

Alloy Designation	
EN	CuSn6
DIN CEN/TS 13388	CW452K
UNS	C51900

Chemical Composition (Balance)		
Weight percentage		
Cu	Rest	%
Sn	6	%
P	0.1	%

Characteristics
CuSn6 provides an excellent combination of strength, cold formability and hardness. It is wear resistant, has good corrosion resistance and soldering properties.
Due to its high strength and good spring properties combined with good machining properties it is used for all kind of springs, Connectors, Bourdon tubes or flexible metal tubes.

Main Applications
Stamped parts, Connectors, Contact springs, Spring elements, Ultra high strength spring elements, Membranes, Switch elements, Fixed contacts.

Mechanical Properties (EN 1652)

Temper	Tensile Strength	Yield Strength	Yield Strength	Elongation	Hardness *	Bendability	
	Rm	Standard	Bending optimized	Bending optimized min. A _{50mm}	HV	gw	bw
<small>* Only information ** Thickness 0.15 - 0.60 mm</small>	MPa	MPa	MPa	%	HV	rel. Bending Radius R/T	
R350	350 .. 420	≤ 300 *		45	80 .. 120	0	0
R420	420 .. 520	≥ 350	≥ 340	29	120 .. 170	0	0
R500	500 .. 590	≥ 450	≥ 410	22	160 .. 190	0	0
R560	560 .. 650	≥ 520	≥ 490	15	180 .. 210	0	0
R640	640 .. 730	≥ 590	≥ 570	12	200 .. 230	0	0.5
R720	≥ 720	≥ 650	≥ 620	4	≥ 210	1	-
R850 **	≥ 850		≥ 800	1.5	≥ 240	1	-

Physical Properties			
Typical values in annealed temper at 20 °C			
Density		8.95	g/cm ³
Thermal expansion coefficient	20 .. 300 °C	18.5	10 ⁻⁶ /K
Specific heat capacity		0.377	J/(g·K)
Thermal conductivity		75	W/(m·K)
Electrical conductivity	MS/m	9	MS/m
Electrical conductivity	IACS	16	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	0.7	10 ⁻³ /K
Modulus of elasticity	GPa	115	GPa

Fabrication Properties *	
Cold Forming Properties	Excellent
Machinability (Rating 20)	Less suitable
Electroplating Properties	Excellent
Hot Tinning Properties	Excellent
Soft Soldering, Brazing	Excellent / Good
Resistance Welding	Good
Gas Shielded Arc Welding	Good
Laser Welding	Good

* For more details call our technical service