1. Chemical and company identification

Name of chemical (Product name)	**Copper Beryllium Wrought Alloy**

Supplier's company name, address and phone number

Company name	Materion Brush Inc.
Address	6070 Parkland Boulevard Mayfield Heights, OH 44124 United States
Contact person	Theodore Knudson
Telephone	+1.216.383.4019
e-mail address	ehs@materion.com
Emergency telephone number	+1.216.383.4019
Reference number	A10

2. Hazards identification

GHS classification

Physical hazards	The product is not classified according to GHS.	
Health hazards	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Carcinogenicity	Category 1
	Specific target organ toxicity, repeated exposure	Category 1 (Respiratory system)
Environmental hazards	The product is not classified according to GHS.	

GHS label elements

Pictograms

Signal words	Danger
Hazard statement	May cause cancer by inhalation. May cause allergic skin reaction. May cause damage to organs (respiratory system) through prolonged or repeated exposure. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause cancer. Causes damage to organs (Respiratory system) through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Do not breathe dust/fume. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.
Response	If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Call a poison center/doctor. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a poison center/doctor. Wash contaminated clothing before reuse. Collect spillage.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards which do not result in classification	None known.
Supplemental information	For further information, please contact the Product Stewardship Department at +1.216.383.4019.

Main symptoms and emergency overview

Main symptoms Sensitization. Coughing. Discomfort in the chest. Difficulty in breathing. Shortness of breath. Skin irritation. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

Emergency overview DANGER

Fatal if inhaled. Very toxic. Harmful if absorbed through skin. Harmful in contact with eyes. Causes damage to organs. Cancer hazard. May cause sensitization by inhalation and skin contact. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Possible reproductive hazard. Danger of serious damage to health by prolonged exposure. Dangerous for the environment if discharged into watercourses.

3. Composition/information on ingredients

Substance or mixture Mixture

Components	CAS Number	Gazette notification ENCS no.	Gazette notification ISHL no.	Concentration (%)
Copper	7440-50-8			96.3 - 99.5
Cobalt	7440-48-4			0 - 2.7
Nickel	7440-02-0			0 - 2.2
Beryllium	7440-41-7			0.15 - 2
Zirconium	7440-67-7			0 - 0.3

Synonym(s) Beryllium Copper, Copper Beryllium, BeCu, CuBe, Alloy 10, Alloy 10X (C17500); Alloy 165 (17000); Alloy 170; Alloy 171 (C17450), Alloy C717 (C71700), Brush 60®, BrushForm® 47, BrushForm® 65 (C17460); Alloy 174 (C17400), (C17410), (C17420); Alloy 25, Alloy 190, BrushForm® 290 (C17200); Alloy 3 (C17510); Alloy 310; Alloy 390®; Alloy 390E, MoldMAX®, PROtherm®, WeldPak®, EtchMet, Alloy 172

Chemical formula Cu (7440-50-8), Co (7440-48-4), Ni (7440-02-0), Be (7440-41-7), Zr (7440-67-7)

4. First aid measures

If inhaled If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a poison center or doctor/physician. Breathing difficulty caused by inhalation of particulate requires immediate removal to fresh air. If breathing has stopped, perform artificial respiration and obtain medical help.

If on skin Remove contaminated clothing immediately and wash skin with soap and water. Take off contaminated clothing and wash before reuse. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. 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.

If in eyes Rinse with water. Get medical attention if irritation develops and persists. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention if symptoms persist.

If swallowed If swallowed, seek medical advice immediately and show this container or label. Rinse mouth. Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed May cause allergic skin reaction. May cause allergic respiratory reaction. Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

Protection of first-aid responders If exposed or concerned: get medical attention/advice. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. 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.

Notes to physician	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. Treatment of Chronic Beryllium Disease: There is no known treatment which will cure chronic beryllium disease. Prednisone or other corticosteroids are the most specific treatment currently available. They are directed at suppressing the immunological reaction and can be effective in diminishing signs and symptoms of chronic beryllium disease. In cases where steroid therapy has had only partial or minimal effectiveness, other immunosuppressive agents, such as cyclophosphamide, cyclosporine, or methotrexate, have been used. In view of the potential side effects of all the immunosuppressive medications, including steroids such as prednisone, they should be used only under the direct care of a physician. Other treatment, such as oxygen, inhaled steroids or bronchodilators, may be prescribed by some physicians and can be effective in selected cases. In general, treatment is reserved for cases with significant symptoms and/or significant loss of lung function. The decision about when and with what medication to treat is a judgment situation for individual physicians. In their 2014 official statement on the Diagnosis and Management of Beryllium Sensitivity and Chronic Beryllium Disease, the American Thoracic Society states that “it seems prudent for workers with BeS to avoid all future occupational exposure to beryllium.”

