



SAFETY DATA SHEET

MATERION

1. Identification

Product identifier **Copper Aluminum Dovetail**

Other means of identification

SDS number R11

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 mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response If exposed or concerned: Get medical advice/attention.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

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

Supplemental information The product is provided in solid, massive form. Therefore, it does not present the same hazards as it would if it were in powdered form.
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 | % |
|---------------|--------------------------|------------|---------|
| Copper | | 7440-50-8 | 60 - 80 |
| Aluminum | | 7429-90-5 | 20 - 40 |

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

| | |
|---|--|
| Eye contact | Rinse with water. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth. Get medical attention if symptoms occur. |
| Most important symptoms/effects, acute and delayed | Direct contact with eyes may cause temporary irritation. |
| Indication of immediate medical attention and special treatment needed | Treat symptomatically. |
| General information | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

5. Fire-fighting measures

| | |
|--|--|
| Suitable extinguishing media | This is a non-combustible, non-reactive solid material. |
| Unsuitable extinguishing media | Not applicable, non-combustible. |
| Specific hazards arising from the chemical | This product is not flammable. |
| Special protective equipment and precautions for firefighters | Wear suitable protective equipment. |
| Fire fighting equipment/instructions | Not a fire hazard. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | This product is not flammable. |

6. Accidental release measures

| | |
|--|--|
| Personal precautions, protective equipment and emergency procedures | As supplied, this product poses no special release issues. |
| Methods and materials for containment and cleaning up | No specific clean-up procedure noted. |
| Environmental precautions | Not relevant, due to the form of the product. |

7. Handling and storage

| | |
|---|--|
| Precautions for safe handling | Observe good industrial hygiene practices. |
| Conditions for safe storage, including any incompatibilities | Not available. |

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known 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 ³ | Respirable fraction. |
| | | 15 mg/m ³ | Total dust. |
| Copper (CAS 7440-50-8) | PEL | 1 mg/m ³ | Dust and mist. |
| | | 0.1 mg/m ³ | Fume. |

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

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

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|--------------------------|------|-----------------------|----------------------|
| Aluminum (CAS 7429-90-5) | TWA | 1 mg/m ³ | Respirable fraction. |
| Copper (CAS 7440-50-8) | TWA | 1 mg/m ³ | Dust and mist. |
| | | 0.2 mg/m ³ | Fume. |

US. NIOSH: Pocket Guide to Chemical Hazards

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

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

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

It is a good industrial hygiene practice to minimize eye contact.

Skin protection**Hand protection**

Not normally needed.

Other

No special protective equipment required.

Respiratory protection

No personal respiratory protective equipment normally required.

Thermal hazards

Not applicable.

General hygiene considerations

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.

Odor

None.

Odor threshold

Not applicable.

pH

Not applicable.

Melting point/freezing point

1220 °F (660 °C) estimated / Not applicable.

Initial boiling point and boiling range

Not applicable.

Flash point

Not applicable.

| | |
|---|-----------------|
| Evaporation rate | Not applicable. |
| Flammability (solid, gas) | 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. |
| Relative density | Not applicable. |
| Solubility(ies) | |
| Solubility (water) | Insoluble. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not applicable. |
| Decomposition temperature | Not applicable. |
| Viscosity | Not applicable |
| Other information | |
| Density | Not applicable. |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |
| Partition coefficient (oil/water) | 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 | Contact with incompatible materials. |
| Incompatible materials | Strong acids, alkalies and oxidizing agents. |
| Hazardous decomposition products | Irritating and/or toxic fumes and gases may be emitted upon the product's decomposition. |

11. Toxicological information

Information on likely routes of exposure

| | |
|--------------|---|
| Inhalation | Not likely, due to the form of the product. Inhalation of dusts may cause respiratory irritation. |
| Skin contact | No adverse effects due to skin contact are expected. |
| Eye contact | Not likely, due to the form of the product. Dust in the eyes will cause irritation. |
| Ingestion | Expected to be a low ingestion hazard. |

Symptoms related to the physical, chemical and toxicological characteristics
None known.

Information on toxicological effects

| | |
|---------------------------|---|
| Acute toxicity | Not known. |
| 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 | |
| Respiratory sensitization | Not a respiratory sensitizer. |
| Skin sensitization | This product is not expected to cause skin sensitization. |
| Germ cell mutagenicity | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| Carcinogenicity | Not classifiable as to carcinogenicity to humans. |
| IARC Monographs. Overall Evaluation of Carcinogenicity | |
| Not listed. | |
| OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) | |
| Not listed. | |
| US. National Toxicology Program (NTP) Report on Carcinogens | |
| Not listed. | |
| Reproductive toxicity | This product is not expected to cause reproductive or developmental effects. |
| Specific target organ toxicity - single exposure | Not classified. |
| Specific target organ toxicity - repeated exposure | Not classified. |
| Aspiration hazard | Not an aspiration hazard. |
| Chronic effects | No known chronic or acute health risks. |

12. Ecological information

Ecotoxicity Contains a substance which causes risk of hazardous effects to the environment.

| Product | | Species | Test Results |
|--------------------------|------|---|---------------------------------|
| Copper Aluminum Dovetail | | | |
| Aquatic | | | |
| <i>Acute</i> | | | |
| Fish | LC50 | Fish | 0.0385 mg/l, 96 hours estimated |
| Components | | Species | Test Results |
| Copper (CAS 7440-50-8) | | | |
| Aquatic | | | |
| <i>Acute</i> | | | |
| Crustacea | EC50 | Blue crab (<i>Callinectes sapidus</i>) | 0.0031 mg/l |
| Fish | LC50 | Fathead minnow (<i>Pimephales promelas</i>) | 0.0219 - 0.0446 mg/l, 96 hours |

* Estimates for product may be based on additional component data not shown.

| | |
|--------------------------------------|---|
| Persistence and degradability | No data is available on the degradability of this product. |
| Bioaccumulative potential | No data available. |
| Mobility in soil | No data available. |
| Other adverse 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

| | |
|-----------------------------------|--|
| Disposal instructions | Collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |

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).

Contaminated packaging No special precautions.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

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 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|---------------|------------|----------|
| Aluminum | 7429-90-5 | 20 - 40 |
| Copper | 7440-50-8 | 60 - 80 |

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.

California Proposition 65

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 09-05-2017

Revision date 09-28-2021
Version # 03
Further information Transportation Emergency
Call Chemtrec at:
International: 703.741.5970
Spain: 900.868.538
Switzerland: 0800.564.402
Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059
Other information Revised information in Section 16.

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