



## ToughMet® 3 TSI20U Rod

Materion Brush Performance Alloys' ToughMet® 3 TS I20U Rod is a spinodal copper nickel tin alloy designed for use in applications demanding wear resistance, high bearing performance, resistance to salt water corrosion and good ductility.

### CHEMICAL COMPOSITION (weight percent)

Alloy	Nickel	Tin	Copper
ToughMet® 3 TS I20U	15	8	Balance

### PHYSICAL PROPERTIES

Elastic Modulus	Poisson's Ratio	Electrical Conductivity	Coefficient of Thermal Expansion	Density	Magnetic Permeability
21 x 10 <sup>6</sup> psi 144 kN/mm <sup>2</sup>	0.3	<7% IACS <4 MS/m	8.9 x 10 <sup>-6</sup> in/in/°F 16.1 x 10 <sup>-6</sup> m/m/°C	0.325 lb/in <sup>3</sup> 9.00 g/cm <sup>3</sup>	<1.001

### MECHANICAL PROPERTIES

Diameter		0.2% Offset Yield Strength (Min)		Ultimate Tensile Strength (Min)		Elongation (Min)	Hardness (Min)		Impact Toughness (CVN)	
(inch)	(mm)	(ksi)	(N/mm <sup>2</sup> )	(ksi)	(N/mm <sup>2</sup> )	(%)	(HRC)	(HBW)	(ft-lbs.)	(J)
0.75 – 1.6	19 - 41	110	755	120	825	15	224	235	15	20
1.6 – 2.75	41 - 70								12	16

### STANDARD AVAILABILITIES

Sizes: .50 to 2.75 inch (13-70 mm) diameter

Length: Nominal 6-12 ft (1829-3658 mm) with ends

Surface: Mill hardened finish

Straightness: <0.5 inch/10 ft (12 mm/3048 mm)

Tolerance: Up to 1.6 inch (41 mm) +0.05 inch (0.5 mm)/-0

1.6-2.75 inch (41-70 mm)+0.08 inch (2 mm)/-0

### SPECIFICATIONS/STANDARDS

UNS C72900, ASTM B 249

### RELATED INFORMATION

Additional information on ToughMet® 3 TS I20U rod availability and size capability can be obtained by calling 800-375-4205.



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#### MATERION CORPORATION

[www.materion.com/alloys](http://www.materion.com/alloys)

**AD0051\_0311**

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The logo for TOUGHMET, featuring the word "TOUGHMET" in a bold, italicized, sans-serif font with a horizontal line through the middle of the letters.

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