

Olin Brass Alloy C19720 is a dispersion strengthened, high conductivity copper alloy with mechanical and physical properties identical to Olin Brass C19700. C19720 was developed by modifying the chemistry of C197 in order to produce an alloy with improved reliability at elevated temperatures. C197 performs well up to 115°C, however, C19720 will maintain at least 70% of its initial stress after exposure to 125°C for 3000 hours and 150°C for 1000 hours. C19720 is a ideal fit for active contact applications in automotive power distribution where high current-carrying capability and good strength are required.

### Chemical Composition

<b>Copper<sup>1</sup></b>	<b>Remainder</b>
<b>Iron</b>	<b>0.05-0.50%</b>
<b>Magnesium</b>	<b>0.06-0.20%</b>
<b>Phosphorus</b>	<b>0.05-0.15%</b>
Tin	0.20% max
Zinc	0.20% max
Nickel	0.10% max
Lead	0.05% max
Manganese	0.05% max

1. Cu plus Named Elements, 99.5%

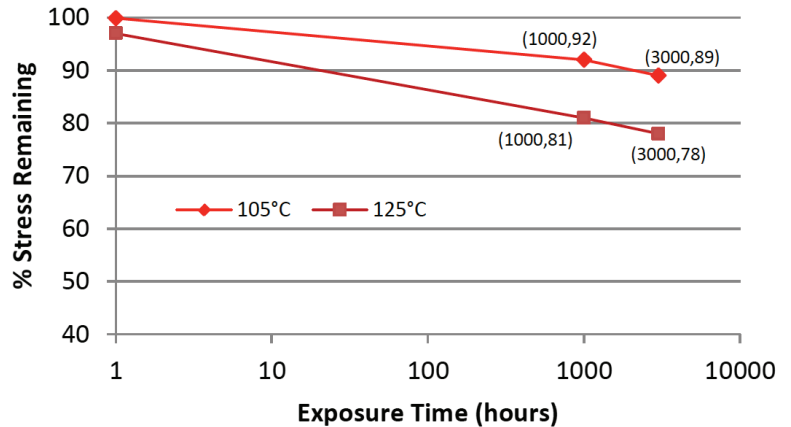


Figure 1: C19720 Stress Relaxation Performance.

### Physical Properties

	English Units	Metric Units
Density	0.319 lb/in <sup>3</sup> @ 68°F	8.84 g/cm <sup>3</sup>
Thermal Conductivity	185 BTU-ft/ft <sup>2</sup> -hr-°F	320 W/m <sup>2</sup> K
Electrical Resistivity	13 ohm circ mils/ft	2.16 microhm-cm
Electrical Conductivity (annealed)	80% IACS*	0.464 megamho/cm
Modulus of Elasticity	17,200,000 psi	118 kN/mm <sup>2</sup>
Thermal Capacity(Specific Heat)	0.090 Btu/lb/F° @ 68°F	377.1 J/kg · °K at 293 K
Coeff. Of Thermal Expansion 68-212°F (20-100°C)	9.60 PPM/°F	17.28 PPM/°C

\*International Annealed Copper Standard

### Mechanical Properties

Temper <sup>1</sup>	Tensile Strength		Yield Strength <sup>2</sup>		% 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>			
1/2 Hard	53-63	365-435	48	330	17	0.5	0.5
Hard	60-70	415-480	60	415	7	0.8	0.8
Extra Hard	67-73	460-505	67	460	6	1.2	1.2

<sup>1</sup> Mechanical properties subject to change. All tempers listed are made to a Tensile Strength specification unless otherwise noted.

<sup>2</sup> Nominal Values      <sup>3</sup> DATA FOR REFERENCE ONLY. R/T = Bend Radius/Material Thickness <0.020" (0.4mm) thick, 11/16 (17.5mm) wide.