



# SAFETY DATA SHEET

**MATERION**

## 1. Identification of the chemical and information about the manufacturer or supplier

### 1.1 Identification of the chemical products

1.1.1 Technical name **Beryllium Hydroxide**

#### Other means of identification

SDS number D03

CAS number 13327-32-7

### 1.1.2 Recommended use of the chemical and restrictions on use

**Recommended use** Scientific research and development  
Other: Manufacture of medical and defense equipment

**Limitations on use** Professional uses: Public domain (administration, education, entertainment, services, craftsmen)  
Casting, grinding or polishing of beryllium-containing alloys by artists;  
Casting, grinding or polishing of beryllium-containing alloys for dental crowns, appliances or prosthetics;  
Casting, grinding or polishing of beryllium-containing alloys for jewelry.  
Consumer uses: Private households (= general public = consumers)

### 1.2 Manufacturer/Importer/Supplier/Distributor information

#### 1.2.1 Manufacturer

**Company name** Materion Brush Inc.

1.2.2 Address (post and legal) 6070 Parkland Boulevard  
Mayfield Heights, OH 44124  
United States

**Website** www.materion.com

**Contact person** Theodore Knudson

#### 1.2.3 Telephone, including Emergency consultations and time limits

**Telephone** 1.216.383.4019 Not available.

**Emergency phone  
number** 1.216.383.4019

#### 1.2.4 Fax

1.2.5 E-mail ehs@materion.com

## 2. Hazard(s) identification

### 2.1. Hazard identification of chemical product as a whole (classification according to GOST 12.1.007-76 and GHS)

**Classification according to  
GOST 12.1.007-76** The mixture has been assessed and/or tested for its physical, health and environmental hazards  
and the following classification applies.

#### GHS classification

**Physical hazards** Not classified.

**Health hazards** Sensitization, skin

Carcinogenicity Category 1

Specific target organ toxicity, repeated  
exposure Category 1 (Respiratory system)

**Environmental hazards** Not classified.

### 2.2 Labeling elements in compliance with GOST 31340-2013

2.2.1 Signal word Danger

#### 2.2.2 Symbols



#### 2.2.3 Hazard statement

H350i May cause cancer by inhalation.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H372 Causes damage to organs (respiratory system) through prolonged or repeated exposure.

## Precautionary statement

### Prevention

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.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P284 Wear respiratory protection.

### Response

P302 + P350 If on skin: Wash with plenty of water.  
P304 + P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
P308 + P313 If exposed or concerned: Get medical advice/attention.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.  
P363 Wash contaminated clothing before reuse.

### Storage

P405 Store locked up.

### Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### Other hazards

None known.

### Supplemental information

For further information, please contact the Product Stewardship Department at +1.216.383.4019.

## 3. Composition/information on ingredients

### 3.1 Information on product as a whole

3.1.1 Chemical name (IUPAC) None.  
3.1.2 Chemical formula Be.H2-O2 (13327-32-7)  
3.1.3 General description of the composition (taking into account the brand assortment; preparation method) Not available.

### 3.2 Components

#### Hygienic standards in the working area

Components	Concentration by weight (%)	MAC, mg/m <sup>3</sup>	TSEL, mg/m <sup>3</sup>	Hazard classification	CAS-No.	EC No.
Beryllium Hydroxide	100	0.003 Aerosol.	0.001 Aerosol.	1	13327-32-7	236-368-6

## 4. First-aid measures

### 4.1. Observed symptoms

4.1.1 In case of exposure via inhalation May cause sensitization by inhalation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause damage to organs (respiratory system) through prolonged or repeated exposure.  
4.1.2 In contact with skin May cause an allergic skin reaction.  
4.1.3 In contact with eyes Harmful in contact with eyes.  
4.1.4 In case of exposure via ingestion Not likely, due to the form of the product.

## 4.2 First-aid measures to be provided to victims

- 4.2.1 In case of exposure via inhalation** If symptoms develop move victim to fresh air. For breathing difficulties, oxygen may be necessary. Breathing difficulty caused by inhalation of particulate requires immediate removal to fresh air. If breathing has stopped, perform artificial respiration and obtain medical help.
- 4.2.2 In contact with skin** Take off contaminated clothing and wash before reuse. 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.
- 4.2.3 In contact with eyes** Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention if symptoms persist.
- 4.2.4 In case of exposure via ingestion** If swallowed, seek medical advice immediately and show this container or label. Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.
- 4.2.5 Contraindications** Not available.

