

# SAFETY DATA SHEET

## 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 Solid**

#### Other means of identification

SDS number                      M10

CAS number                      7440-41-7

Synonyms                      Metallic Beryllium, Be, Glucinium \* Metallic Beryllium, Glucinium, I220H, IF-1®, S200F, S200FH, S200FC, SR200, S65, PS-200®, PF10, PF-60®, O-30, O-30H, I-70, I-70H, UHP Beryllium, ,9999 Beryllium, B-26D, Be, IS-50M®

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

**Recommended use**      Industrial uses: Uses of substances as such or in preparations at industrial sites  
Offshore industries  
Manufacture of basic metals, including alloys  
Manufacture of computer, electronic and optical products, electrical equipment  
General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment  
Electricity, steam, gas water supply and sewage treatment  
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**              Carcinogenicity                      Category 1B  
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.

H372

Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.

## Precautionary statement

### Prevention

	Minimize dust generation and accumulation.
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.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P285	In case of inadequate ventilation 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/doctor.
P363	Wash contaminated clothing before reuse.

### Storage

P405	Store locked up.
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### Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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### 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 (7440-41-7)
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	100	0.003 Aerosol.	0.001 Aerosol.	1	7440-41-7	231-150-7

Class 1 (extremely hazardous substance)

## 4. First-aid measures

### 4.1. Observed symptoms

4.1.1 In case of exposure via inhalation	May cause damage to organs (respiratory system) through prolonged or repeated exposure.
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- 4.1.2 In contact with skin Not likely, due to the form of the product.
- 4.1.3 In contact with eyes Not likely, due to the form of the product.
- 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. As supplied, there is no immediate medical risk with beryllium products in article form. First aid measures provided are related to particulate containing beryllium.

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

- 5.1 General characteristics of fire-explosion properties Not available.
- 5.2 Fire-explosion indicators Not available.
- 5.3 Combustion and/or thermal destruction products and hazards arising from these Not available.
- 5.4 Recommended extinguishing media The product is non-combustible. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- 5.5 Forbidden extinguishing media Do not use water to extinguish fires around operations involving molten metal due to the potential for steam explosions.
- 5.6 Special protective equipment for firefighters Firefighters should wear full protective clothing including self contained breathing apparatus. Wear suitable protective equipment.
- 5.7 Specific extinguishing methods Pressure-demand self-contained breathing apparatus must be worn by firefighters or any other persons potentially exposed to the particulate released during or after a fire.
- Special fire fighting procedures Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.

### 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 In solid form this material poses no special clean-up problems. Wear appropriate protective equipment and clothing during clean-up.
- 6.1.2 Personal protection equipment in case of the accident Not available.

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

- 6.2.1 Procedures in case of leaks, spills, splashes Clean up in accordance with all applicable regulations.
- 6.2.2 Actions in case of fire Not available.

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

Clean up in accordance with all applicable regulations.

**Environmental precautions**

Avoid release to the environment. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

## 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**

Do not handle until all safety precautions have been read and understood. Do not breathe dust. Avoid contact with skin. Avoid prolonged exposure. Avoid contact during pregnancy/while nursing.

**Local and general ventilation**

In case of insufficient ventilation, wear suitable respiratory equipment.

### 7.2 Chemical storage requirements

**7.2.1 Terms and conditions for safe storage**

Store locked up.

**7.2.2 Packaging**

Keep in original 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 (CAS 7440-41-7)	Ceiling	0,003 mg/m <sup>3</sup>	Aerosol.
	TWA	0,001 mg/m <sup>3</sup>	Aerosol.

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

Not available.

**Appropriate engineering controls**

Explosion-proof general and local exhaust ventilation. Good general ventilation 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.

Ensure adequate ventilation, especially in confined areas.

### 8.3 Worker personal protective equipment

**8.3.1 General recommendations**

Use personal protective equipment as required.

**8.3.2 Respiratory protection**

Wear positive pressure self-contained breathing apparatus (SCBA). 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.

**8.3.3 Protective equipment**

**Eye/face protection**

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 metal cuts and skin abrasions during handling.
<b>Other</b>	Protective overgarments or work clothing must be worn by persons who may become contaminated with particulate during activities.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>8.3.4 Personal protection equipment in case of domestic use</b>	The product is not intended for domestic use.
<b>General hygiene considerations</b>	Observe any medical surveillance requirements. When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### 9.1 Physical appearance

<b>Physical state</b>	Solid.
<b>Form</b>	Various shapes.
<b>Color</b>	Grey
<b>Odor</b>	None.
<b>Odor threshold</b>	Not applicable.

