

Ceramic Process Systems AlSiC- 10, 54 vol% SiC

Category : Metal , Metal Matrix Composite

Material Notes:

Aluminum alloy A356.2 used. Hermeticity < 1x10⁹ atm-cc/s He.CPS fabricates AlSiC by preparing an SiC preform which is subsequently infiltrated by molten aluminum metal. After infiltration, components can be plated using conventional plating schemes to allow for assembly and integration operations. The CPS fabrication process provides a material that has a unique combination of physical properties: a compatible CTE, high thermal conductivity, light weight, and tight dimensional tolerance without machining (i.e. net-shape).Information provided by Ceramic Process Systems.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Ceramic-Process-Systems-AlSiC-10-54-vol-SiC.php

Physical Properties	Metric	English	Comments
Density	2.96 g/cc	0.107 lb/in ³	

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	167 GPa	24200 ksi	Young's Modulus
Flexural Strength	450 MPa	65300 psi	Bend strength (B-bar, 4 pt bend)
Bearing Yield Strength	427 MPa	61900 psi	B-bar, 4 pt bend
Poissons Ratio	0.251	0.251	
Shear Modulus	67.0 GPa	9720 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	9.50 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	5.28 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 30.0 $^\circ\text{C}$	@Temperature 86.0 $^\circ\text{F}$	
	11.2 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	6.22 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 200 $^\circ\text{C}$	@Temperature 392 $^\circ\text{F}$	
Specific Heat Capacity	0.768 J/g- $^\circ\text{C}$	0.184 BTU/lb- $^\circ\text{F}$	
Thermal Conductivity	≥ 160 W/m-K	≥ 1110 BTU-in/hr-ft ² - $^\circ\text{F}$	Minimum
	180 W/m-K	1250 BTU-in/hr-ft ² - $^\circ\text{F}$	Typical

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