



# BERYLLIUM MATERIAL PROPERTIES

		Beryllium	AlBeMet®	Aluminum Alloys	Titanium Alloys	Stainless Steel	
Property		PF-60® (typical)	AMI62	7075-T6	Ti-6Al-4V	17-4PH H900	
Physical	Density	lb/in <sup>3</sup> (g/cm <sup>3</sup> )	0.067 (1.84)	0.075 (2.07)	0.102 (2.81)	0.160 (4.43)	0.278 (7.70)
	Melting Point	°F (°C)	2,341 (1,283)	1,980 (1,082)	1,175 (635)	3,020 (1,660)	2,625 (1,440)
Thermal	Thermal Conductivity	BTU•in/hr•ft <sup>2</sup> •°F (W/m•K)	1,500 (216)	1,460 (210)	900 (130)	46.5 (6.7)	124 (17.9)
	Coefficient of Thermal Expansion	µin/in•°F (µm/m•°C)	6.39 (11.5)	7.73 (13.9)	12.01 (21.6)	4.78 (8.60)	5.8 (10.4)
	Specific Heat Capacity	BTU/lb•°F (J/g•°C)	0.4601 (1.925)	0.373 (1.56)	0.229 (0.960)	0.1258 (0.5263)	0.11 (0.46)
Mechanical	Speed of Sound	ft/sec (m/sec)	41,000 (12,497)	31,680 (9,656)	20,800 (6,340)	19,700 (6,005)	16,700 (5,090)
	Elastic Modulus	Msi (GPa)	43.9 (303)	28.0 (193)	10.4 (71.7)	16.5 (114)	30.0 (197)
	Ultimate Tensile Strength	ksi (MPa)	53.7 (370)	63.1 (435)	83.0 (572)	170 (1170)	210 (1448)
	Poisson's Ratio		0.032	0.17	0.33	0.33	0.272
Other	Electrical Resistivity	µΩ•cm	4.3	3.5	5.15	178	77

**About**

Typical applications include structural, optical, acoustic, ionizing radiation and high energy physics.

Beryllium is available in various forms, including plate, sheet, foil, block, rod and near-net shape.

Typical joining methods are liquidus brazing, diffusion bonding, electron beam welding (EB Welding) and epoxy bonding.

Beryllium's CTE makes it suitable for brazing with copper, nickel, Monel®, Inconel® and related super alloys, and suitable for EB Welding with aluminum.

Materion is the world's only fully-integrated beryllium producer, with approximately 70 years of proven mine reserves located in western Utah.

*Health & Safety Note: Handling beryllium in solid form poses no special health risk. Like many industrial materials, beryllium-containing materials may pose a health risk if recommended safe handling practices are not followed. Inhalation of airborne beryllium may cause a serious lung disorder in susceptible individuals. The Occupational Safety and Health Administration (OSHA) has set mandatory limits on occupational respiratory exposures. Read and follow the guidance set forth in the Safety Data Sheet (SDS) before working with this material. For additional information on safe handling practices or technical data on beryllium, contact Materion Electrofusion at +1 510.623.1500.*

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