

SAFETY DATA SHEET

1 PRODUCT AND SUPPLIER IDENTIFICATION

Product Name: Beryllium Nitride
Formula: Be₃N₂
Supplier: Stanford Advanced Materials
23661 Birtcher Dr.
Lake Forest, CA 92630
Telephone: +1 (949) 407-8904
Fax: +1 (949) 812-6690
Emergency: +1 (949) 407-8904
Recommended Uses: Scientific Research

2 HAZARDS IDENTIFICATION

GHS Classification (29 CFR 1910.1200): Skin corrosion/irritation, category 2, Sensitization - skin, category 1B, Carcinogenicity, category 1, Specific target organ toxicity - repeated exposure, category 1.

GHS Label Elements:



Signal Word: Danger

Hazard Statements: H315 Causes skin irritation, H317 May cause an allergic skin reaction, H350 May cause cancer, H372 Causes damage to lungs through prolonged or repeated exposure.

Precautionary Statements: P201 Obtain special instructions before use, P202 Do not handle until all safety precautions have been read and understood, P260 Do not breathe dust/fume/gas/mist/vapors/spray, P264 Wash skin thoroughly after handling, P270 Do not eat, drink or smoke when using this product, P272 Contaminated clothing should not be allowed out of the workplace, P280 Wear protective gloves/protective clothing/eye protection/face protection, P302+P352 IF ON SKIN: wash with plenty of soap and water, P333+P313 If skin irritation or rash occurs: Get medical advice/attention, P308+P313+P314 IF exposed or concerned or if you feel unwell: Get medical advice/attention, P362+P364 Take off contaminated clothing and wash it before reuse, P370+P378 In case of fire: Use Class D or other metal extinguishing agent for extinction; do not use water, P405 Store locked up, P501 Dispose of contents/container in accordance with local, state or federal regulations.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: Beryllium Nitride

CAS#: 1304-54-7
%: >99
EC#: 215-132-6

4 FIRST AID MEASURES

General Measures: Remove patient from area of exposure.

INHALATION: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek medical attention.

INGESTION: Rinse mouth with water. Do not induce vomiting. Seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Thoroughly wash skin cuts or wounds to remove all particulate debris from the wound. Seek medical attention for wounds that cannot be thoroughly cleansed. Treat skin cuts and wounds with standard first aid practices such as cleansing, disinfecting and covering to prevent wound infection and contamination before continuing work. Obtain medical help for persistent irritation. Material accidentally implanted or lodged under the skin must be removed.

EYES: Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention.

Most Important Symptoms/Effects, Acute and Delayed: May cause severe irritation, nausea, diarrhea, vomiting and abdominal pain. See section 11 for more information.

Indication of Immediate Medical Attention and Special Treatment: No other relevant information available.

5 FIREFIGHTING MEASURES

Extinguishing Media: Use suitable extinguishing agent for surrounding materials and type of fire.

Unsuitable Extinguishing Media: No information available.

Specific Hazards Arising from the Material: May emit toxic fumes of beryllium oxide under fire conditions.

Special Protective Equipment and Precautions for Firefighters: Full face, self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Establish a restricted entry zone based on the severity of the spill. Wear appropriate respiratory and protective equipment specified in section 8. Isolate spill area and provide ventilation. Avoid breathing dust or fume. Avoid contact with skin and eyes. Eliminate all sources of ignition.

Methods and Materials for Containment and Cleaning Up: Cleanup spills with a vacuum system utilizing a HEPA filtration system. Special precautions must be taken when changing filters on HEPA vacuum cleaners used to clean up hazardous materials. Caution should be taken to minimize airborne generation of particulate and avoid contamination of air and water. Place in properly labeled closed container for further handling and disposal.

Environmental Precautions: Do not allow to enter drains or to be released to the environment.

7 HANDLING AND STORAGE

Precautions for Safe Handling: Transfer material in closed systems or within a completely hooded containment with local exhaust ventilation. Prevent spillage. Avoid creating dusts. Avoid breathing dust or fumes. Avoid contact with skin and eyes. Prevent contact with clothing. Particulate may enter the body through cuts, abrasions or other wounds on the surface of the skin. Wear gloves when handling this product. Wash thoroughly before eating or smoking. See section 8 for information on personal protection equipment.

Conditions for Safe Storage, Including Any Incompatibilities: Store in tightly-sealed containers. Store in a cool, dry area. Storage containers should be labeled to indicate their contents. Protect from moisture. Do not store together with acids or bases. See section 10 for more information on incompatible materials.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:	OSHA/PEL:	ACGIH/TLV:
Beryllium and beryllium compounds (as Be)	0.002 mg/m ³	0.00005 mg/m ³

Appropriate Engineering Controls: Whenever possible the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure limits. Use vacuum and wet cleaning methods for particulate removal from surfaces. Be certain to de-energize electrical systems as necessary before beginning wet cleaning. Use vacuum cleaners with high efficiency particulate air (HEPA) filters. Do not use compressed air, brooms, or conventional vacuum cleaners to remove particulate from surfaces as this activity can result in elevated exposures to airborne particulate. Follow the manufacturer's instructions when performing maintenance on HEPA filtered vacuums used to clean hazardous materials. 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.

