hyperthyroidism, diabetes, osteoporosis, or sexual dysfunction, among others. Lithium readily crosses the placental barrier and, in toxic doses, may result in birth defects.

### Listed as a Carcinogen/Potential Carcinogen:

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In the International Agency for Research on Cancer (IARC) Monographs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
By the Occupational Safety and Health Administration (OSHA)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Components	CAS Number	EC Number (EINECS)	Nominal Concentration (mass fraction)
Lithium Carbonate	554-13-2	209-062-5	100 %

**EC Classification (assigned):** Xi, XN

**EC Risk (R):** 22, 36.

**EC Safety (S):** 24/25, 26, 46.

**EC Risk/Safety Phrases:** See Section 15 "Regulatory Information".

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#### 4. FIRST AID MEASURES

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**Inhalation:** If adverse effects occur, remove to uncontaminated area. Seek medical attention if needed.

**Skin Contact:** Wash exposed skin with copious amounts of water for at least 15 minutes. Remove any contaminated clothing.

**Eye Contact:** Immediately flush eyes with copious amounts of water for at least 15 minutes. Seek immediate medical attention.

**Ingestion:** Ingestion of this material is not likely under normal conditions. If swallowed, contact local poison control or seek immediate medical attention.

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#### 5. FIRE FIGHTING MEASURES

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**Fire and Explosion Hazards:** Negligible fire and explosion hazard.

**Extinguishing Media:** Use extinguishing agents appropriate for the surrounding fire.

**Fire Fighting:** 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 Explosion Limit (UEL):** Not applicable.

**Lower Explosion Limit (LEL):** Not applicable.

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#### 6. ACCIDENTAL RELEASE MEASURES

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**Occupational Release:** Avoid generating dust. Collect spilled material and place in an appropriate container for disposal.

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

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#### 7. HANDLING AND STORAGE

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**Storage:** Store and handle in accordance with all current regulations and standards.

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

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#### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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**Exposure Limits:** This material is a particulate matter and adequate inhalation/respiratory protection should be used to minimize exposure. No occupational exposure limits have been established for this material.

**Ventilation:** Use a local exhaust ventilation system.

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

**Eye Protection:** Wear safety goggles. An eye wash station should be readily available near areas of use.

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

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#### 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Component:** Lithium Carbonate

**Physical State:** Solid

**Appearance and Odor:** white odorless powder

**Molecular Formula:** Li<sub>2</sub>CO<sub>3</sub>

**Molar mass:** 73.89 g/mol

**Density:** Not listed

**Water Solubility:** 1.54 % at 0 °C

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## 10. STABILITY AND REACTIVITY

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**Stability:**              X   Stable                                   Unstable

**Conditions to Avoid:** Avoid generating dust.

**Incompatible Materials:** Acids, halogens, metals.

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

**Hazardous Decomposition:** Oxides of carbon.

**Hazardous Polymerization:**                   Will Occur                              X   Will Not Occur

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## 11. TOXICOLOGICAL INFORMATION

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**Route of Entry:**              X   Inhalation                              X   Skin                              X   Ingestion

**Toxicity Data:**

Rat, Oral LD<sub>50</sub>: 525 mg/kg

Rat, Inhalation LC<sub>50</sub>: >2.17 mg/L (4 h)

**Target Organs:** Respiratory tract, eyes, skin, gastrointestinal tract, renal system, nervous system, endocrine system.

**Medical Conditions Aggravated by Exposure:** Cardiovascular disorders, renal disorders, hormonal disorders.

**Mutagen/Teratogen:** Lithium readily crosses the placental barrier and is excreted in breast milk. Exposure to lithium during pregnancy has been associated with neonatal goiter, cardiac anomalies, central nervous system depression and hypotonia. Teratogenicity in mammals has been reported.

**The following RTECS mutagenic end points have been published:**

Mouse: 1200 µg/kg/3 days intermittent.

Rat: 420 gm/kg/12 weeks continuous.

Human: 12 800 µg/kg/12 weeks intermittent.

**The following RTECS reproductive end points have been published:**

Mouse, Oral TD<sub>LO</sub>: 4650 mg/kg (pregnant 6–15 days).

Rat, Oral TD<sub>LO</sub>: 800 mg/kg (pregnant 15–19 days).

Woman, Oral TD<sub>LO</sub>: 3072 mg/kg (pregnant 1–37 weeks).

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

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## 12. ECOLOGICAL INFORMATION

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**Ecotoxicity Data:** No data listed.

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## 13. DISPOSAL CONSIDERATIONS

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

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## 14. TRANSPORTATION INFORMATION

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**U.S. DOT and IATA:** Not regulated.

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## 15. REGULATORY INFORMATION

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### U.S.: REGULATIONS

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.  
SARA Title III Sections 302 (40 CFR 355.30): Not regulated.  
SARA Title III Sections 304 (40 CFR 355.40): Not regulated.  
SARA Title III Sections 313 (40 CFR 372.65): Not regulated.  
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE:	Yes
CHRONIC:	No
FIRE:	No
REACTIVE:	No
PRESSURE:	No

### STATE REGULATIONS:

**California Proposition 65:** WARNING! This product contains a chemical know to the state of California to cause reproductive/developmental effects.

### CANADIAN REGULATIONS:

**WHMIS Information:** Not provided for this material.

### EUROPEAN REGULATIONS

**EC Classification:** Xi – Irritant; Xn – Harmful.

#### EC Risk Phrases:

R22 – Harmful if swallowed.  
R36 – Irritating to eyes.

#### EC Safety Phrases:

S24/25 – Avoid contact with skin and eyes  
S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S46 – If swallowed, seek medical advice immediately and show this container or label.

### NATIONAL INVENTORY STATUS:

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

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

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## 16. OTHER INFORMATION

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**Sources:** ChemADVISOR, Inc., MSDS, *Lithium Carbonate*, 06 December 2010.

**Disclaimer:** Physical and chemical data contained in this MSDS are provided only for use 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.