

Lubronze provides an answer to designers requirements for a high strength copper alloy with good resistance to dezincification corrosion and stress-corrosion cracking. Commonly used in automotive terminals, C422 provides mechanical properties and performance very similar to that of high-zinc brass alloys with the added benefit of improved resistance to stress relaxation. Also a cost effective alternative to Phosphor Bronze, C422 is ideal for a range of applications where similar performance is required.

Chemical Composition

Copper¹	86.0-89.0%
Tin	0.8-1.4%
Zinc	Remainder
Iron	0.05% Max
Lead	0.05% Max
Phosphorous	0.35% Max

¹ Copper plu named elements, 99.7% min.

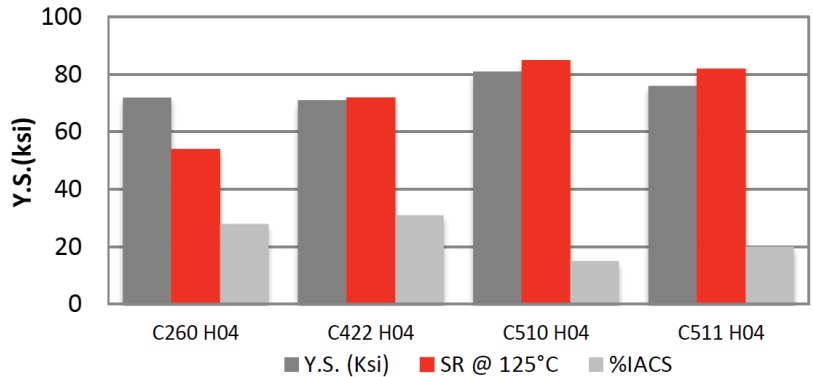


Figure 1: Comparison of Yield Strength, % Stress Remaining @ 1000hrs and Electrical Conductivity performance of various connector materials.

Physical Properties

	English Units	Metric Units
Density	0.318 lb/in ³ @ 68°F	8.80 g/cm ³
Thermal Conductivity	75 BTU-ft/ft ² -hr-°F	130 W/m ² K
Electrical Resistivity	33.0 ohm circ mils/ft	5.50 microhm-cm
Electrical Conductivity (annealed)	31% IACS*	0.180 megamho/cm
Modulus of Elasticity	16,000,000 psi	112 kN/mm ²
Thermal Capacity(Specific Heat)	0.090 Btu/lb/F ^o @ 68°F	0.090 cal/gm/C ^o @ 20°C
Coeff. Of Thermal Expansion 68-572°F (20-300°C)	10.2 PPM/°F	18.36 PPM/°C

*International Annealed Copper Standard

Mechanical Properties

Temper ¹	Tensile Strength		Yield Strength ²		% Elongation ²	Typical 90° Bend Formability GW/BW ³	
	ksi	N/mm ²	ksi	N/mm ²			
Annealed	41-49	285-340	19	130	45	-	-
1/4 Hard	47-57	325-395	38	260	29	-	-
1/2 Hard	54-65	370-450	55	380	16	-	-
3/4 Hard	60-72	415-495	64	440	7	-	0.5
Hard	67-79	460-545	71	490	4	0.5	1.5
Extra Hard	75-85	515-585	75	515	2	1.0	2.5
Spring Hard	82-92	565-635	82	565	2	1.5	4.0
Extra Spring	88 min	605 min	82min	565 min	2 max		

¹ Mechanical properties subject to change. All tempers listed are made to a Tensile Strength specification unless otherwise noted.

² Nominal Values ³ DATA FOR REFERENCE ONLY. R/T = Bend Radius/Material Thickness <0.016" (0.4mm) thick, 11/16 (17.5mm) wide.