HM Wire International, Inc.

Ph: 330-244-8501 Fax: 330-244-8561

www.litz-wire.com info@litz-wire.com www.hmwire.com

REQUEST A QUOTATION

Alloy 10 - UNS # C11000 - Electrolytic Tough Pitch Copper

Description:	Electrolytic-Tough-Pitch (ETP). This is the most common copper. It is universal for electrical applications. ETP has a minimum conductivity rating of 100% IACS and is required to be 99.9% pure. It has 0.02% to 0.04% oxygen content (typical). Most ETP sold today will meet or exceed the 101% IACS specification. As with OF copper, silver (Ag) content is counted as copper
Applications:	Used for electrical and electronic conductors, wave guides, cavity resonators, superconductor matrixes, vacuum tube and solid-state devices, and glass-to-metal seals.

Chemical Composition

Nominal Composition	Cu%	O%
	99.9	0.04

Mechanical Properties for Round Wire

Temper	Tensile Strength		Elongation %
	KSI*	Mpa**	
Hard (H)	55	379	1.5 in 60 in.
Spring	66	455	1.5 in 60 in.

Mechanical Properties for Rolled, Flat, Square and Rectangular Wire

Designation		Tensile Strength		Elongation %
STD	Former	KSI	Mpa	(2" min gauge length)
--	0.050 MM	32	221	45
--	0.025 MM	34	234	45
--	⅛ Hard	36	248	30
--	¼ Hard	38	262	25
--	½ Hard	42	290	14
H04	Hard	50	345	6
H08	Spring	55	379	4
H10	Extra Spring	57	393	4

*To be used as a guideline only.

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Physical Properties

	English Units		Metric Units
Melting Range	1981°F		1083°C
Density	0.321 lb/cu.in. @ 68 °F		8.89 gm/cm @ 20°C
Specific Gravity	8.94		8.94
Coefficient of Thermal Expansion	0.0000098 per °F (68 - 572°F)		0.0000173 per °C (20 - 300°C)
Thermal Conductivity	226 BTU/sq ft/ft/hr/°F @ 68 °F		0.934 cal/sq cm/cm/sec/°C @ 20°C
Electrical Resistivity (Annealed)	10.3 Ohms-circ mil/ft @ 68 °F		1.71 microhm-cm @ 20°C
Electrical Conductivity (Annealed)	100% Copper IACS @ 68 °F		0.586 megohm cm @ 20°C
Specific Heat	0.092 BTU/lb/°F @ 68 °F		0.092 cal/gm/°C @ 20°C
Modulus of Elasticity (tension)	17,000 KSI		12,100 kg/sq mm
Modulus of Rigidity (torsion)	6400 KSI		4500 kg/sq mm
Annealing Temperature	700 - 1200 °F		375 - 650 °C

*To be used as a guideline only.

R1.05.04.2011