



C122 is a copper that has been deoxidized with phosphorus and is excellent for deep drawing and other applications that require severe forming. It has the added advantage of being free from risk of hydrogen embrittlement when heated for brazing, welding, soldering or annealing in atmospheres containing hydrogen. Primarily used in pipes caps, brazed heat exchangers other applications that require high termperature joining or severe forming, C122 is also used in many electrical applications.

Chemical Composition

 Copper¹
 99.9% Min

 Phosphorus
 0.015-0.040%

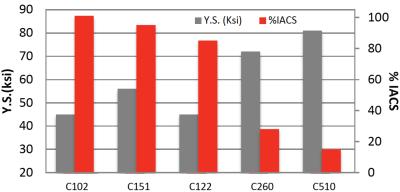


Figure 1: Comparison of Yield Strength and Electrical Conductivity performance of select Hard temper copper based materials.

Physical Properties English Units Metric Units 0.323 lb/in³ @ 68°F 8.94 g/cm³ Density 196 BTU-ft/ft²-hr-°F 339 W/mK Thermal Conductivity 12.2 ohm circ mils/ft Electrical Resistivity 2.03 microhm-cm Electrical Conductivity (annealed) 85 % IACS* 0.493 megamho/cm Modulus of Elasticity 117 kN/mm² 17,000,000 psi Coeff. Of Thermal Expansion 68-572°F (20-300°C) 9.8 PPM/°F 17.64 PPM/°C *International Annealed Copper Standard

Mechanical Properties							
Temper ¹	Tensile Strength		Yield Strength		Typical 90° Bend		
				% Elongation ²		Formability	
	ksi	N/mm ²	ksi	N/mm ²		GW/BW ³	
Annealed (Soft) ⁴	26-38	180-260	10	70	35	-	-
1/4 Hard	34-42	235-290	32	220	23	-	-
1/2 Hard	37-46	255-315	37	255	20	0.3	0.5
3/4 Hard	41-50	285-345	43	295	14	0.5	1.0
Hard	43-52	295-360	45	310	9	1.0	1.3
Extra Hard	47-56	325-385	50	345	4	1.5	1.8
Spring	50-58	345-400	52	360	3	2.0	2.5
Extra Spring	52 min	360 min	51 min	350 min	3 max		

¹ Mechanical properties subject to change. All rolled- tempers are accepted or rejected based on Tensile Strength.

Copper values includes Ag.

² Nominal Values in 2" (51mm) ³ DATA FOR REFERENCE ONLY. R/T = Bend Radius/Material Thickness <0.016" (0.4mm) thick, 11/16 (17.5mm) wide.

⁴ Annealed temper are manufactured to a grain size only, consult mill for additional info.