



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 Oxide Ceramic Products in Article Form**

Other means of identification

SDS number C10

Synonyms Beryllium Oxide, Beryllia, Thermalox® 995, BW 1000®, BW3250®, Thermalox® CR

1.1.2 Recommended use of the chemical and restrictions on use

Recommended use Manufacture of computer, electronic and optical products, electrical equipment

Limitations on use Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
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 L. 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
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 1B

Specific target organ toxicity, single exposure

Category 3 respiratory tract irritation

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



2.2.3 Hazard statement

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

H350i May cause cancer by inhalation.

H372

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

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.
P285	In case of inadequate ventilation wear respiratory protection.

Response

P304 + P340	If inhaled: Remove person to fresh air and keep comfortable for breathing.
P302 + P350	If on skin: Wash with plenty of water.
P308 + P311	If exposed or concerned: Call a poison center/doctor.
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)	Beryllium Oxide Ceramic Products in Article Form
3.1.2 Chemical formula	Not applicable.
3.1.3 General description of the composition (taking into account the brand assortment; preparation method)	Not applicable.

3.2 Components

Components	Concentration by weight (%)	Hygienic standards in the working area			CAS-No.	EC No.
		MAC, mg/m ³	TSEL, mg/m ³	Hazard classification		
Beryllium Oxide Ceramic Products in Article Form	100				Alloy	215-133-1

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.
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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 oxide ceramic products in article form. First aid measures provided are related to particulate containing beryllium oxide.

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	Obtain special instructions before use. Minimize dust generation and accumulation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not taste or swallow. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.
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. Use personal protection recommended in Section 8 of the SDS.
Local and general ventilation	Use only outdoors or in a well-ventilated area. 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. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Keep out of the reach of children.
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	No exposure limits noted for ingredient(s).
8.2 Measures to ensure the content of harmful substances in the working area below the exposure level concentration	Not available.
Appropriate engineering controls	Ensure adequate ventilation, especially in confined areas. Whenever possible, the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne particulate. Where utilized, exhaust inlets to the ventilation system must be positioned as close as possible to the source of airborne generation. Avoid disruption of the airflow in the area of a local exhaust inlet by equipment such as a man-cooling fan. Check ventilation equipment regularly to ensure it is functioning properly. Provide training on the use and operation of ventilation to all users. Use qualified professionals to design and install ventilation systems.
8.3 Worker personal protective equipment	
8.3.1 General recommendations	Not available.
8.3.2 Respiratory protection	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.
Hand protection	Wear gloves to prevent contact with particulate or solutions. Wear gloves to prevent metal cuts and skin abrasions during handling.
Other	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.
Thermal hazards	Not applicable.
8.3.4 Personal protection equipment in case of domestic use	Not applicable.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

9.1 Physical appearance

Physical state	Solid.
Form	Various shapes.
Color	White.

Odor Not applicable.

Odor threshold Not applicable.

9.2 Parameters characterizing basic properties of the product

pH Not applicable.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

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 6,67 kPa at 25°C estimated

Vapor density Not applicable.

Density Not available.

Viscosity Not applicable.

Solubility(ies)

Solubility (water) Not applicable.

Solubility (other) Not applicable.

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

Other data

Explosivity Not applicable.

Evaporation rate Not applicable.

Flammability (solid, gas) Not applicable.

Relative density Not applicable.

Specific gravity 1,85 estimated

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

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.

Not listed.

Respiratory sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization May cause an allergic skin reaction.

Skin corrosion/irritation Not likely, due to the form of the product.

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.

Reproductive toxicity Not classified.

Mutagenicity Due to lack of data the classification is not possible.

Cumulativeness Not available.

Chronic effects Hazardous by OSHA criteria. 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 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.

13.2 Information on the location and disposal methods, recycling or disposal of product waste, including packaging Not available.

13.3 Recommendation on the waste disposal generated during its domestic use

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.

Waste from residues / unused products

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 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

Not listed.

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.

Not listed.

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)	No
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)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*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	04-20-2017
Version #	01
Previous SDS number	Not applicable.
Revision information	Product and Company Identification: Product and Company Identification GHS: Classification

16.2 List of references used in compiling the safety data sheet

Not available.

Further information

Transportation Emergency
Call Chemtrec at:
Domestic: 800.424.9300
International: 703.527.3887

List of abbreviations

Not available.

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