

# COPPER 102



## COPPER 102 (UNS C10200)

Copper 102 is an oxygen-free copper with extremely high electrical conductivity and good formability. These characteristics make it particularly useful for electrical connectors.

### GENERAL INFORMATION

Copper 102 can be deep-drawn from the annealed temper. It is corrosion resistant in normal atmosphere and water. A thin adherent oxide film forms at elevated temperatures which prevents particle contamination and enhances glass to metal seals. The Copper 102 can be readily soldered and brazed. The absence of oxygen makes welds free of inclusions.

### AVAILABILITY

Copper 102 is available from Hamilton Precision Metals as strip product in thicknesses from 0.0005" to 0.010" (0.0127 mm to 0.254 mm) in widths up to 12.0" (304.8 mm). The material conforms to ASTM B 152 and UNS C10200. It is also available in thickness less than 0.0005" (0.0127 mm) in widths up to 4.000" (101.6 mm) maximum.



## Technical Data

TYPICAL MECHANICAL PROPERTIES <sup>1</sup>		
	ANNEALED	COLD ROLLED
Ultimate Tensile Strength	35,000 PSI	57,000 PSI
Yield Strength (0.2% Offset)	10,000 PSI	53,000 PSI
Elongation in 2" *	40%	2%
Grain Size	0.020 mm	
Modulus of Elasticity (Tension)	17 x 10 <sup>6</sup> PSI	
Poisson's Ratio	0.32	

\*The measured elongation will be less as thickness decreases to 0.002" and less.

<sup>1</sup> These values may be adjusted by control of process variables – consult HPM for desired values.

NOMINAL COMPOSITION	
Copper	99.95%

PHYSICAL PROPERTIES <sup>2</sup>	
Density	0.323 lbs/cu.in.
Melting Point (Approx.)	1080°C
Electrical Resistivity @ R.T.	1.71 Microhm · cm
Temperature Coefficient of Resistivity (0 to 100°C)	3900 PPM/°C
Electrical Conductivity @ R.T.	586 MEGMHO · cm
Thermal Expansion Coefficient (20° to 100°C)	7.0 X 10 <sup>-6</sup> /°C
Thermal Conductivity @ R.T.	390 W/m · K
Magnetic Attraction	None

<sup>2</sup> Typical values to guide alloy selection but are not a guarantee of minimum or maximum.

Disclaimer: The information contained within this data sheet is for guidance only and is not intended for warranty of individual application - express or implied.