



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			
Copper ¹	Remainder		
Nickel	0.8 - 1.80%		
Silicon	0.15 -0.35%		
Phosphorus	0.01-0.05%		
¹ Copper plus named elements, 99.5%			



C425 H06 C19025 HR06 C19010 TM08 C7025 TM02 ■ Y.S.(ksi) @ 0.5t bend ■ % IACS

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 @ 68ºF	8.94 g/cm ³					
Thermal Conductivity	150 BTU-ft/ft ² -hr-⁰F	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/ºF	16.8 PPM/ºC					
*International Annealed Copper Standard							

Mechanical Properties										
Temper ¹	Tensile	Strength	ngth Yield Strength		% Elongation ²	Typical 90º Bend Formability				
	ksi	N/mm ²	ksi	N/mm ²		GW/BW ³				
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 Yeild Strength specification.

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

⁴Consult mill for temper availability

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