ALLOY DATA

C19020
ASTM B422

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Olin Brass introduces Alloy C19020 to meet the needs of the automotive, electronic and electrical markets. This alloy is licensed by Olin Brass from Dowa Metals in Japan. It was developed as Alloy NB105 to meet increasing requirements of current carrying capacity, stiffness, formability and service temperature survivability being demanded by the automotive and electronic industries. For higher electrical conductivity or strength requirements, consider C19720 or C18080.

Chemical Composition

Copper[1]	**Remainder**
Nickel	**0.50-3.0%**
Tin	**0.30-0.9%**
Phosphorous	**0.01-0.20%**

1. Cu plus Named Elements = 99.8%

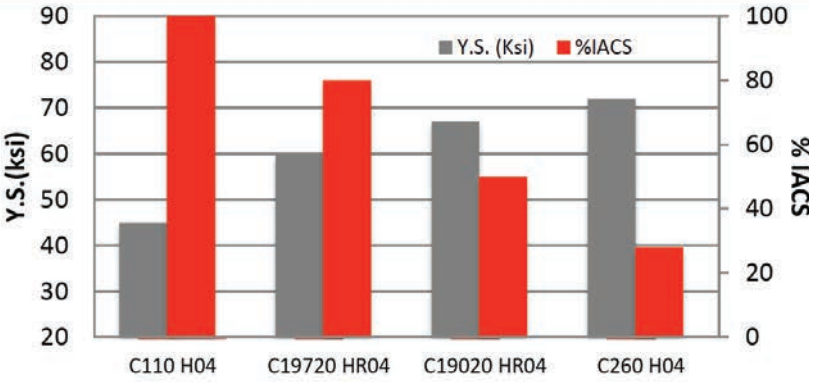

Figure 1: Comparison of Yield Strength and Electrical Conductivity performance of select automotive connector materials.

Physical Properties

	English Units	Metric Units
Density	0.322 lb/in^3 @ 68ºF	8.91 g/cm^3
Thermal Conductivity	115 BTU-ft/ft^2-hr-ºF	200 W/mºK
Electrical Resistivity	20.74 ohm circ mils/ft	3.45 microhm-cm
Electrical Conductivity (annealed)	50% IACS*	0.290 megamho/cm
Modulus of Elasticity	18,800,000 psi	129 kN/mm^2
Coeff. Of Thermal Expansion		
68-572ºF (20-300ºC)	9.7 PPM/ºF	17.5 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			
1/2 Hard	58-70	400-485	63	435	7	0.5	0.5
Hard	65-74	450-510	67	460	5	0.8	1.0
Extra Hard	71-80	490-550	73	505	4	1.3	1.8
Spring Hard	77 Min	530 Min	74 Min	510 min	3	2.0	2.8

[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.