Section 1: Identification

Product Name: Barium Strontium Titanium Oxide
CAS Number: 12044-27-7 / EC Number: 234-975-0
Company: Angstrom Sciences, Inc.
40 South Linden Street
Duquesne, PA 15110
For more information call: 412-469-8466
(Monday - Friday 9:00 AM - 5:00 PM EST)

Section 2: HAZARD IDENTIFICATION

Signal Word: Warning

Hazard Statements: H302 + H332: Harmful if swallowed or inhaled

Precautionary Statements: P261: Avoid breathing dust/fume/gas/mist/vapours/spray
P264: Wash thoroughly after handling
P270: Do not eat, drink or smoke when using this product.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P330: Rinse mouth
P501: Dispose of contents/container in accordance with local/regional/international regulations.
HMIS Health Ratings (0-4):
- Health: 2
- Flammability: 0
- Physical: 1

Section 3: Composition/Information on Ingredients
Chemical characterization: Ceramic
Additional Names: Barium Titanium Oxide
CAS# Description: 12047-27-7
Percentage: 100 wt%
EC number: 234-975-0

Section 4: FIRST AID MEASURES
General Treatment: Seek medical attention if symptoms persist.
Special Treatment: None
Important Symptoms: None
Eye Contact: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
Skin Contact: Wash affected area with mild soap and water. Remove any contaminated clothing.
Inhalation: Remove to fresh air. If required, give artificial respiration. Seek medical advice.
Ingestion: Seek medical attention

Section 5: FIRE FIGHTING MEASURES
Suitable extinguishing Media: No special restrictions - use suitable extinguishing agent for surrounding material and type of fire.
Flammability: Non-Flammable
Special Fire Fighting Procedure: Use full-face, self contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

Section 6: ACCIDENTAL RELEASE MEASURES
Personal Precautions: Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions: Isolate runoff to prevent environmental pollution.

Section 7: HANDLING AND STORAGE
Handling Precautions for safe handling: Wash thoroughly after handling.
Conditions for safe storage, including any incompatibilities: Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in Section 10.

Work/Hygienic Maintenance: 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.

Ventilation: Provide sufficient ventilation to maintain concentration at or below threshold limit.

Section 8: EXPOSURE CONTROL/PERSOAL PROTECTION

Permissible Exposure Limits: 0.5 mg/M³ as Ba, long-term value
Threshold Limit Value: 0.5 mg/m³ as Ba, long-term value
Special Equipment: None
Respiratory Protection: Use a respirator with type P100 (USA) or P3 (EN143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protective Gloves: Nitrile rubber, NBR 0.11 mm thick
Penetration time of glove material: 480 minutes
Eye Protection: Safety glasses or goggles
Body Protection: Protective work clothing. Wear close-toed shoes and long sleeves/pants.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form: Powder, Granules, Pellets, Sputtering target, Custom parts
Color: White
Odor: Odorless
Water Solubility: Insoluble
Boiling Point: N/A
Melting Point: 1620°C
Flash Point: N/A
Autoignition Temperature: N/A
Density: 5.85 g/cc
Molecular Weight: 233.24 g/mol

Section 10: STABILITY AND REACTIVITY

Reactivity: Oxidizing agents
Chemical Stability: Stable under recommended storage conditions
Incompatible Conditions: None
Hazardous Decomposition Products: Barium oxide, Titanium Oxide
Section 11: TOXICOLOGICAL INFORMATION

Potential Health Effects:
Eyes: May cause irritation  
Skin: May cause irritation  
Ingestion: Harmful  
Inhalation: Harmful  
Chronic: N/A  

Signs & Symptoms: N/A  
Aggravated Medical Conditions: N/A  
Median Lethal Dose: N/A  
Carcinogen: N/A  

Section 12: ECOLOGICAL INFORMATION

Aquatic Toxicity: Low  
Persistence Bioaccumulation Toxicity: No  
Very Persistent, Very Bioaccumulative: No  
Notes: N/A  

Section 13: DISPOSAL CONSIDERATIONS
Dispose of in accordance with local, state, national, and international regulations  

Section 14: TRANSPORT INFORMATION

Hazardous: Not Hazardous for transportation  
Hazard Class: N/A  
Packing Group: N/A  
UN Number: N/A  
Proper Shipping Name: N/A
Section 15: REGULATORY INFORMATION
Sec 302 Extremely Hazardous: No
Sec 304 Reportable Quantities: N/A
Sec 313 Toxic Chemicals: Yes

Section 16: OTHER INFORMATION
This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.