

Materion ToughMet® T3 CA

Category : Metal , Nonferrous Metal , Copper Alloy

Material Notes:

ToughMet® is Brush Wellman's solution for severe service material problems. By applying their EquaCast® process, tailored alloying additions and spinodal hardening technology, they have engineered ToughMet® to provide attributes beyond those typically found in a high-strength copper alloy. Exceptional resistance to corrosion and cavitation Outstanding lubricity and durability in demanding applications Highly uniform composition in all product forms Uniform microstructure in a variety of wrought shapes and sizes ToughMet® 3 in the wrought and spinodally hardened (AT) condition exhibits tensile strength up to 140 ksi and hardness up to HRc 34 in a Copper-15% Nickel-8% Tin alloy with excellent machinability. Information supplied by Brush Wellman Engineered Materials. Brush Engineered Materials Inc. changed its name to Materion Corporation in March 2011.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Materion-ToughMet-T3-CA.php

Physical Properties	Metric	English	Comments
Density	8.94 g/cc	0.323 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	62 - 75	62 - 75	
Tensile Strength, Ultimate	345 - 517 MPa	50000 - 75000 psi	
Tensile Strength, Yield	138 - 276 MPa @Strain 0.200 %	20000 - 40000 psi @Strain 0.200 %	
Elongation at Break	>= 30 %	>= 30 %	
Modulus of Elasticity	128 GPa	18500 ksi	
Poissons Ratio	0.30	0.30	
Shear Modulus	49.1 GPa	7120 ksi	calculated

Thermal Properties	Metric	English	Comments
CTE, linear	16.4 µm/m-°C @Temperature 21.1 - 102 °C	9.10 µin/in-°F @Temperature 70.0 - 215 °F	
Thermal Conductivity	38.0 W/m-K	264 BTU-in/hr-ft ² -°F	

Component Elements Properties	Metric	English	Comments
Copper, Cu	77 %	77 %	As remainder

Nickel, Ni Component Elements Properties	15 % Metric	15 % English	Comments
Tin, Sn	8.0 %	8.0 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000192 ohm-cm	0.0000192 ohm-cm	Conductivity is 9% IACS
Magnetic Permeability	<= 1.001	<= 1.001	

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