5. Fire-fighting measures

Extinguishing media	Powder. Dry sand. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. The product is non-combustible.
Extinguishing media to avoid	Do not use water to extinguish fires around operations involving molten metal due to the potential for steam explosions.
Specific hazards	During fire, gases hazardous to health may be formed.
Special fire fighting procedures	Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.
Protection of fire-fighters	Firefighters should wear full protective clothing including self contained breathing apparatus. Wear suitable protective equipment.
General fire hazards	No unusual fire or explosion hazards noted.
Specific 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.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. 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. For personal protection, see section 8 of the SDS. In solid form this material poses no special clean-up problems.
Environmental precautions	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Methods and materials for containment and cleaning up	This product is miscible in water. Prevent entry into waterways, sewer, basements or confined areas. Clean up in accordance with all applicable regulations. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation)	Provide appropriate exhaust ventilation at places where dust is formed.
Safe handling advice	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. Use personal protection recommended in Section 8 of the SDS.
Contact avoidance measures	For further information, please refer to section 10 of the SDS.

Hygiene measures Observe any medical surveillance requirements. 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. Contaminated work clothing should not be allowed out of the workplace.

Storage

Safe storage conditions Store locked up. Keep container tightly closed. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

Safe packaging materials Store in original tightly closed container.

8. Exposure controls/personal protection

Control parameters

WET METHODS: 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.

WORK PRACTICES: 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.

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.

HOUSEKEEPING: 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.

Occupational exposure limits

Japan. OELs - ISHL. (Workplace Environment Assessment Standards)

Components	Type	Value
Beryllium (CAS 7440-41-7)	TLV	0.001 mg/m3
Cobalt (CAS 7440-48-4)	TLV	0.02 mg/m3
Nickel (CAS 7440-02-0)	TLV	0.1 mg/m3

Japan. OELs - JSOH (Japan Society of Occupational Health: Recommendation of Occupational Exposure Limits)

Components	Type	Value
Beryllium (CAS 7440-41-7)	TWA	0.002 mg/m3
Cobalt (CAS 7440-48-4)	TWA	0.05 mg/m3
Nickel (CAS 7440-02-0)	TWA	1 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Beryllium (CAS 7440-41-7)	TWA	0.00005 mg/m3 (as beryllium)	Inhalable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Zirconium (CAS 7440-67-7)	TWA	5 mg/m3	

Biological limit values

Japan. BELs - JSOH (Japan Society of Occupational Health: Recommendation of Occupational Exposure Limits Based on Biological Monitoring)

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	35 µg/l	Cobalt	Urine	*
	3 µg/l	Cobalt	Blood	*

* - For sampling details, please see the source document.

Engineering measures

VENTILATION: 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.

Ensure adequate ventilation, especially in confined areas.
General ventilation normally adequate.
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.

WET METHODS: 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.

WORK PRACTICES: 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.

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.

HOUSEKEEPING: 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.

Personal protective equipment

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.

Hand protection	Wear appropriate chemical resistant gloves. Wear gloves to prevent contact with particulate or solutions. Wear gloves to prevent metal cuts and skin abrasions during handling.
Eye protection	If contact is likely, safety glasses with side shields are recommended. 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.
Skin and body protection	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. 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.

9. Physical and chemical properties

Physical state	Solid.
Form	Solid. Various shapes.
Color	Copper.
Odor	Not applicable.
Odor threshold	Not applicable.
Melting point/freezing point	1600 - 1960 °F (871.11 - 1071.11 °C) / Not applicable.
Boiling point, initial boiling point, and boiling range	Not applicable.
Combustibility	Not available.
Lower and upper explosion limit / flammability limit	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Explosive limit - lower (%)	Not applicable.
Explosive limit - upper (%)	Not applicable.
Flash point	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
pH	Not applicable.
Kinematic viscosity	Not available.
Solubility(ies)	
Solubility (water)	Not applicable.
Partition coefficient (n-octanol/water) (log value)	Not available.
Vapor pressure	0.77 hPa estimated
Density and/or relative density	
Density	8.80 g/cm3 estimated
Relative density	Not applicable.
Vapor density	Not applicable.
Particle characteristics	Not available.
Other information	
Evaporation rate	Not applicable.
Explosive properties	Not explosive.
Flammability	Not applicable.
Oxidizing properties	Not oxidizing.
Specific gravity	8.8 estimated
Viscosity (Coefficient of viscosity)	Not applicable.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Acute toxicity May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. 100% of the mixture consists of component(s) of unknown acute dermal toxicity. 96.53% of the mixture consists of component(s) of unknown acute oral toxicity.

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.

Respiratory or skin sensitization

ACGIH sensitization

Cobalt and inorganic compounds, as Co (CAS 7440-48-4)	Dermal sensitization
	Respiratory sensitization

Japan Society for Occupational Health: Respiratory sensitizer

Beryllium (CAS 7440-41-7)	1 Known respiratory sensitizer.
Cobalt (CAS 7440-48-4)	1 Known respiratory sensitizer.
Nickel (CAS 7440-02-0)	2 Probable respiratory sensitizer.

Japan Society for Occupational Health: Skin sensitizer

Beryllium (CAS 7440-41-7)	2 Probable skin sensitizer.
Cobalt (CAS 7440-48-4)	1 Known skin sensitizer.
Copper (CAS 7440-50-8)	2 Probable skin sensitizer.
Nickel (CAS 7440-02-0)	1 Known skin sensitizer.

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

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity May cause cancer.