Individual Protection Measures, Such as Personal Protective Equipment:

Respiratory Protection: When potential exposures are above the occupational limits, approved respirators must be used. Exposure to unknown concentrations of fumes or dusts requires the wearing of a pressure-demand self-contained breathing apparatus.

Eye Protection: Safety glasses or goggles

Skin Protection: Wear impermeable gloves, protective work clothing. Protective overgarments or work clothing must be worn by persons who may become contaminated with particulate during work activities. Contaminated work clothing and overgarments must be managed in a controlled manner to prevent secondary exposure to workers of third parties, to prevent the spread of particulate to other areas, and to prevent particulate from being taken home by workers.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Form: Pieces

Color: White, gray or yellow

Odor:	Not determined
Odor Threshold:	Not determined
pH:	N/A
Melting Point:	2200 °C
Boiling Point:	2260 °C (decomposes)
Flash Point:	N/A
Evaporation Rate:	N/A
Flammability:	No data
Upper Flammable Limit:	No data
Lower Flammable Limit:	No data
Vapor Pressure:	No data
Vapor Density:	N/A
Relative Density (Specific Gravity):	2.71 g/cc
Solubility in H₂O:	Decomposes
Partition Coefficient (n-octanol/water):	Not determined
Autoignition Temperature:	No data
Decomposition Temperature:	No data
Viscosity:	N/A

10 STABILITY AND REACTIVITY

Reactivity: Beryllium nitride reacts rapidly with air at 600 oC to give BeO and N₂. Reacts with acids and strong bases to give soluble beryllium compounds and ammonia.

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: No data

Conditions to Avoid: No data

Incompatible Materials: Water, acids, bases, halogens, halogenating agents (e.g., hypochlorite solutions).

Hazardous Decomposition Products: Beryllium oxides, ammonia.

11 TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, skin and eyes.

Symptoms of Exposure: Contact with skin, eyes or lungs may cause severe irritation. Ingestion may cause nausea, diarrhea, vomiting and abdominal pain.

Acute and Chronic Effects:

Beryllium: Some people inhaling low concentrations of beryllium develop chronic beryllium disease, a granulomatous lung disease characterized by dyspnea, cough, reduced pulmonary function, and a variety of other symptoms including weight loss. The lack of a dose-response relationship between the extent of exposure and development of the disease, long latency period between exposure and onset, and the low incidence among beryllium-exposed individuals suggests that the disease is immune mediated.

Nitrides: The nitrides of the alkaline earth metals react with water to form ammonia and the oxide or hydroxide of the metal and therefore may cause irritation and/or burns to moist tissue and mucous

membranes. The nitrides of boron, silicon, and the transition metals are refractory, hard, and resistant to chemical attack, and therefore tend to cause mechanical irritation only.

Acute Toxicity: No data

Carcinogenicity:

Beryllium and beryllium compounds: **NTP:** K - Known to be carcinogenic **IARC:** 1 - Carcinogenic to humans

To the best of our knowledge the chemical, physical and toxicological characteristics of the substance are not fully known.

12 ECOLOGICAL INFORMATION

Ecotoxicity: No data

Persistence and Degradability: No data

Bioaccumulative Potential: No data

Mobility in Soil: No data

Other Adverse Effects: Do not allow material to be released to the environment. No further relevant information available.

13 DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Product: Dispose of in accordance with Federal, State and Local regulations.

Packaging: Dispose of in accordance with Federal, State and Local regulations.

14 TRANSPORT INFORMATION

UN Number: UN1566

UN Proper Shipping Name: Beryllium compound, n.o.s. (Beryllium Nitride)

Transport Hazard Class: 6.1

Packing Group: II

Marine Pollutant: No

15 REGULATORY INFORMATION

TSCA Listed: Yes

DSL Listed: No

Regulation (EC) No 1272/2008 (CLP): Skin corrosion/irritation, category 2, Sensitization - skin, category 1B, Carcinogenicity, category 1, Specific target organ toxicity - repeated exposure, category 1.

WHMIS 2015 Classification: Skin corrosion/irritation, Respiratory or skin sensitization, Carcinogenicity, Specific target organ toxicity - repeated exposure.

HMIS Ratings: Health: 3*(chronic) **Flammability:** 0 **Physical:** 1

NFPA Ratings: Health: 3 **Flammability:** 0 **Instability:** 1

Chemical Safety Assessment: A chemical safety assessment has not been carried out.

16 OTHER INFORMATION

This material safety data sheet is offered solely for your information, consideration, and investigation.

Stanford Advanced Materials provides no warranties, either express or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.