

Materion AMC225XE T4 Aluminum/Silicon Carbide MMC Extruded Bar

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

Material Notes:

Aluminium alloy 2124 reinforced with 25 volume % silicon carbide particles (average size 3 micron). It is manufactured by a powder metallurgy route using high-energy mixing to ensure excellent particle distribution and to enhance mechanical properties. Good machinability - use diamond tools and high feed/speed for best results. Information provided by Aerospace Metal Composites Limited (AMC).

Order this product through the following link:

http://www.lookpolymers.com/polymer_Materion-AMC225XE-T4-AluminumSilicon-Carbide-MMC-Extruded-Bar.php

Physical Properties	Metric	English	Comments
Density	2.88 g/cc	0.104 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	210	210	Converted from Vickers
Hardness, Rockwell A	58.3	58.3	Converted from Vickers
Hardness, Rockwell B	95	95	Converted from Vickers
Hardness, Vickers	210	210	Pryamidal Diamond 10 kg load
Tensile Strength, Ultimate	690 MPa	100000 psi	statistical analysis gives AVG -3STD at 626 MPa
Tensile Strength, Yield	487 MPa @Strain 0.200 %	70600 psi @Strain 0.200 %	statistical analysis gives AVG-3STD at 438 MPa
Elongation at Break	5.0 %	5.0 %	in 25 mm
Modulus of Elasticity	115 GPa	16700 ksi	In Tension
Poissons Ratio	0.30	0.30	
Fatigue Strength	210 MPa @# of Cycles 100000	30500 psi @# of Cycles 100000	R=0.1, Kt=2.5
	350 MPa @# of Cycles 1.00e+7	50800 psi @# of Cycles 1.00e+7	RB R=-1
	400 MPa @# of Cycles 100000	58000 psi @# of Cycles 100000	R=-1, Kt=1
Fracture Toughness	18.0 - 20.0 MPa-m ^{1/2}	16.4 - 18.2 ksi-in ^{1/2}	
Shear Modulus	44.0 GPa	6380 ksi	Esimated from similar metals.

Mechanical Properties	Metric	English	Comments
Thermal Properties	Metric	English	Comments
CTE, linear	15.5 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$ @Temperature -100 - 100 $\text{Å}^\circ\text{C}$	8.61 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$ @Temperature -148 - 212 $\text{Å}^\circ\text{F}$	
Specific Heat Capacity	0.836 J/g- $\text{Å}^\circ\text{C}$	0.200 BTU/lb- $\text{Å}^\circ\text{F}$	
Thermal Conductivity	150 W/m-K @Temperature 0.000 - 100 $\text{Å}^\circ\text{C}$	1040 BTU-in/hr-ft Å^2 - $\text{Å}^\circ\text{F}$ @Temperature 32.0 - 212 $\text{Å}^\circ\text{F}$	
Melting Point	548 - 660 $\text{Å}^\circ\text{C}$	1020 - 1220 $\text{Å}^\circ\text{F}$	
Solidus	548 $\text{Å}^\circ\text{C}$	1020 $\text{Å}^\circ\text{F}$	
Liquidus	660 $\text{Å}^\circ\text{C}$	1220 $\text{Å}^\circ\text{F}$	
Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000900 ohm-cm	0.00000900 ohm-cm	

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China