

CLAL-MSX SICLANIC S® TH3 Quenched Copper Alloy, 1/2 Hard, 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-TH3-Quenched-Copper-Alloy-12-Hard-precipitation-treated.php

Physical Properties	Metric	English	Comments
Density	8.90 g/cc	0.322 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	190 - 215	190 - 215	
	180	180	
	@Time 3600 sec	@Time 1.00 hour	
	190	190	
	@Time 7200 sec	@Time 2.00 hour	
	200	200	
	@Time 10800 sec	@Time 3.00 hour	
	202	202	
	@Time 14400 sec	@Time 4.00 hour	
	206	206	
	@Time 18000 sec	@Time 5.00 hour	
Tensile Strength, Ultimate	600 - 700 MPa	87000 - 102000 psi	
Tensile Strength, Yield	530 - 630 MPa	76900 - 91400 psi	
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	10 - 15 %	10 - 15 %	
Flexural Strength	>= 500 MPa	>= 72500 psi	Limit of elasticity in Bending
Fatigue Strength	245 MPa	35500 psi	
	@# of Cycles 1.00e+7	@# of Cycles 1.00e+7	

Thermal Properties	Metric	English	Comments
CTE, linear	19.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	10.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 20.0 - 300 $^\circ\text{C}$	@Temperature 68.0 - 572 $^\circ\text{F}$	
Specific Heat Capacity	0.370 J/g- $^\circ\text{C}$	0.0884 BTU/lb- $^\circ\text{F}$	
Thermal Conductivity	84.0 W/m-K	583 BTU-in/hr-ft ² - $^\circ\text{F}$	solid solution (or quenched) state
	188.4 W/m-K	1307 BTU-in/hr-ft ² - $^\circ\text{F}$	quenched state
Melting Point	1040 - 1060 $^\circ\text{C}$	1900 - 1940 $^\circ\text{F}$	
Solidus	1040 $^\circ\text{C}$	1900 $^\circ\text{F}$	
Liquidus	1060 $^\circ\text{C}$	1940 $^\circ\text{F}$	

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
	0.00000420 ohm-cm	0.00000420 ohm-cm	precipitation hardened (5 hr)
	0.00000430 ohm-cm	0.00000430 ohm-cm	precipitation hardened (4 hr)
	0.00000440 ohm-cm	0.00000440 ohm-cm	precipitation hardened (3 hr)
	0.00000460 ohm-cm	0.00000460 ohm-cm	precipitation hardened (2 hr)
	0.00000780 ohm-cm	0.00000780 ohm-cm	quenched

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