

# C51900 (CuSn6) 18 08 US

Comparable standards: UNS C51900 • EN CW452K • JIS C5191  
 Aurubis designations: C519 • PNA282

**Description** CuSn6 is a solid solution strengthened copper alloy (bronze) with 6% tin. Its high tin content results in high strength and good spring properties. It is wear-resistant, has very good corrosion resistance and can easily be soldered. CuSn6 is used for all types of springs as well as for flexible metal hoses. In addition, it is applied in the paper, pulp, textile and chemical industries, as well as in shipbuilding, mechanical engineering and process equipment manufacture.

**Composition**

Cu	Sn	P	Zn
[%]	[%]	[%]	[%]
rem.	5.5 – 7.0	0.03 - 0.18	max. 0.1

**Physical properties**

Melting point	Density	Specific heat cap. at 20°C	Electrical cond.	Thermal cond. at 20°C	Mod. of elasticity	Coef. of therm exp. at 20°C
[°F] [°C]	[lb/in <sup>3</sup> ] [g/cm <sup>3</sup> ]	[Btu/lb °F] [kJ/kgK]	[%IACS] [MS/m]	[Btu/ft h °F] [W/mK]	x1000 ksi [GPa]	[10 <sup>-6</sup> /°F] [10 <sup>-6</sup> /K]
1904 1040	0.318 8.80	0.09 0.377	15.5 9.0	43 75	17.1 118	10.3 18.5

The specified conductivity applies to the soft condition only

**Mechanical properties**

	Tensile strength Rm	Yield strength Rp0.2 min	Elongation 2'' min	Hard-ness HR30T HV	min bend ratio 90°		min. bend ratio 180°	
	[ksi] [MPa]	[ksi] [MPa]	[%]		GW	BW	GW	BW
O60	48-63 331-434			25-57				
H02	64-79 441-545	72 496	25	58-72				
H04	80-96 552-662	88 607	13	72-78				
H06	92-107 634-738	100 689	6					
H08	99-114 683-786	107 738	4					
H10	104-117 717-807	111 765	2					

Other tempers are available upon request.  
 GW bend axis transverse to rolling direction. BW bend axis parallel to rolling direction

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<b>Fabrication properties</b>	Cold formability	excellent
	Hot formability	poor
	Soldering	excellent
	Brazing	excellent
	Oxyacetylene welding	good
	Gas shield arc welding	good
	Resistance welding	good

**Typical uses** Automotive, Electrical engineering, Connectors, Springs