### General advice

If exposed or concerned: get medical attention/advice. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

## 5. Fire-fighting and explosion safety measures and means

- 5.1 General characteristics of fire-explosion properties** No unusual fire or explosion hazards noted.
- 5.2 Fire-explosion indicators** Not available.
- 5.3 Combustion and/or thermal destruction products and hazards arising from these** During fire, gases hazardous to health may be formed.
- 5.4 Recommended extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).
- 5.5 Forbidden extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.
- 5.6 Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
- 5.7 Specific extinguishing methods** Use standard firefighting procedures and consider the hazards of other involved materials.
- Special fire fighting procedures** Use water spray to cool unopened containers.

## 6. Accident and emergency prevention and response measures and their consequences

### 6.1 Measures to prevent harmful effects on people, environment, buildings, constructions, etc. in case of accidents and emergencies

- 6.1.1 General required actions in case of an accident or emergency** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.
- 6.1.2 Personal protection equipment in case of the accident** Keep unnecessary personnel away.

### 6.2 Procedures for the elimination of accidents and emergencies

- 6.2.1 Procedures in case of leaks, spills, splashes** Not available.
- 6.2.2 Actions in case of fire** Not available.

**Methods and materials for containment and cleaning up**

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk. Absorb in vermiculite, dry sand or earth and place into containers. Collect dust using a vacuum cleaner equipped with HEPA filter.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Minimize dust generation and accumulation. Prevent product from entering drains. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

**Environmental precautions**

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

**7. Storage and handling requirements of chemicals during loading and unloading**

**7.1 Safety precautions when handling chemical products**

**7.1.1 Technical safety measures** No specific recommendations.

**7.1.2 Environmental protection measures** Avoid release to the environment.

**7.1.3 Recommended safe handling and transportation advice** Avoid prolonged exposure. Should be handled in closed systems, if possible. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

**Local and general ventilation** Use only outdoors or in a well-ventilated area.

**7.2 Chemical storage requirements**

**7.2.1 Terms and conditions for safe storage** Store locked up. Keep container tightly closed. Store in a well-ventilated place.

**7.2.2 Packaging** Store in original tightly closed container.

**7.3 Safety measures and storage requirements at domestic use**

No specific recommendations.

**8. Equipment for monitoring exposure and personal protective equipment**

**8.1 Parameters of the working area that require monitoring**

**Occupational exposure limits**

Hygiene Norm GN 2.2.5.1313-03. Executive No. 76 of 30 April 2003. Maximum allowable concentration (MAC) of harmful substances in the air of working zones, as amended

Material	Type	Value	Form
Beryllium Hydroxide (CAS 13327-32-7)	Ceiling	0,003 mg/m3	Aerosol.
	TWA	0,001 mg/m3	Aerosol.

**8.2 Measures to ensure the content of harmful substances in the working area below the exposure level concentration**

Not available.

