

Material Safety Data Sheet

acc. to OSHA and ANSI

• 1 Identification of substance:

• Product details:

• Product name: Barium sulfate

• Stock number: 1142ZJ

• Manufacturer/Supplier:

Nanostructured & Amorphous Materials, Inc.
16840 Clay Road, Suite #113
Houston, TX 77084, USA

• 2 Composition/Data on components:

• Chemical characterization:

Description: (CAS#)

Barium sulfate (CAS# 7727-43-7), 100%

• Identification number(s):

• EINECS Number: 231-784-4

• 3 Hazards identification

• Hazard description: • Not applicable

• Information pertaining to particular dangers for man and environment
Not applicable

• Classification system

• HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

Health (acute effects) = 1

Flammability = 0

Reactivity = 1

• 4 First aid measures

- **After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

- **After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

- **After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

- **After swallowing** Seek medical treatment.

- **5 Fire fighting measures**

- **Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

- **Special hazards caused by the material, its products of combustion or resulting gases:**

In case of fire, the following can be released:

Sulfur dioxide (SO₂)

Toxic metal oxide fume

- **Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

- **6 Accidental release measures**

- **Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

- **Measures for environmental protection:**

Do not allow material to be released to the environment without proper governmental permits.

- **Measures for cleaning/collecting:** Pick up mechanically.

- **Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

- **7 Handling and storage**

- **Handling**
- **Information for safe handling:**
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:**
The product is not flammable
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Unsuitable material for receptacle: aluminum.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

• **8 Exposure controls and personal protection**

- **Additional information about design of technical systems:**
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Barium sulfate

	mg/m ³
ACGIH TLV	10
Belgium TWA	10 (respirable dust)
Ireland TWA	2 (respirable dust)
United Kingdom TWA	2
USA PEL	5 (respirable fraction)
	15 (total dust)

- **Additional information:** No data
- **Personal protective equipment**
- **General protective and hygienic measures**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
- **Breathing equipment:**

Use suitable respirator when high concentrations are present.

- **Protection of hands:** Impervious gloves
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

• **9 Physical and chemical properties:**

• **General Information**

- **Form:** Powder
- **Color:** White
- **Odor:** Odorless

	<u>Value/Range</u>	<u>Unit</u>	<u>Method</u>
• Change in condition			
• Melting point/Melting range:	1580	° C	(dec)
• Boiling point/Boiling range:	Not determined		
• Sublimation temperature / start:	Not determined		
• Flash point:	Not applicable		
• Flammability (solid, gaseous)	Product is not flammable.		
• Ignition temperature:	Not determined		
• Decomposition temperature:	Not determined		
• Danger of explosion: Product does not present an explosion hazard.			
• Explosion limits:			
• Lower:	Not determined		
• Upper:	Not determined		
• Vapor pressure:	Not determined		
• Density:	at 20 ° C	4.5 g/cm ³	
• Solubility in / Miscibility with			
• Water:	at 20 ° C	0.002 g/l	

• **10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:**
Decomposition will not occur if used and stored according to

specifications.

- **Materials to be avoided:** Aluminum/aluminum alloys.
- **Dangerous reactions** Reacts with aluminium at raised temperatures
- **Dangerous products of decomposition:**
Sulfur dioxide
Toxic metal oxide fume

- **11 Toxicological information**

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Powder: irritant effect
- **on the eye:** Powder: irritant effect
- **Sensitization:** No sensitizing effects known.
- **Other information (about experimental toxicology):**
Tumorigenic effects have been observed on tests with laboratory animals.
- **Subacute to chronic toxicity:**
Barium sulfate is essentially insoluble in water and does not show the effects on all forms of muscle that is found in soluble compounds of barium. The presence of soluble barium impurities, however, may increase the toxicity. High dust levels of barium sulfate have caused baritosis, a benign pneumoconiosis. Barium sulfate has caused tumors in laboratory rats via intrapleural route.
- **Additional toxicological information:**
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

- **12 Ecological information:**

- **General notes:**
Do not allow material to be released to the environment without proper governmental permits.

- **13 Disposal considerations**

- **Product:**

- **Recommendation**
Consult state, local or national regulations to ensure proper disposal.
- **Uncleaned packagings:**
- **Recommendation:**
Disposal must be made according to official regulations.

- **14 Transport information**

- **DOT regulations:**
- **Hazard class:** 6.1
- **Identification number:** UN1564
- **Packing group:** III
- **Proper shipping name (technical name):**
Barium compounds, n.o.s., barium sulfate
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** 6.1 Toxic substances
- **Item:** 60c
- **Danger code (Kemler):** 60
- **UN-Number:** 1564
- **Description of goods:** Barium compounds, n.o.s., barium sulfate
- **Maritime transport IMDG:**
- **IMDG Class:** 6.1
- **UN Number:** 1564
- **Packaging group:** III
- **Proper shipping name:** Barium compounds, n.o.s., barium sulfate
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** 6.1
- **UN/ID Number:** 1564
- **Packaging group:** III
- **Proper shipping name:** Barium compounds, n.o.s., barium sulfate

- **15 Regulations**

- **Product related hazard informations:**
Observe the general safety regulations when handling chemicals
- **National regulations**
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance

Inventory.

- **Information about limitation of use:**

For use only by technically qualified individuals.

This product contains barium and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

- **16 Other information:**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.