ACGIH Carcinogens

Cobalt (CAS 7440-48-4)	A2 Suspected human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Beryllium (CAS 7440-41-7)	1 Carcinogenic to humans.
Cobalt (CAS 7440-48-4)	2B Possibly carcinogenic to humans.
Nickel (CAS 7440-02-0)	2B Possibly carcinogenic to humans.

Japan Society for Occupational Health: Carcinogen

Beryllium (CAS 7440-41-7)	1 Carcinogenic to humans.
Cobalt (CAS 7440-48-4)	2B Possibly carcinogenic to humans.
Nickel (CAS 7440-02-0)	1 Carcinogenic to humans.

NTP Report on Carcinogens

Cobalt (CAS 7440-48-4)	Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not available.

Specific target organ toxicity - repeated exposure May cause damage to organs (respiratory system) through prolonged or repeated exposure.

Aspiration hazard Not an aspiration hazard.

12. Ecological information

Ecotoxicological data

Product		Species	Test Results
Copper Beryllium Wrought Alloy			
Aquatic			
Crustacea	EC50	Daphnia	0.1746 mg/l, 48 hours
Fish	LC50	Fish	2.5673 mg/l, 96 hours
Acute			
Fish	LC50	Fish	0.0326 mg/l, 96 hours estimated

Components		Species	Test Results
Copper (CAS 7440-50-8)			
Aquatic			
Acute			
Crustacea	EC50	Blue crab (Callinectes sapidus)	0.0031 mg/l
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0219 - 0.0446 mg/l, 96 hours
Nickel (CAS 7440-02-0)			
Aquatic			
Acute			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.06 mg/l, 4 days

Ecotoxicity The product is not classified as environmentally hazardous.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulation No data available.

Mobility in soil This product is miscible in water.

Hazardous to the ozone layer No data available.

Other hazardous effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Residual waste 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).

Contaminated packaging 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.

Local disposal regulations Contract with a disposal operator licensed by the Law on Disposal and Cleaning. 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. When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste. 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.

14. Transport information

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 applicable.

National regulations Follow regulation in section 15 for domestic transportation.

15. Regulatory information

Industrial Safety and Health Act

Specified substances regulation

Class 1 designated chemical substances

BERYLLIUM AND ITS COMPOUNDS

Class 2 designated chemical substances

COBALT

Cobalt and its inorganic compounds

NICKEL COMPOUNDS (POWDER, EXCLUDING NICKEL CARBONYL (ITEM NO. 24))

Notifiable substances

BERYLLIUM AND ITS COMPOUNDS	Table 9 Ordinance No. VI	0.15 - 2.0 %
COBALT AND COBALT COMPOUNDS	Table 9 Ordinance No. 172	0 - 2.7 %
COPPER AND COPPER COMPOUNDS	Table 9 Ordinance No. 379	96 - 100 %
NICKEL	Table 9 Ordinance No. 418	0 - 2.2 %

Labeling substances

BERYLLIUM AND ITS COMPOUNDS	0.15 - 2.0 %
COBALT (POWDER)	0 - 2.7 %
COBALT AND COBALT COMPOUNDS	0 - 2.7 %
COPPER (POWDER)	96 - 100 %
COPPER AND COPPER COMPOUNDS	96 - 100 %

Poisonous and Deleterious Substances Control Act

Specified poisonous substances

Not regulated.

Poisonous substances

Not regulated.

Deleterious substances

Not regulated.

Act on the Regulation of Manufacture and Evaluation of Chemical Substances

Class I specified chemical substances

Not regulated.

Class II specified chemical substances

Not regulated.

Monitoring chemical substances

Not regulated.

Priority Assessment Chemical Substances (PACs)

Not regulated.

Reporting Exempted Substances

Not regulated.

Law concerning Pollutant Release and Transfer Register

Specified class 1 substances (substance name, ordinance number and content)

BERYLLIUM AND ITS COMPOUNDS (AS BE)	Ordinance No. 444	2.0 %	(Beryllium)
NICKEL COMPOUNDS (AS NI)	Ordinance No. 355	2.2 %	(Nickel)

Class 1 substances (substance name, ordinance number and content)

Cobalt and its compounds (as Co)	Ordinance No. 156	2.7 %	(Cobalt)
NICKEL	Ordinance No. 354	2.2 %	(Nickel)

Class 2 substances (substance name, ordinance number and content)

Not regulated.

Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule Not regulated.

Air Law, Enforcement Rule Not regulated.

Explosives Control Act

Not regulated.

Water Pollution Control Act

COPPER

Sewage Act

COPPER AND ITS COMPOUNDS (AS CU)	3 MG/L

16. Other information

Bibliography

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits
JIS Z 7252:2014 Classification of chemicals based on “Globally Harmonized System of Classification and Labelling of Chemicals (GHS)”
JIS Z 7253:2019 Hazard communication of chemicals based on GHS - Labelling and Safety Data Sheet (SDS)
National Toxicology Program (NTP) Report on Carcinogens

Disclaimer

Materion Brush Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.
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.

Other information

Revised information in Section 2.
Revised information in Section 14.
Revised information in Section 16.
Revised information in Section 15.