



# Super Conductor Materials, Inc.

391 Spook Rock Industrial Park, Suffern, NY 10901 · 845.368.0240 · Fax 845.368.0250 · www.scm-inc.com

Chemtrec: (800) 424-9300

Poison Center: (800) 562-8236

Revision Date: January 8<sup>th</sup>, 2019

## SAFETY DATA SHEET

Identity: Barium

Formula: Ba

### SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

### SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 137.33

CAS #	OSHA PEL	ACGIH TLV	%
7440-39-3	0.5 mg/m3	0.5 mg/m3	0.0 -100.0 %

### SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 1640.00 °C

Vapor Pressure (vs. air or mmHg): 10 mm at 1049.0 °C

Melting Point: 727.00 °C

Density: 3.62 gm/cc

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Decomposes to evolve hydrogen gas

*Appearance and odor:* Yellow-silver, slightly lustrous pieces; no odor.

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

*Method Used:* N/A

*Explosive Limits:* LEL: N/A

UEL: N/A

*Extinguishing Media:* USE: Class D or other metal extinguishing agent. DO NOT USE: Water or halogenated hydrocarbons.

*Special Fire Fighting Procedures:* Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

*Unusual Fire and Explosion Hazards:*

–Easily oxidizable and has a green colored flame.



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–Extremely reactive. May react violently or explosively with water, ammonia, halogens, oxygen and most acids to evolve hydrogen and strongly corrosive caustic Ba(OH)<sub>2</sub>.

## SECTION V - REACTIVITY DATA

*Stability:* Unstable

*Conditions to Avoid (instability):* Water, moisture and air

*Incompatibility:* Water, acids, C<sub>2</sub>Cl<sub>3</sub>F<sub>3</sub>, C<sub>2</sub>H<sub>2</sub>, FCl<sub>3</sub>, C<sub>2</sub>HCl<sub>3</sub>, carbon tetrachloride, 1, 1, 2 trichlorotrifluoroethane, fluorotrichloroethane, oxidizing agents, halogens, ammonia and oxygen.

*Hazardous Decomposition or Byproducts:* Barium oxide, barium hydroxide and hydrogen.

*Hazardous Polymerization:* Will not occur.

*Conditions to avoid (hazardous polymerization):* None.

## SECTION VI - HEALTH HAZARD DATA

*Route of Entry:* Inhalation? No Skin? Yes Eyes? Yes Ingestion? Yes Other: No

*Signs and Symptoms of Overexposure:*

*Inhalation:* May cause burning and irritation.

*Ingestion:* May cause chemical burns. Acute barium poisoning may cause: a slow, hard pulse and elevated blood pressure; excessive salivation; vomiting; colic; violent diarrhea; convulsive tremors; muscular paralysis and paralysis of the central nervous system; strong vasoconstriction, due to the direct barium stimulation of arterial muscles, raises blood pressure. High blood pressure can cause the stomach, intestines and kidneys to hemorrhage. Chronic barium poisoning is similar but less severe than acute barium poisoning.

*Skin:* May cause redness, itching, inflammation and chemical burns.

*Eye:* May cause redness, itching, inflammation, chemical burns and watering.

*Health Hazards (Acute and Chronic):*

*Inhalation:*

Acute: Severely irritating to respiratory tract.

Chronic: Not applicable.

*Ingestion:*

Acute: Chemical burns as it may react with moisture on living tissue. May cause poisoning, vomiting, colic, diarrhea, slow irregular pulse, transient hypertension, convulsions, tremors, muscular paralysis, and acute barium poisoning.

Chronic: May cause chronic barium poisoning.

*Skin:*

Acute: Chemical burns as it reacts with moisture on living tissue.

Chronic: May cause dermatitis.

*Eye:*

Acute: Chemical burns as it reacts with moisture on living tissue.



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Chronic: May cause corneal opacity and blindness.

*Target Organs:* May affect upper respiratory system, central nervous system, heart, skin and eyes.

*Carcinogenicity:* NTP? No IARC Monographs? No OSHA Regulated? No

*Medical Conditions Aggravated by Exposure:* Pre-existing respiratory disorders.

### Emergency and First Aid Procedures:

*Inhalation:* Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

*Ingestion:* Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person

*Skin:* Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist

*Eye:* Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

### *Steps to be taken in case material is released or spilled:*

Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

### *Waste disposal method:*

Dispose of in accordance with state, local, and federal regulations.

### *Hazard Label Information:*

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling. Barium metal must be kept under petroleum or other oxygen free liquid to exclude air.

### *Precautions:*

Barium metal must be kept under petroleum or other oxygen free liquid to exclude air. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Handle in a controlled environment in an inert gas.

## SECTION VIII - CONTROL MEASURES

### *Protective Equipment Summary (Hazard Label Information):*

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

### *Ventilation:*

Local Exhaust: To maintain concentration at low exposure levels.

Mechanical (General): Recommended.

### *Work/Hygienic/Maintenance Practices:*

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established