CLAL-MSX SICLANIC S® TF Quenched Copper Alloy, precipitation treated

Category : Metal , Nonferrous Metal , Copper Alloy

Material Notes:

SICLANIC S® is particularly recommended for the production of conductive contact blades. SICLANIC S® offers :electrical conductivity greatly superior to that of bronzes, brasses and nickel silvermechanicals properties on a par with those of copper cobalt- beryllium and of bronzeexcellent fatigue strengthvery competitive cost compared with copper-cobalt-beryllium.Information provided by CLAL-MSX

Order this product through the following link:
http://www.lookpolymers.com/polymer_CLAL-MSX-SICLANIC-S-TF-Quenched-Copper-Alloy-precipitation-treated.php

Physical Properties	Metric	English	Comments
Density	8.90 g/cc	0.322 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	170 - 190	170 - 190	
	150 @Time 3600 sec	150 @Time 1.00 hour	
	170 @Time 7200 sec	170 @Time 2.00 hour	
	180 @Time 10800 sec	180 @Time 3.00 hour	
	188 @Time 14400 sec	188 @Time 4.00 hour	
	191 @Time 18000 sec	191 @Time 5.00 hour	
Tensile Strength, Ultimate	580 - 680 MPa	84100 - 98600 psi	
Tensile Strength, Yield	450 - 550 MPa @Strain 0.200 %	65300 - 79800 psi @Strain 0.200 %	
Elongation at Break	10 - 20 %	10 - 20 %	
Modulus of Elasticity	130 GPa	18900 ksi	longitudinal
Flexural Strength	>= 430 MPa	>= 62400 psi	Limit of elasticity in Bending
Fatigue Strength	245 MPa @# of Cycles 1.00e+7	35500 psi @# of Cycles 1.00e+7	

Thermal Properties	Metric	English	Comments
CTE, linear	19.0 µm/m-°C @Temperature 20.0 - 300 °C	10.6 µin/in-°F @Temperature 68.0 - 572 °F	
Specific Heat Capacity	0.370 J/g-°C	0.0884 BTU/lb-°F	
Thermal Conductivity	84.0 W/m-K	583 BTU-in/hr-ft²-°F	solid solution (or quenched) state
	188.4 W/m-K	1307 BTU-in/hr-ft²-°F	quenched state
Melting Point	1040 - 1060 °C	1900 - 1940 °F	
Solidus	1040 °C	1900 °F	
Liquidus	1060 °C	1940 °F	

Component Elements Properties	Metric	English	Comments
Copper, Cu	96.9 %	96.9 %	
Nickel, Ni	2.5 %	2.5 %	
Silicon, Si	0.60 %	0.60 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	<= 0.00000400 ohm-cm	<= 0.00000400 ohm-cm	precipitation hardened
	0.00000430 ohm-cm	0.00000430 ohm-cm	precipitation hardened (5 hr)
	0.00000440 ohm-cm	0.00000440 ohm-cm	precipitation hardened (4 hr)
	0.00000460 ohm-cm	0.00000460 ohm-cm	precipitation hardened (2 hr)
	0.00000460 ohm-cm	0.00000460 ohm-cm	precipitation hardened (3 hr)
	0.00000490 ohm-cm	0.00000490 ohm-cm	precipitation hardened (1 hr)
	0.00000780 ohm-cm	0.00000780 ohm-cm	quenched

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