<b>Appropriate engineering controls</b>	<p><b>VENTILATION:</b> Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.</p> <p><b>WET METHODS:</b> Machining operations are usually performed under a liquid lubricant/coolant flood which assists in reducing airborne particulate. However, the cycling through of machine coolant containing finely divided particulate in suspension can result in the concentration building to a point where the particulate may become airborne during use. Certain processes such as sanding and grinding may require complete hooded containment and local exhaust ventilation. Prevent coolant from splashing onto floor areas, external structures or operators' clothing. Utilize a coolant filtering system to remove particulate from the coolant.</p> <p><b>WORK PRACTICES:</b> Develop work practices and procedures that prevent particulate from coming in contact with worker skin, hair, or personal clothing. If work practices and/or procedures are ineffective in controlling airborne exposure or visual particulate from deposition on skin, hair, or clothing, provide appropriate cleaning/washing facilities. Procedures should be written that clearly communicate the facility's requirements for protective clothing and personal hygiene. These clothing and personal hygiene requirements help keep particulate from being spread to non-production areas or from being taken home by the worker. Never use compressed air to clean work clothing or other surfaces.</p> <p>Fabrication processes may leave a residue of particulate on the surface of parts, products or equipment that could result in employee exposure during subsequent material handling activities. As necessary, clean loose particulate from parts between processing steps. As a standard hygiene practice, wash hands before eating or smoking.</p> <p><b>HOUSEKEEPING:</b> 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). 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.</p>
<b>8.3 Worker personal protective equipment</b>	
<b>8.3.1 General recommendations</b>	Not available.
<b>8.3.2 Respiratory protection</b>	When airborne exposures exceed or have the potential to exceed the occupational exposure limits, approved respirators must be used as specified by an Industrial Hygienist or other qualified professional. Respirator users must be medically evaluated to determine if they are physically capable of wearing a respirator. Quantitative and/or qualitative fit testing and respirator training must be satisfactorily completed by all personnel prior to respirator use. Users of tight fitting respirators must be clean shaven on those areas of the face where the respirator seal contacts the face. Use pressure-demand airline respirators when performing jobs with high potential exposures such as changing filters in a baghouse air cleaning device.
<b>8.3.3 Protective equipment</b>	
<b>Eye/face protection</b>	Wear approved safety glasses, goggles, face shield and/or welder's helmet when risk of eye injury is present, particularly during operations that generate dust, mist or fume.
<b>Hand protection</b>	Wear gloves to prevent contact with particulate or solutions. Wear gloves to prevent metal cuts and skin abrasions during handling.
<b>Other</b>	Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Protective overgarments or work clothing must be worn by persons who may become contaminated with particulate during activities. Skin contact with this material may cause, in some sensitive individuals, an allergic dermal response. Particulate that becomes lodged under the skin has the potential to induce sensitization and skin lesions.
<b>Thermal hazards</b>	Not applicable.
<b>8.3.4 Personal protection equipment in case of domestic use</b>	Not applicable.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

### 9.1 Physical appearance

Physical state	Solid.
Form	Wet cake
Color	White.

Odor None.

Odor threshold Not applicable.

### 9.2 Parameters characterizing basic properties of the product

pH Not applicable.

Melting point/freezing point Not applicable.

Initial boiling point and boiling range Not applicable.

Flash point Not applicable.

Auto-ignition temperature Not applicable.

Decomposition temperature Not applicable.

#### Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not applicable.

Flammability limit - upper (%) Not applicable.

Explosive limit - lower (%) Not applicable.

Explosive limit - upper (%) Not applicable.

Vapor pressure Not applicable.

Vapor density Not applicable.

Density 1,92 g/cm<sup>3</sup> estimated

Viscosity Not applicable.

#### Solubility(ies)

Solubility (water) Not applicable.

Solubility (other) Soluble in acids and strong bases.

Partition coefficient (n-octanol/water) Not available.

#### Other data

Explosive properties Not explosive.

Evaporation rate Not applicable.

Flammability (solid, gas) None known.

Molecular formula Be.H<sub>2</sub>-O<sub>2</sub>

Molecular weight 43,03 g/mol

Oxidizing properties Not oxidizing.

Partition coefficient (oil/water) Not applicable.

Relative density Not applicable.

Specific gravity 1,92

## 10. Stability and reactivity

10.1 Chemical stability Material is stable under normal conditions.

Hazardous decomposition products No hazardous decomposition products are known.

10.2 Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

10.3 Conditions to avoid Avoid dust formation. Contact with acids. Contact with alkalis.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Incompatible materials Strong acids, alkalies and oxidizing agents.

## 11. Toxicological information

11.1 General exposure characteristics	Respiratory disorder.
11.2 Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
11.3 Affected/target organs, tissues and systems of humans	
Specific target organ toxicity - single exposure	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Specific target organ toxicity - repeated exposure	May cause damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.
11.4 Information on health hazards in case of direct exposure to the product and its effect	
Effect on upper respiratory tract irritation	May cause damage to organs (respiratory system) through prolonged or repeated exposure.
Respiratory or skin sensitization	
<b>Hygiene Norm GN 2.2.5.1313-03. Executive No. 76 of 30 April 2003. Maximum allowable concentration (MAC) of harmful substances in the air of working zones, as amended</b>	
Beryllium Hydroxide (CAS 13327-32-7)	Allergenic.
Respiratory sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization	May cause an allergic skin reaction.
Skin corrosion/irritation	May cause allergic skin reaction.
Serious eye damage/eye irritation	Harmful in contact with eyes.
Aspiration hazard	Due to lack of data the classification is not possible.
11.5 Information on long-term hazardous health effects	
Carcinogenicity	Cancer hazard.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	
Beryllium Hydroxide (CAS 13327-32-7)	1 Carcinogenic to humans.
<b>Sanitary-Epidemiological Rules, 1.2.2353-08, Chemical substances, mixtures and products which are carcinogenic factors, 21 April 2008</b>	
Beryllium Hydroxide (CAS 13327-32-7)	Inhalation
Reproductive toxicity	Not classified.
Mutagenicity	Due to lack of data the classification is not possible.
Cumulativeness	Not available.
Chronic effects	May cause damage to organs through prolonged or repeated exposure.
11.6 Acute toxicity data	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction.
Further information	Symptoms may be delayed.

