

A proven alloy in applications from automotive terminals to miniaturized electronic connectors, C19010 is versatile option for terminal designers looking for enhanced material performance over traditional high-copper alloys. A combination of high strength and good electrical conductivity are achieved in this precipitation-hardened alloy through a precision controlled process designed to optimize the alloys performance while retaining excellent formability.

Chemical Composition

Copper¹	Remainder
Nickel	0.8 - 1.80%
Silicon	0.15 -0.35%
Phosphorus	0.01-0.05%

¹ Copper plus named elements, 99.5%

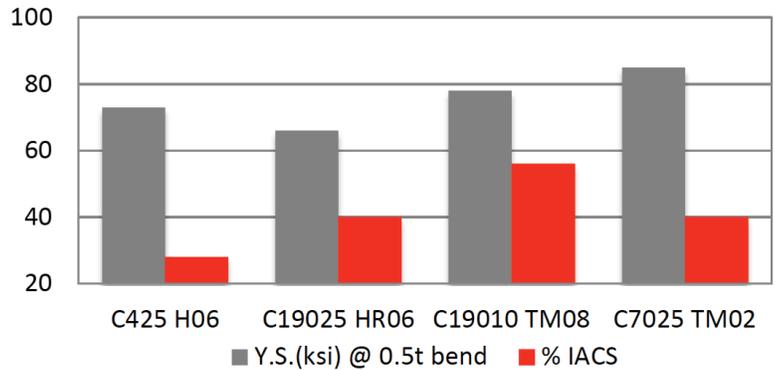


Figure 1: Comparison of max Yield Strength at 0.5t bends and Electrical Conductivity of various automotive terminal materials

Physical Properties

	English Units	Metric Units
Density	0.323 lb/in ³ @ 68°F	8.94 g/cm ³
Thermal Conductivity	150 BTU-ft/ft ² -hr-°F	260 W/mK
Electrical Resistivity	18.5 ohm circ mils/ft	3.078 microhm-cm
Electrical Conductivity (annealed)	55% IACS*	0.325 megamho/cm
Modulus of Elasticity	18,500,000 psi	130 kN/mm ²
Coeff. Of Thermal Expansion 68-572°F (20-300°C)	9.3 PPM/°F	16.8 PPM/°C

*International Annealed Copper Standard

Mechanical Properties

Temper ¹	Tensile Strength		Yield Strength		% Elongation ²	Typical 90° Bend Formability GW/BW ³	
	ksi	N/mm ²	ksi	N/mm ²			
TM00 ⁴	-	-	-	-	-	-	-
TM02 ⁴	-	-	-	-	-	-	-
TM04 ⁴	-	-	-	-	-	-	-
TM06 ⁴	-	-	-	-	-	-	-
TM08	84-94	580-650	78 min	540 min	8 min	0.5	0.7

¹ Mechanical properties subject to change. All tempers listed are made to a Yield Strength specification.

² Nominal Values in 2" (51mm)

³ R/T = Bend Radius/Material Thickness <0.016" (0.4mm) thick, 11/16 (17.5mm) wide.

⁴ Consult mill for temper availability