

Brush 60[®] Strip

Materion's Brush 60 material is a high-performance, lower-priced copper-beryllium alloy offering cost-effective solutions for many applications. Available in mill hardened tempers, Brush 60 was performance engineered for electronic contact and spring applications in the computer, datacom and telecommunications markets.



As components are reduced in size and signal requirements become more stringent, the selection of materials is of increasing importance. Total cost solutions demand materials which provide design flexibility, ease of manufacturing and life cycle reliability. Brush 60 (C17460) was performance engineered with these criteria in mind. Key benefits include:

- Greater contact force and conductivity to improve signal transfer
- Superior high-temperature durability
- Freedom to form intricate parts at high strength levels
- Complete recyclability

Chemical Composition (Weight Percent)

Beryllium (Be)	Nickel (Ni)	Zirconium (Zr)	Tin (Sn)	Copper
0.15 - 0.50	1.0 - 1.4	0.50 max	0.25 max	Balance

Physical Properties

Elastic Modulus	Density	Electrical Conductivity	Thermal Conductivity	Thermal Expansion Coefficient
19,600 ksi 135 GPa	0.318 lb/in ³ 8.81 g/cm ³	50% IACS (nominal) 3.4 μ ohm cm (nominal)	128 BTU/hr fr °F 221 W/m °C	9.8 x 10 ⁻⁶ in/in °F 17.6 x 10 ⁻⁶ mm/mm °C

Typical Mechanical Properties

Temper	0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation (Minimum)	Formability (R/t) For a 90 Degree Bend	
	(ksi)	(MPa)	(ksi)	(MPa)		Good Way	Bad Way
¼ HT	95 - 115	655 - 795	115 - 135	795 - 930	11%	0.7	0.7
HT	105 - 125	720 - 860	120 - 140	825 - 965	10%	1.5	1.5

Note: A "good way" bend has its axis perpendicular to the rolling direction of the strip. Strip less than 0.010" (0.25 mm) may have improved formability. Please see formability vs. thickness charts below.

Standard Availability

Brush 60 strip is available in widths ranging from 0.050" to 16" (1.27 mm to 406.5 mm) and in thicknesses ranging from 0.0020" to 0.080" (0.05 mm to 2.03 mm).

Industry Standards and Specifications

UNS C17460

Related Information

Additional technical information on Brush 60 strip may be obtained by phoning +1.800.375.4205. For pricing and availability, call +1.800.521.8800.

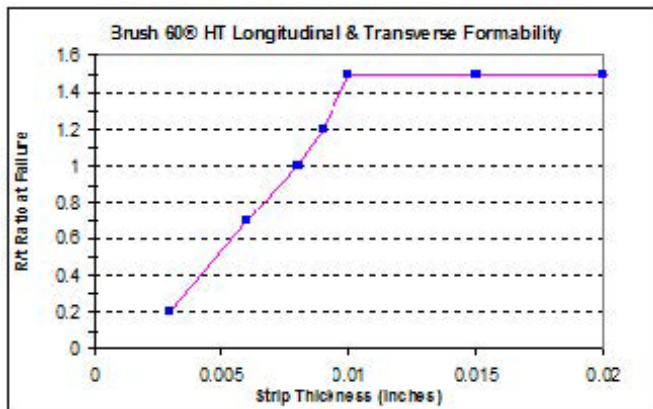
Tolerances

Strip Thickness (inches)		Standard Thickness Tolerance (inches)	Strip Thickness (mm)		Standard Thickness Tolerance (mm)
Over	Including	Plus or Minus	Over	Over	Including
	0.0020	0.00010		0.05	0.003
0.0020	0.0040	0.00015	0.05	0.10	0.004
0.0040	0.0060	0.00020	0.10	0.15	0.005
0.0060	0.0090	0.00025	0.15	0.20	0.006
0.0090	0.0130	0.00030	0.20	0.30	0.008
0.0130	0.0260	0.00040	0.30	0.70	0.010
0.0260	0.0370	0.00060	0.70	1.00	0.015
0.0370	0.050	0.00080	1.00	1.30	0.020
0.0500	0.075	0.00100	1.30	2.00	0.250

Additional tolerances are per ASTM B194. Please specify the exact tolerances that you require when you place your order. Tighter tolerances may be available at additional cost. Please contact your local sales engineer to confirm the requested capability.

Health and Safety

Processing beryllium-containing alloys poses a health risk if safe practices are not followed. Inhalation of airborne beryllium can cause serious lung diseases in some individuals. Occupational safety and health regulatory agencies worldwide have set mandatory limits on occupational respiratory exposures. Read and follow the guidance in the Safety Data Sheet (SDS) before working with this material. The SDS and additional important beryllium health and safety information and guidance can be found at berylliumsafety.com, berylliumsafety.eu and Materion.com. For questions on safe practices for beryllium-containing alloys, contact the Materion Product Stewardship Group at +1.800.862.4118 or contact us by email at Materion-PS@Materion.com.



Disclaimer:

Only the buyer can determine the appropriateness of any processing practice, end-product or application. Materion does not make any warranty regarding its recommendations, the suitability of Materion's product, or its processing suggestions for buyer's end product, application or equipment.

The properties presented on this data sheet are for reference purposes only, intended only to initiate the material selection process. They do not constitute, nor are they intended to constitute, a material specification. Material will be produced to one of the applicable industry standards, if any, listed in the Industry Standards and Specification section.

Actual properties may vary by thickness and/or part number. Please contact your local sales engineer for detailed properties to be used in simulation.

Any properties marked as preliminary are subject to change at any time as the manufacturing process is further refined.