## 12. Environmental impact information

12.1 General description of the impact on the environment	Very toxic to aquatic organisms. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
12.2 Routes of exposure to environment	Not available.
12.3 The most important characteristics of the environmental impact	
12.3.1 Hygienic standards	Not available.
12.3.2 Ecotoxicity	No ecotoxicity data noted for the ingredient(s)
12.3.3 Biomigration and transformation of the environment due to the biodegradation or other processes	
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	Not available.
Mobility in soil	Not available.
Other adverse effects	Not available.

### 13. Recommendations for waste (residues) disposal

**13.1 Safety precautions when handling the waste generated during use, storage, transportation**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**13.2 Information on the location and disposal methods, recycling or disposal of product waste, including packaging**

Dispose in accordance with all applicable regulations.

**13.3 Recommendation on the waste disposal generated during its domestic use**

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**Waste from residues / unused products**

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

### 14. Transport information

#### ADR

UN number	UN1566
UN proper shipping name	BERYLLIUM COMPOUND, N.O.S.
Transport hazard class(es)	
Class	6.1(PGI, II)
Subsidiary risk	-
Label(s)	6.1
Hazard No. (ADR)	60
Tunnel restriction code	D/E
Packing group	II
Environmental hazards	No.
Special precautions for user	Not available.

#### IATA

UN number	UN1566
UN proper shipping name	Beryllium compound, n.o.s.
Transport hazard class(es)	
Class	6.1(PGI, II)
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	6L
Special precautions for user	Not available.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

#### IMDG

UN number	UN1566
UN proper shipping name	BERYLLIUM COMPOUND, N.O.S.
Transport hazard class(es)	
Class	6.1(PGI, II)
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-A
Special precautions for user	Not available.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.





## 15. National and international regulatory information

### 15.1 National legislation

**15.1.1 Laws of the Russian Federation** Not available.

**15.1.2 Information about the documentation, regulatory requirements for the protection of human health and environment**

Sanitary-Epidemiological Rules, 1.2.2353-08, Chemical substances, mixtures and products which are carcinogenic factors, 21 April 2008

Beryllium Hydroxide (CAS 13327-32-7)

Inhalation

### 15.2 International Conventions and Agreements

#### Stockholm Convention

Not applicable.

#### Rotterdam Convention

Not applicable.

#### Montreal Protocol

Not applicable.

#### Kyoto protocol

Not applicable.

#### Basel Convention

Not applicable.

### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information

### 16.1 Information on revision of the SDS

<b>Issue date</b>	11-11-2015
<b>Revision date</b>	06-24-2021
<b>Version #</b>	03

<b>Previous SDS number</b>	Revised information in Section 1. Revised information in Section 8.
<b>Revision information</b>	Identification of the chemical and information about the manufacturer or supplier: Recommended use Physical & Chemical Properties: Multiple Properties Physical and chemical properties: Flammability (solid, gas) Physical and chemical properties: Odor Other information: Previous SDS number
<b>16.2 List of references used in compiling the safety data sheet</b>	GOST 30333-2007 Chemical production safety passport. General requirements. GOST 31340-2013 Labeling of chemicals. General requirements. GOST 32419-2013 Classification of chemical products. General requirements. GOST 32424-2013 Classification of chemicals for environmental hazards. General principles. GOST 12.1.007-76 Occupational safety standard system. Noxious substances. Classification and general safety requirements. GOST 12.1.044-89. Occupational safety standards system. Fire and explosion hazard of substances and materials. Nomenclature of substances and materials. Nomenclature of indices and methods of their determination. GOST 19433-88. Dangerous goods. Classification and marking. GOST 12.1.004-91. Occupational safety standards system. Fire safety. General requirements.
<b>List of abbreviations</b>	Not available.
<b>Disclaimer</b>	This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.