Materion ToughMet® T3 AT110 (OD

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 cavitationOutstanding lubricity and durability in demanding applicationsHighly uniform composition in all product formsUniform microstructure in a variety of wrought shapes and sizesToughMet® 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-AT110-OD.php

Physical Properties	Metric	English	Comments
Density	8.94 g/cc	0.323 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	>= 30	>= 30	
Tensile Strength, Ultimate	>= 862 MPa	>= 125000 psi	
Tensile Strength, Yield	>= 758 MPa @Strain 0.200 %	>= 110000 psi @Strain 0.200 %	
Elongation at Break	>= 10 %	>= 10 %	
Modulus of Elasticity	128 GPa	18500 ksi	
Poissons Ratio	0.33	0.33	
Fatigue Strength	414 MPa @# of Cycles 1.00e+6	60000 psi @# of Cycles 1.00e+6	R = -1, 105 ksi YS
Shear Modulus	47.9 GPa	6950 ksi	calculated

Thermal Properties	Metric	English	Comments
CTE, linear	16.0 µm/m-°C @Temperature 21.1 - 102 °C	8.90 µin/in-°F @Temperature 70.0 - 215 °F	
Thermal Conductivity	38.0 W/m-K	264 BTU-in/hr-ft²-°F	

Component Elements Properties	Metric	English	Comments
Copper, Cu	77 %	77 %	As remainder
Nickel, Ni	15 %	15 %	
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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