

MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

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Standard Reference Materials Program
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RM Number: 8557
MSDS Number: 8557
RM Name: NBS127 (Sulfur and Oxygen
Isotopes in Barium Sulfate)

Date of Issue: 09 January 2012

Emergency Telephone ChemTrec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)

Description: A unit of Reference Material (RM) 8557 consists of 0.5 g of powdered barium sulfate.

Substance: Barium Sulfate.

Other Designations: Barium sulfate (sulfuric acid, barium salt; enamel white).

2. HAZARDS IDENTIFICATION

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

Physical Hazards: None listed

Major Health Hazards: Barium sulfate powder is a possible respiratory and gastrointestinal irritant.

Potential Health Effects

Inhalation: Exposure to dust may irritate the respiratory tract.

Skin Contact: No information listed.

Eye Contact: Direct contact with dust may cause irritation.

Ingestion: Ingestion of a large amount of barium sulfate may result in irritation of the gastrointestinal tract. No information listed for chronic exposure.

Listed as a Carcinogen/Potential Carcinogen:

	<u>Yes</u>	<u>No</u>
In the National Toxicology Program (NTP) Report on Carcinogens	_____	<u>X</u>
In the International Agency for Research on Cancer (IARC) Monographs	_____	<u>X</u>
By the Occupational Safety and Health Administration (OSHA)	_____	<u>X</u>

3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Components	CAS Number	EC Number (EINECS)	Nominal Concentration ^(a) (mass fraction)
Barium sulfate	7727-43-7	231-784-4	100 %

EC Classification (assigned): Not determined

EC Risk (R): None listed.

EC Safety (S): None listed.

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

4. FIRST AID MEASURES

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.

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

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

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Negligible fire 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.

6. ACCIDENTAL RELEASE MEASURES

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

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

7. HANDLING AND STORAGE

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

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

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: This material is a particulate matter and adequate inhalation/respiratory protection should be used to minimize exposure.

ACGIH (TWA): 10 mg/m³

NIOSH (TWA): 10 mg/m³ (total dust); 5 mg/m³ (respirable dust)

OSHA (TWA): 15 mg/m³ (total dust); 5 mg/m³ (respirable fraction)

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Component: Barium sulfate

Physical State: Solid

Appearance and Odor: White to yellow odorless powder.

Molecular Formula: BaSO₄

Molar mass (g/mol): 233.43

Water Solubility: Insoluble

10. STABILITY AND REACTIVITY

Stability: X Stable Unstable

Conditions to Avoid: Avoid generating dust.

Incompatible Materials: Metals and combustibles.

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

Hazardous Decomposition: Oxides of sulfur and barium.

Hazardous Polymerization: Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: X Inhalation Skin X Ingestion

Toxicity Data:

No data listed.

Target Organs: Respiratory tract, eyes, gastrointestinal tract.

Medical Conditions Aggravated by Exposure: Heart or cardiovascular disorders, skin disorders, respiratory disorders, immune system disorders, allergies.

Mutagenic: 200 mg/kg Intrapleural Rat TDLo.

Tumorigenic: 12500 µg/kg Mouse

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

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: No data listed.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose 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 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: Not listed.

CANADIAN REGULATIONS:

WHMIS Information: Not provided for this material.

EUROPEAN REGULATIONS

EC Classification: Not determined.

EC Risk Phrases: None determined.

EC Safety Phrases: None determined.

NATIONAL INVENTORY STATUS:

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

TSCA 12 (b) Export Notification: Not listed.

16. OTHER INFORMATION

Sources: ChemADVISOR, Inc., MSDS, *Barium Sulfate*, 12 December 2011.

EC; European Chemical Substance Information System (ESIS), *barium sulfate*, CAS No. 7727-43-7; available at <http://esis.jrc.ec.europa.eu> (accessed Jan 2012).

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 reference values for this material are given in the NIST Report of Investigation.