

IBC Advanced Alloys Beralcast® 363 Beryllium-Aluminum Alloy

Category : Metal , Metal Matrix Composite , Nonferrous Metal , Beryllium Alloy

Material Notes:

This alloy provides an ideal solution for weight, stiffness and thermal critical applications in aerospace, defense and commercial markets. BeAl-363 is a metal matrix composite which consists of 65% Be (by weight) and 35% Al. BeAl-363 is used primarily for high-strength/high-elastic modulus precision cast structural applications. This alloy is 22% less dense than Al-356 and is 3.5 times as stiff. Information provided by IBC Advanced Alloys

Order this product through the following link:

http://www.lookpolymers.com/polymer_IBC-Advanced-Alloys-Beralcast-363-Beryllium-Aluminum-Alloy.php

Physical Properties	Metric	English	Comments
Density	2.16 g/cc	0.0780 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	289.6 MPa	42000 psi	
Tensile Strength, Yield	213.7 MPa	30990 psi	
Elongation at Break	3.0 %	3.0 %	
Modulus of Elasticity	202 GPa	29300 ksi	in tension
Compressive Yield Strength	226.1 MPa	32790 psi	
Bearing Yield Strength	476.4 MPa	69100 psi	Pin Type (e/D = 2.0)
Poissons Ratio	0.20	0.20	
Fatigue Strength	117.2 MPa @# of Cycles 1.00e+7	17000 psi @# of Cycles 1.00e+7	Axial (R = -1.0)
Shear Modulus	84.2 GPa	12200 ksi	Calculated
Shear Strength	247.5 MPa	35900 psi	Pin Double Shear Strength

Thermal Properties	Metric	English	Comments
CTE, linear	14.2 Åµm/m-Å°C @Temperature 25.0 Å°C	7.89 Åµin/in-Å°F @Temperature 77.0 Å°F	
Specific Heat Capacity	1.25 J/g-Å°C	0.299 BTU/lb-Å°F	
Thermal Conductivity	105.5 W/m-K	732.2 BTU-in/hr-ft ² -Å°F	

Melting Point Thermal Properties	585 Å°C Metric	1090 Å°F English	Comments
Liquidus	585 Å°C	1090 Å°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	27.75 - 35.05 %	27.75 - 35.05 %	As remainder
Beryllium, Be	61.1 - 68.6 %	61.1 - 68.6 %	
Cobalt, Co	0.65 - 1.35 %	0.65 - 1.35 %	
Germanium, Ge	0.55 - 0.95 %	0.55 - 0.95 %	
Iron, Fe	<= 0.20 %	<= 0.20 %	
Silicon, Si	<= 0.50 %	<= 0.50 %	
Silver, Ag	2.65 - 3.35 %	2.65 - 3.35 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000430 ohm-cm	0.00000430 ohm-cm	

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