### 9.2 Parameters characterizing basic properties of the product

<b>pH</b>	Not applicable
<b>Melting point/freezing point</b>	2348,6 °F (1287 °C)
<b>Initial boiling point and boiling range</b>	5378 °F (2970 °C)
<b>Flash point</b>	Not applicable
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Explosive limit - lower (%)</b>	Not applicable.
<b>Explosive limit - upper (%)</b>	Not applicable.
<b>Vapor pressure</b>	6,67 hPa estimated
<b>Vapor density</b>	Not applicable
<b>Density</b>	1,85 g/cm <sup>3</sup> 2 estimated
<b>Viscosity</b>	Not applicable.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not applicable.
<b>Partition coefficient (n-octanol/water)</b>	Not applicable.
<b>Other data</b>	
<b>Evaporation rate</b>	Not applicable.
<b>Molecular formula</b>	Be
<b>Molecular weight</b>	9,01 g/mol
<b>Relative density</b>	Not applicable.
<b>Specific gravity</b>	1,85 estimated

## 10. Stability and reactivity

<b>10.1 Chemical stability</b>	Material is stable under normal conditions.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.
<b>10.2 Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>10.3 Conditions to avoid</b>	Avoid dust formation. Contact with acids. Contact with alkalis.
<b>Possibility of hazardous reactions</b>	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.
11.3 Affected/target organs, tissues and systems of humans	
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	May cause damage to organs (respiratory system) through prolonged or repeated exposure.
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	
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	
Beryllium (CAS 7440-41-7)	Allergenic.
Respiratory sensitization	May cause damage to organs (respiratory system) through prolonged or repeated exposure.
Skin sensitization	Not a skin sensitizer.
Skin corrosion/irritation	Not likely, due to the form of the product.
Serious eye damage/eye irritation	Not likely, due to the form of the product.
Aspiration hazard	Not an aspiration hazard.
11.5 Information on long-term hazardous health effects	
Carcinogenicity	Cancer hazard.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Beryllium (CAS 7440-41-7)	1 Carcinogenic to humans.
Sanitary-Epidemiological Rules, 1.2.2353-08, Chemical substances, mixtures and products which are carcinogenic factors, 21 April 2008	
Beryllium (CAS 7440-41-7)	Inhalation
Reproductive toxicity	Not classified.
Mutagenicity	Due to lack of data the classification is not possible.
Cumulativeness	Not available.
Chronic effects	Prolonged exposure may cause chronic effects.
11.6 Acute toxicity data	Based on available data, the classification criteria are not met.
Further information	Symptoms may be delayed.

## 12. Environmental impact information

12.1 General description of the impact on the environment	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

<b>13.1 Safety precautions when handling the waste generated during use, storage, transportation</b>	Material should be recycled if possible. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.
<b>13.2 Information on the location and disposal methods, recycling or disposal of product waste, including packaging</b>	Not available.
<b>13.3 Recommendation on the waste disposal generated during its domestic use</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.
<b>Waste from residues / unused products</b>	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

Not regulated as dangerous goods.

#### IATA

Not regulated as dangerous goods.

#### IMDG

Not regulated as dangerous goods.

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

### 15. National and international regulatory information

#### 15.1 National legislation

**15.1.1 Laws of the Russian Federation** On technical regulation.  
On sanitary and epidemiological welfare of the population.  
On Environmental Protection.  
On Air Protection.

#### 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 (CAS 7440-41-7)

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)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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

Issue date	10-15-2020
Revision date	05-04-2021
Version #	02
Previous SDS number	Revised information in Section 16.
Revision information	Hazard(s) identification: Prevention Equipment for monitoring exposure and personal protective equipment: Appropriate engineering controls Other information: Further information Other information: Previous SDS number

### 16.2 List of references used in compiling the safety data sheet

Further information	Not available.
List of abbreviations	Transportation Emergency Call Chemtrec at: International: 703.741.5970 Spain: 900.868.538 Switzerland: 0800.564.402

List of abbreviations Not available.