



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

**Product identifier** CuZrAl

**Other means of identification**  
**SDS number** M46

**Manufacturer/Importer/Supplier/Distributor information**  
**Manufacturer**

**Company name** Materion Brush Inc.  
**Address** 6070 Parkland Boulevard  
Mayfield Heights, OH 44124  
United States

**Telephone** 1.800.862.4118  
**Website** www.materion.com  
**E-mail** ehs@materion.com  
**Contact person** Theodore Knudson  
**Emergency phone number** 1.800.862.4118

## 2. Hazard(s) identification

**Physical hazards** Not classified.  
**Health hazards** Not classified.  
**Environmental hazards** Not classified.  
**OSHA defined hazards** Not classified.

### Label elements

**Hazard symbol** None.  
**Signal word** None.  
**Hazard statement** The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

### Precautionary statement

**Prevention** Wash thoroughly after handling. Wear protective gloves. Do not eat, drink or smoke when using this product.  
**Response** If swallowed: Call a poison center/doctor if you feel unwell.  
**Storage** Store locked up.  
**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations. Refer to manufacturer/supplier for information on recovery/recycling.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** For further information, please contact the Product Stewardship Department at +1.800.862.4118.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Zirconium		7440-67-7	55 - 60
Copper		7440-50-8	35 - 40
Aluminum		7429-90-5	2 - 4

## 4. First-aid measures

**Inhalation** Under normal conditions of intended use, this material is not expected to be an inhalation hazard. Get medical attention if symptoms persist.

**Skin contact** Wash with water and soap as a precaution.

<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally.
<b>Ingestion</b>	Rinse mouth. Get medical advice/attention if you feel unwell.
<b>Most important symptoms/effects, acute and delayed</b>	Under normal conditions of intended use, this material does not pose a risk to health.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically.
<b>General information</b>	Under normal conditions of intended use, this material does not pose a risk to health.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Dry powder. Dry sand. Foam.
<b>Unsuitable extinguishing media</b>	Do not use water as an extinguisher.
<b>Specific hazards arising from the chemical</b>	This product is not flammable.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	Move containers from fire area if you can do so without risk.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Wear appropriate protective equipment and clothing during clean-up. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Clean up in accordance with all applicable regulations.
<b>Environmental precautions</b>	Not relevant, due to the form of the product.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Wear gloves to prevent metal cuts and skin abrasions during handling. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Store locked up.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	PEL	5 mg/m <sup>3</sup> 15 mg/m <sup>3</sup>	Respirable fraction. Total dust.
Copper (CAS 7440-50-8)	PEL	1 mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup>	Dust and mist. Fume.

#### US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup> 15 mg/m <sup>3</sup> 50 mppcf 15 mppcf	Respirable fraction. Total dust. Total dust. Respirable fraction.

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup> 0.2 mg/m <sup>3</sup>	Dust and mist. Fume.
Zirconium (CAS 7440-67-7)	STEL	10 mg/m <sup>3</sup>	

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
	TWA	5 mg/m <sup>3</sup>	

**US. NIOSH: Pocket Guide to Chemical Hazards Components**

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup> 5 mg/m <sup>3</sup> 10 mg/m <sup>3</sup>	Respirable. Welding fume or pyrophoric powder. Total
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup>	Dust and mist. Fume.
Zirconium (CAS 7440-67-7)	STEL TWA	10 mg/m <sup>3</sup> 5 mg/m <sup>3</sup>	

**US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants Components**

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	PEL	5 mg/m <sup>3</sup> 5 mg/m <sup>3</sup> 5 mg/m <sup>3</sup> 10 mg/m <sup>3</sup>	Pyrophoric powder. Respirable fraction. Welding fume. Total dust.
Copper (CAS 7440-50-8)	PEL	1 mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup>	Dust and mist. Fume.

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**

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.

**Individual protection measures, such as personal 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.

**Skin protection****Hand protection**

Wear gloves to prevent metal cuts and skin abrasions during handling.

**Other**

No specific recommendations.

**Respiratory protection**

In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

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.

**9. Physical and chemical properties****Appearance****Physical state**

Solid.

**Form**

Solid.

**Color**

Copper/Silver/Gray.

**Odor**

None.

**Odor threshold**

Not applicable.

**pH**

Not applicable.

**Melting point/freezing point**

1790.6 °F (977 °C) estimated / Not applicable.

**Initial boiling point and boiling range**

Not applicable.

**Flash point**

Not available.

**Evaporation rate**

Not applicable.

**Flammability (solid, gas)**

None known.

**Upper/lower flammability or explosive limits****Explosive limit - lower (%)**

Not applicable.

**Explosive limit - lower (%) temperature**

Not applicable.

<b>Explosive limit - upper (%)</b>	Not applicable.
<b>Explosive limit - upper (%) temperature</b>	Not applicable.
<b>Vapor pressure</b>	Not applicable.
<b>Vapor density</b>	Not applicable.
<b>Relative density</b>	Not applicable.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble.
<b>Partition coefficient (n-octanol/water)</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not applicable.
<b>Viscosity</b>	Not applicable.
<b>Other information</b>	
<b>Density</b>	6.50 g/cm <sup>3</sup> estimated
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Not likely, due to the form of the product.
<b>Skin contact</b>	No adverse effects due to skin contact are expected.
<b>Eye contact</b>	Not relevant, due to the form of the product.
<b>Ingestion</b>	Harmful if swallowed.

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	None known.
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### Information on toxicological effects

<b>Acute toxicity</b>	None known.
<b>Skin corrosion/irritation</b>	Not relevant, due to the form of the product.
<b>Serious eye damage/eye irritation</b>	Not likely, due to the form of the product.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	Not classifiable as to carcinogenicity to humans.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	Not listed.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>	Not regulated.

## US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>Chronic effects</b>	No known chronic or acute health risks.

### 12. Ecological information

<b>Ecotoxicity</b>	This product has no known eco-toxicological effects.
<b>Persistence and degradability</b>	
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	No data available.
<b>Other adverse effects</b>	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

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	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).
<b>Contaminated packaging</b>	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.

### 14. Transport information

<b>DOT</b>	Not regulated as dangerous goods.
<b>IATA</b>	Not regulated as dangerous goods.
<b>IMDG</b>	Not regulated as dangerous goods.

### 15. Regulatory information

<b>US federal regulations</b>	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
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#### **TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

#### **CERCLA Hazardous Substance List (40 CFR 302.4)**

Copper (CAS 7440-50-8) Listed.

#### **SARA 304 Emergency release notification**

Not regulated.

#### **OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not regulated.

#### **Superfund Amendments and Reauthorization Act of 1986 (SARA)**

<b>Hazard categories</b>	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
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#### **SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical No

**SARA 313 (TRI reporting)**

<b>Chemical name</b>	<b>CAS number</b>	<b>% by wt.</b>
Aluminum	7429-90-5	2 - 4
Copper	7440-50-8	35 - 40

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations** California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Aluminum (CAS 7429-90-5)

Copper (CAS 7440-50-8)

**16. Other information, including date of preparation or last revision**

**Issue date** 10-29-2018

**Version #** 01

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