

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/cm ³ @ 25°C	2.16
	lb/in ³ @ 77°F	0.078
Melting Point (Liquidus)	°C	11500
	°F	2102
Coefficient of Thermal Expansion	µm/m (ppm) @ 25°C	13.6
	µin/in (ppm) @ 77°F	7.5
Specific Heat	J/Kg -°K @ 20°C	1423.5
	Btu/lb -°F @ 68°F	0.34
Thermal Conductivity	W/m -°K @ 25°C	180.0
	Btu/h-ft -°F @ 77°F	104.0
Modulus of Elasticity in Tension	Gpa @ 25°C	202.0
	Mpsi @ 77°F	29.3
Specific Stiffness (Modulus/Density)	Gpa-cm ³ /g @ 25°C	93.5
	Mpsi-in ³ /lbs @ 77°F	375.6
Poissons Ratio		0.20
Yield Strength	Mpa @ 25°C	137.9
	Ksi @ 77°F	20.0
Ultimate Tensile Strength	Mpa @ 25°C	196.5
	Ksi @ 77°F	28.5
Specific Strength (UTS/Density)	Mpa-cm ³ /g @ 25°C	91.0
	Ksi-in ³ /lbs @ 77°F	365.4
Elongation 2.54 cm (1 in) Gage	% @ 25°C	1.7
	% @ 77°F	1.7
Axial Fatigue (R=-1.0) 10⁷ 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

IBC ADVANCED ALLOYS CORP.

ENGINEERED MATERIALS

401 Arvin Road
Franklin IN USA 46131
Toll Free: (800) 423-5612
T: (317) 738-2558
E: info@ibcadvancedalloys.com

55 Jonspin Road
Wilmington, MA 01887
Toll Free: 855.237.2522
T: 978.284.8900
E: emsales@ibcadvancedalloys.com