

PROtherm™

Materion Brush Performance Alloys' PROtherm™ is a high conductivity copper mold alloy with good strength. PROtherm™ is used as blow mold cavities, injection mold cores and cavities and hot runners. The alloy provides excellent toughness, and the highest conductivity of any alloy with tensile strength in excess of 100,000 psi.

CHEMICAL COMPOSITION (weight percent)

Alloy	Nickel	Beryllium	Copper
PROtherm™	1.4 – 2.2	0.2 – 0.6	Balance

PHYSICAL PROPERTIES

Elastic Modulus	Melting Point (Solidus)	Density	Thermal Expansion	Thermal Conductivity (100 °C)	Heat Capacity (100 °C)
20,000 ksi 138 GPa	1900 °F 1040 °C	.319 lb/in ³ 8.83 g/cm ³	9.8x10 ⁻⁶ in/in °F 1.8x 10 ⁻⁵ °C ⁻¹	145 BTU/hr ft ·°F 250 W/m ·K	.099 BTU/lb ·°F 0.41 J/g ·K

TYPICAL MECHANICAL PROPERTIES*

0.2% Offset Yield Strength	Ultimate Tensile Strength	Fatigue Strength 10 ⁷ Cycles (R=-1)	Elongation	Impact Strength	Hardness
90 ksi 620 MPa	105 ksi 725 MPa	35 ksi 240 MPa	15%	40 ft ·lb 55 J	20 HRC (97 HRB)

*Properties may vary by shape and thickness.

FORMS AVAILABLE

Rounds, square and rectangular bars, plate and forged rings.

RELATED INFORMATION

Additional information on PROtherm™ products can be obtained by calling 800-375-4205.

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