

Beryllium



SAFETY DATA SHEET

1 PRODUCT AND SUPPLIER IDENTIFICATION

Product Name: Beryllium Solid

Formula: Be

Supplier: ESPI Metals
1050 Benson Way
Ashland, OR 97520

Telephone: 800-638-2581

Fax: 541-488-8313

Email: sales@espimetals.com

Emergency: Infotrac 800-535-5053 (US) or 352-323-3500 (24 hour)

Recommended Uses: Scientific Research

2 HAZARDS IDENTIFICATION

GHS Classification (29 CFR 1910.1200): Carcinogenicity, category 1, Specific target organ toxicity - repeated exposure, category 1.

GHS Label Elements:



Signal Word: Danger

Hazard Statements: H350 May cause cancer, H372 Causes damage to lungs through prolonged or repeated inhalation 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 breath dust or fume, P264 Wash skin thoroughly after handling, P270 Do not eat, drink or smoke when using this product, P281 Use personal protective equipment as required, P308+P313 IF exposed or concerned: Get medical advice/attention, P314 Get medical advice/attention if you feel unwell, P405 Store locked up, P501 Dispose of contents/container in accordance with local, state or federal regulations.

NOTE: In the solid form in which it is provided, this material does not pose a health hazard. Subsequent operations performed by the end user, such as exposure to high temperatures, melting or grinding, may produce beryllium oxide dust or fume. ESPI Metals does not warranty this material for any specific application and all precautions must be taken by the end user to prevent and protect against exposure to inhalable particulate. See section 8 for information on

exposure controls and personal protection.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient:	Beryllium
CAS#:	7440-41-7
% :	>99
EC#:	231-150-7

4 FIRST AID MEASURES

General Measures: Under normal handling and use, exposure to solid forms of this material present few health hazards. Subsequent operations such as grinding, melting or welding may produce potentially hazardous dust or fumes.

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 if symptoms persist.

Most Important Symptoms/Effects, Acute and Delayed: May cause irritation. 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 extinguishing media appropriate to the surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific Hazards Arising from the Material: Non-combustible as a solid. 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: In solid form this material poses no health or environmental risk. If spilled material is a particulate, 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: Sweep or scoop solid product and place in a properly labeled closed

container. Cleanup particulate 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. Use only non-sparking tools. 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: Avoid creating dust. Avoid breathing dust or fumes. Provide adequate ventilation if dusts are created. Avoid exposure to high temperature. Avoid contact with skin and eyes. Wash thoroughly before eating or smoking. See section 8 for information on personal protection equipment.

Conditions for Safe Storage, Including Any Incompatibilities: Store in a sealed container. Store in a cool, dry area. See section 10 for more information on incompatible materials.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: Beryllium

OSHA / PEL: 0.002 mg/m³

ACGIH / TLV: 0.00005 mg/m³

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 as necessary. 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: Solid in various forms

Color: Gray metallic

Odor: Not determined

Odor Threshold: Not determined

pH: N/A

Melting Point:	1278±5 °C
Boiling Point:	2970 °C
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):	1.85 g/cc at 20 °C
Solubility in H ₂ O:	Insoluble
Partition Coefficient (n-octanol / water):	Not determined
Autoignition Temperature:	No data
Decomposition Temperature:	No data
Viscosity:	N/A

10 STABILITY AND REACTIVITY

- Reactivity:** No data
- Chemical Stability:** Stable under recommended storage conditions.
- Possibility of Hazardous Reactions:** Contact with acids and strong bases generate flammable hydrogen gas.
- Conditions to Avoid:** Avoid creating or accumulating fines or dusts.
- Incompatible Materials:** Acids, bases.
- Hazardous Decomposition Products:** Beryllium oxides.

11 TOXICOLOGICAL INFORMATION

- Likely Routes of Exposure:** Inhalation, skin, eyes.
- Symptoms of Exposure:** Dust may cause irritation to upper respiratory tract, skin or eyes.
- Acute and Chronic Effects:** 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.
- Acute Toxicity:** No data
- Carcinogenicity:** **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

Shipping Regulations: Not regulated

UN Number: N/A

UN Proper Shipping Name: N/A

Transport Hazard Class: N/A

Packing Group: N/A

Marine Pollutant: No

15 REGULATORY INFORMATION

TSCA Listed: All components are listed.

Regulation (EC) No 1272/2008 (CLP): Carcinogenicity, category 1, Specific target organ toxicity - repeated exposure, category 1.

Canada WHMIS Classification (CPR, SOR/88-66): Carcinogenicity, Specific target organ toxicity - repeated exposure.

HMIS Ratings: Health: 2*(Chronic) **Flammability:** 0 **Physical:** 0

NFPA Ratings: Health: 2 **Flammability:** 0 **Instability:** 0

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

16 OTHER INFORMATION

The information contained in this document is based on the state of our knowledge at the time of publication and is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI Metals makes no representation, warranty, or guarantee of any kind with respect to the information contained in this document or any use of the product based on this information. ESPI Metals shall not be held liable for any damages resulting from handling or from contact with the above product. Users should satisfy themselves that they have all current data relevant to their particular use.

Prepared by: ESPI Metals
Revised / Reviewed: July 2015