ALLOY DATA

C72500
ASTM B122

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Developed by Bell Laboratories to solve issues of stress corrosion found in field parts, C725 has found application in the telecommunication industry for many years. A combination of very good fatigue strength and resistance to corrosion and tarnish have also made this alloy an excellent choice for other applications found in corrosive environments or applications requiring improved solderability.

Chemical Composition

Copper[1]	**Remainder**
Nickel[2]	**8.5-10.5%**
Tin	**1.8-2.8%**
Iron	0.60% Max
Lead	0.05% Max
Manganese	0.20% Max
Zinc	0.50% Max

[1] Cu includes Ag; Copper plus named elements = 99.8%

[2] Ni Values Include Co

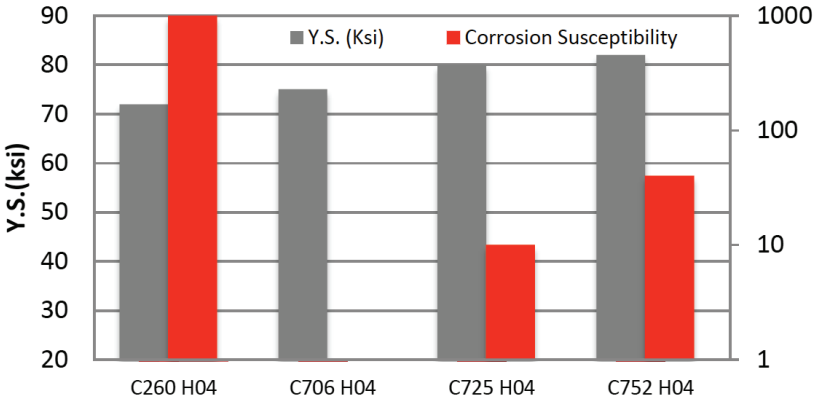

Figure 1: Comparison of Yield Strength and relative susceptibility to stress corrosion (Mattsson's solution and moist ammonia, 1000 = most susceptible).

Physical Properties

	English Units	Metric Units
Density	0.321 lb/in^3 @ 68ºF	8.89 g/cm^3
Thermal Conductivity	31 BTU-ft/ft^2-hr-ºF	54 W/mºK
Electrical Resistivity	94.3 ohm circ mils/ft	15.7 microhm-cm
Electrical Conductivity (annealed)	11% IACS*	0.064 megamho/cm
Modulus of Elasticity	20,000,000 psi	138 kN/mm^2
Thermal Capacity(Specific Heat)	0.090 Btu/lb/Fº @ 68ºF	377.1 J/kg · ºC @ 20ºC
Coeff. Of Thermal Expansion		
68-572ºF (20-300ºC)	9.2 PPM/ºF	16.6 PPM/ºC

*International Annealed Copper Standard

Mechanical Properties

Temper[1]	Tensile Strength		Yield Strength[2]		% Elongation[2]	Typical 90º Bend Formability GW/BW[3]	
	ksi	N/mm^2	ksi	N/mm^2			
Annealed	45-65	310-450	21	145	35	-	-
1/4 Hard	55-75	380-515	63	435	15	0.8	0.8
1/2 Hard	65-80	450-550	68	470	10	1.5	1.5
Hard	75-90	515-620	80	550	3	2.0	2.0
Extra Hard	80-95	550-655	85	585	2	2.3	2.5
Spring	85-100	585-690	90	620	1 min	2.5	3.5
Extra Spring	90-105	620-725	95	655	1 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.