

## ***Material Safety Data Sheet***

Identity: Barium

Formula: Ba

### SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM 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

Chemical Family: Alkaline earth metal

CAS#7440-39-3

Hazardous Components	CAS#	OSHA PEL	ACGIH TLV	%
Barium	7440-39-3	Not established	Not established	100

### SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 1640.0 °C

Vapor Pressure: 10mm @ 1049 °C

Melting Point: 725.0 °C

Vapor Density: NA

Evaporation Rate: 0

Flash Point: N/A

Solubility in water: Decomposes

% Volatile: 0

Specific Gravity: (water=1): 3.51

*Appearance and odor:* Gray solid, odorless.

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

Flash Point: NA

Extinguishing Media: Flammable solid. Use dry graphite, soda ash, powdered sodium chloride, dry sand or appropriate metal fire dry powder extinguisher. DO NOT use water or halogenated hydrocarbons.

Special Fire Fighting Procedures: No special firefighting procedures needed. Use normal procedures which include wearing NIOSH/MSHA approved self-contained breathing apparatus, flame and chemical resistant clothing; hats, boots and gloves. If without risk, remove material from fire area.

SECTION IV - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (stability):* Incompatibles:

*Incompatibility-Materials to avoid:* Water, acids, oxidizing agents, chlorinated and fluorinated hydrocarbons, halogens, ammonia and oxygen.

*Hazardous Decomposition or Byproducts:* Hydrogen, barium hydroxide, violent energy release.

*Hazardous Polymerization:* Will not occur.

*Other:* Reacts violently with water and acids to evolve hydrogen, an explosive gas and barium hydroxide which is caustic and toxic.

SECTION V - HEALTH HAZARD DATA

*Routes of entry:* Inhalation? Yes      Skin? Yes      Eyes? Yes      Ingestion? Yes

*Stability:* Stable

*Conditions to Avoid:* Incompatibles

*Incompatibility – Material to avoid:* Water, acids, oxidizing agents, chlorinated and fluorinated hydrocarbon, halogens, ammonia and oxygen.

*Hazardous Decomposition or byproducts:* Hydrogen, barium hydroxide, violent energy release.

*Hazardous Polymerization:* Will not occur.

*Other:* Reacts violently with water and acids to evolve hydrogen, an explosive gas and barium hydroxide which is caustic and toxic.

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation Yes      Skin Yes      Eyes Yes      Ingestions Yes

*Health Hazards (Acute and Chronic):*

**ACUTE EFFECTS**

*Ingestion:* May cause barium poisoning. See acute effects of inhalation for symptoms.

*Skin Contact:* May cause irritation. May cause dermatitis, depilation.

*Eye Contact:* May cause irritation, may cause corneal opacity and blindness.

*Inhalation:* May cause irritation, may cause dizziness, nausea, vomiting, colic, diarrhea, rapid respiration, high blood pressure, irregular heart action, convulsions and paralysis.

Medical Conditions if any, Aggravated by the Chemical. None known.

*Other Health Hazards:* Effects of exposure are based on soluble barium salts. Toxicity of pure element is believed to be lower.

*Most likely routes of entry:* Ingestion

**CHRONIC EFFECTS**

*Ingestion:* None known

*Skin Contact:* May cause dermatitis  
*Eye Contact:* None known  
*Inhalation:* None known  
*Other:* None known

*Carcinogenicity:*

NTP: No                      IARC: No                      OSHA: No                      EPA: No

*Emergency And First Aid Procedures:*

*Ingestion:* No data available but one should obtain medical attention.  
*Skin Contact:* Remove contaminated clothing, flood skin with large amounts of water. If irritation persists see medical attention.  
*Eye Contact:* Immediately flush eyes, including under eyelids, with large amount of water for at least 15 minutes. Call a physician.  
*Inhalation:* No specific information available, one should obtain medical attention.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING AND USE

*Steps To Be Taken In Case Material Is Released or Spilled:*

Wearing full protective equipment, cover spill with dry sand or vermiculite. Mix well and carefully transfer to a container.

*Waste Disposal Method:*

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

*Hazard Label Information:*

Keep container tightly closed. Store in a cool, dry, well-ventilated area. Wash thoroughly after use.

*Other Precautions:*

Lab coat and apron, flame and chemical resistant coveralls, eyewash capable of sustained flushing, safety drench shower and hygienic facilities for washing.

SECTION VII I– CONTROL MEASURES

*Protective Equipment Summary – Hazard Label Information*

NIOSH approved respirator    Impervious gloves    Safety glasses

Clothes to prevent skin contact

*Ventilation Requirements:*

Glove bag or box with a dry inert atmosphere preferred.

*Respiratory Protection (Specify Type):*

*Eye/Face Protection:* ANSI approved safety goggles.

*Other Protective Clothing or Equipment*

Protective gear suitable to prevent contamination.

*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 and smoking. Do not blow dust off clothing or skin with compressed air.