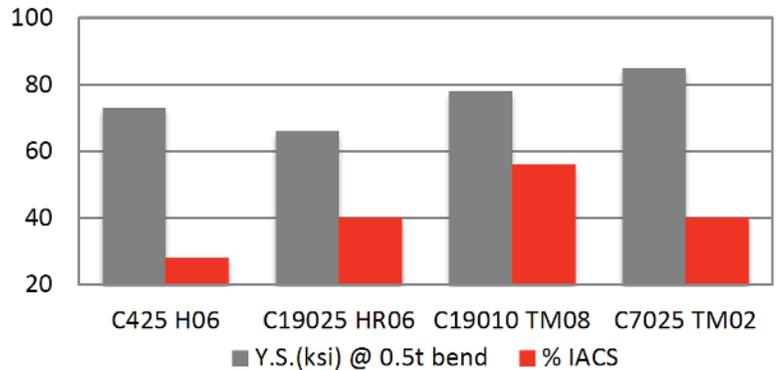


A proven alloy in applications from automotive terminals to miniaturized electronic connectors, C19010 is versatile option for terminal designers looking for enhanced material performance over traditional high-copper alloys. A combination of high strength and good electrical conductivity are achieved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

### Chemical Composition

<b>Copper<sup>1</sup></b>	<b>Remainder</b>
<b>Nickel</b>	<b>0.8 - 1.80%</b>
<b>Silicon</b>	<b>0.15 -0.35%</b>
<b>Phosphorus</b>	<b>0.01-0.05%</b>

<sup>1</sup> 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 <sup>3</sup> @ 68°F	8.94 g/cm <sup>3</sup>
Thermal Conductivity	150 BTU-ft/ft <sup>2</sup> -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 <sup>2</sup>
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 <sup>1</sup>	Tensile Strength		Yield Strength		% Elongation <sup>2</sup>	Typical 90° Bend Formability GW/BW <sup>3</sup>	
	ksi	N/mm <sup>2</sup>	ksi	N/mm <sup>2</sup>			
TM00 <sup>4</sup>	-	-	-	-	-	-	-
TM02 <sup>4</sup>	-	-	-	-	-	-	-
TM04 <sup>4</sup>	-	-	-	-	-	-	-
TM06 <sup>4</sup>	-	-	-	-	-	-	-
TM08	84-94	580-650	78 min	540 min	8 min	0.5	0.7

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

<sup>2</sup> Nominal Values in 2" (51mm)

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

<sup>4</sup> Consult mill for temper availability