

Schmolz + Bickenbach MoldMAX XL® Copper Alloy

Category : Metal , Nonferrous Metal , Copper Alloy

Material Notes:

Description: Brush Wellman's MoldMAX XL® is a high strength copper mold alloy with good thermal conductivity. The alloy contains no beryllium and is available in sections as large as 12" thick. The alloy's hardness is comparable with AISI P-20 tool steel, but its thermal conductivity is two to three times higher. MoldMAX XL® is used as injection mold cores and cavities. The alloy provides excellent toughness, wear resistance and surface finish. MoldMAX XL® typically machines faster than tool steels, and with appropriate machine tools, metal removal rates several times higher can be obtained. Information provided by Schmolz + Bickenbach

Order this product through the following link:

http://www.lookpolymers.com/polymer_Schmolz-Bickenbach-MoldMAX-XL-Copper-Alloy.php

Physical Properties	Metric	English	Comments
Density	8.91 g/cc	0.322 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	30	30	
Tensile Strength, Ultimate	793 MPa	115000 psi	
Tensile Strength, Yield	724 MPa @Strain 0.200 %	105000 psi @Strain 0.200 %	
Elongation at Yield	6.0 %	6.0 %	
Modulus of Elasticity	117 GPa	17000 ksi	
Fatigue Strength	>= 240 MPa @# of Cycles 1.00e+7	>= 34800 psi @# of Cycles 1.00e+7	(R=-1)
Charpy Impact	20.3 J	15.0 ft-lb	Notched

Thermal Properties	Metric	English	Comments
CTE, linear	16.2 µm/m-°C	9.00 µin/in-°F	
Specific Heat Capacity	0.389 J/g-°C @Temperature 100 °C	0.0930 BTU/lb-°F @Temperature 212 °F	
Thermal Conductivity	5.76 W/m-K @Temperature 100 °C	40.0 BTU-in/hr-ft ² -°F @Temperature 212 °F	
Melting Point	>= 923.9 °C	>= 1695 °F	approximate
Solidus	923.9 °C	1695 °F	approximate

Component Elements Properties	Metric	English	Comments
Copper, Cu	84 - 86 %	84 - 86 %	
Nickel, Ni	8.5 - 9.5 %	8.5 - 9.5 %	
Tin, Sn	5.5 - 6.5 %	5.5 - 6.5 %	

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