



ToughMet® 3 TSI60U Rod

Materion Brush Performance Alloys' ToughMet® 3 TS I60U rod is a spinodal copper nickel tin alloy designed for use in applications such as high performance bearings and bushings requiring high strength and resistance to wear and corrosion.

CHEMICAL COMPOSITION (weight percent)

Alloy	Nickel	Tin	Copper
ToughMet® 3 TS 160U	15	8	Balance

PHYSICAL PROPERTIES

Elastic Modulus	Poisson's Ratio	Electrical Conductivity	Thermal Conductivity	Coefficient of Thermal Expansion	Density	Magnetic Permeability
21 x 10 ⁶ psi 144 kN/mm ²	0.32	<7% IACS <4 MS/m	22 Btu/ft/hr/°F 38 W/m/°C	8.9 x 10 ⁻⁶ in/in/°F 16.1 x 10 ⁻⁶ m/m/°C	0.325 lb/in ³ 9.00 g/cm ³	<1.001

MECHANICAL PROPERTIES

Diameter		0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation	Hardness
inch	mm	ksi	N/mm ²	ksi	N/mm ²	%	HRC
0.4 – 0.75	10 – 19	150	1035	165	1138	7	36
0.75 – 1.6	19 – 41	150	1035	165	1138	5	34
1.6 – 3.25	41 – 82	150	1035	160	1105	3	34

Typical Minimum Values

STANDARD AVAILABILITIES

Sizes: 0.40 to 2.75 inch (10 to 70 mm) diameter
 Length: Nominal 6 to 14 ft (1829 to 4267 mm) with ends
 Surface: Mill hardened finish
 Straightness: <0.25 inch/10 ft (6.35 mm/3048 mm) for 0.4 to 0.74 inch (10 to 19 mm) diameter
 <0.5 inch/10 ft (12 mm/3048 mm) for diameters greater than or equal to 0.75 inch
 Tolerance: +0.005 inch (0.13 mm)/-0 for 0.4 to 0.74 inch (10 to 19 mm) diameter
 +0.02 inch (0.5 mm)/-0 for 0.75 to 1.6 inch (19 to 41 mm) diameter
 +0.08 inch (2 mm)/-0 for 1.6 to 2.75 inch (41 to 70 mm) diameter
 +0.125 inch (3.2mm)/-0 for over 2.75 to 3.25 inch (over 70 to 83 mm) diameter

SPECIFICATIONS/STANDARDS

UNS C72900, ASTM B 249, AMS 4597 for diameters \leq 2.75 inch (70 mm)

RELATED INFORMATION

Additional information on ToughMet® 3 TS 160U rod availability and size capability can be obtained by calling 800-375-4205.

North American Service Centers – Sales Inquiries

For strip, wire and rod under 0.4" (10 mm) diameter

Elmhurst, IL

TOLL FREE: 800.323.2438
LOCAL: +(1) 630.832.9650
FAX: +(1) 630.832.9657

For plate, tube, bar, and rod 0.4" (10 mm) diameter and over
Warren, MI

TOLL FREE: 800.521.8800
LOCAL: +(1) 586.772.2700
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To obtain a complete list of Materion's global distributor/agent network, visit us online at www.materion.com/BrushAlloys/ContactUs.



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MATERION CORPORATION

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