IBC Advanced Alloys - Engineered Materials

Product Data Sheet - Beralcast® 191

This alloy consists of 65% Be and 35% Al (by weight) and is used primarily for moderate strength cast electronic and thermal packaging applications.
BeAl-191 also provides a unique capability for selected applications in optical systems, where increased stability through the operational temperature range and thermal conductivity are of critical importance.

Physical and Chemical Properties:

Property Description	Units	Beralcast® 191
Density	g/cm³ @ 25°C lb/in³ @ 77°F	2.16 0.078
Melting Point *(Liquidus)*	°C °F	585 1085
Coeffcient of Thermal Expansion	µm/m (ppm) @ 25°C µin/in (ppm) @ 77°F	13.2 7.3
Specific Heat	J/Kg -°K @ 20°C Btu/lb -°F @68°F	1423.5 0.34
Thermal Conductivity	W/m -°K @ 25°C Btu/h-ft -°F @ 77°F	180.0 104.0
Modulus of Elasticity in Tension	Gpa @ 25°C Mpsi @ 77°F	202.0 29.3
Specific Stiffness *(Modulus/Density)*	Gpa-cm³/g @ 25°C Mpsi-in³/lbs @ 77°F	93.5 375.6
Poissons Ratio		0.20
Yield Strength	Mpa @ 25°C Ksi @ 77°F	137.9 20.0
Ultimate Tensile Strength	Mpa @ 25°C Ksi @ 77°F	196.5 28.5
Specific Strength *(UTS/Density)*	Mpa-cm³/g @ 25°C Ksi-in³/lbs @ 77°F	91.0 365.4
Elongation 2.54 cm *(1 in)* **Gage**	% @ 25°C % @ 77°F	1.7 1.7
Axial Fatigue *(R=-1.0)* **10^7 Cycles**	Mpa @ 25°C Ksi @ 77°F	- -

Composition by Weight Percent:

Element	Min.	Max.
Beryllium	61.1	68.6
Aluminum	Remainder	Remainder
Silicon	1.65	2.50
Silver	1.65	2.35
Cobalt	N/A	0.20
Germanium	N/A	0.20
Iron	N/A	0.20

TSX-V:IB / OTCQX:IAALF
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