ALLOY DATA

C76200
ASTM B122

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Born of necessity during war years, C762 was developed to conserve nickel for national defense. Principally used for electrical relay springs and contact spring this alloy offers a unique combination of stiffness and strength required for such applications. Its work-hardening rate is high compared to other copper alloys which is especially valuable when the functional strength of a part must be raised during forming. C762 also offer an attractive nickel silver color that can be used in decorative applications.

Chemical Composition

Copper[1]	**57.0-61.0%**
Nickel[2]	**11.0-13.5%**
Zinc	**Remainder**
Iron	0.25% Max
Lead	0.09% Max
Manganese	0.50% Max

[1] Cu includes Ag; Copper plus named elements = 99.5%

[2] Ni Values Include Co

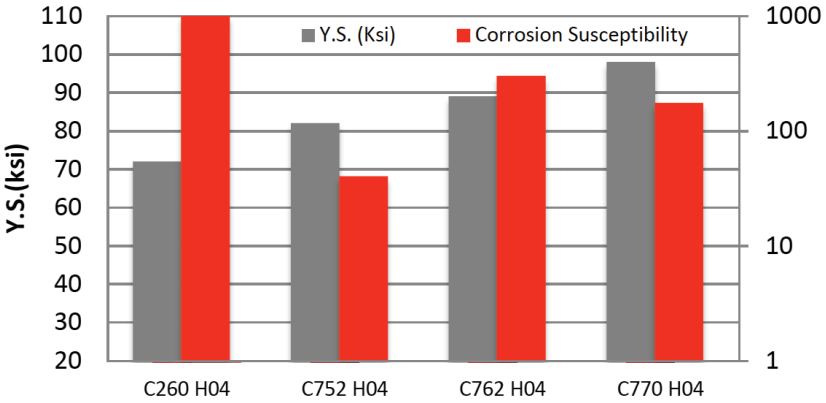

Figure 1: Comparison of Yield Strength and relative susceptibility to stress corrosion (Mattsson's solution and moist ammonia, 1000 = most susceptible).

Physical Properties

	English Units	Metric Units
Density	0.310 lb/in^3 @ 68ºF	8.58 g/cm^3
Thermal Conductivity	24 BTU-ft/ft^2-hr-ºF	41.5 W/mºK
Electrical Resistivity	115 ohm circ mils/ft	19 microhm-cm
Electrical Conductivity (annealed)	9% IACS*	0.05 megamho/cm
Modulus of Elasticity	18,000,000 psi	124 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)	9.0 PPM/ºF	16.2 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	57-75	395-515	36	250	40	-	-
1/4 Hard	65-81	450-560	52	360	35	1.0	1.0
1/2 Hard	75-91	515-625	70	485	18	1.3	1.3
3/4 Hard	83-98	570-675	82	565	10	1.5	1.5
Hard	90-105	620-725	89	615	4	2.0	2.0
Extra Hard	101-114	695-785	98	675	2	2.5	2.5
Spring	109-122	750-840	105	725	1 Max	3.0	3.0
Extra Spring	114 min	785 min	102 min	705 min	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.