



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 I60U	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 (Min)		Ultimate Tensile Strength (Min)		Elongation (% Min)	Hardness (Min) (HRC)
(inch)	(mm)	(ksi)	(N/mm ²)	(ksi)	(N/mm ²)		
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

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 2.75 to 3.25 inch (70 to 83 mm) diameter

SPECIFICATIONS/STANDARDS

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

RELATED INFORMATION

Additional information on ToughMet® 3 TS I60U rod availability and size capability can be obtained by calling 800-375-4205.



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MATERION CORPORATION

www.materion.com/alloys

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The logo for TOUGHMET, featuring the word "TOUGHMET" in a bold, italicized, sans-serif font with a blue outline, set against a white background.

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