

Alloy Designation	
EN	CuSn4
DIN CEN/TS 13388	CW450K
UNS	C51100

Chemical Composition (Balance)		
Weight percentage		
Cu	Rest	%
Sn	4	%
P	0.1	%

Characteristics
<b>CuSn4</b> provides an excellent combination of strength, excellent formability and hardness. It has a good electrical conductivity and corrosion resistance. Soldering and brazing properties are excellent.

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 *	Bending	
	Rm	Standard	Bending optimized	Bending optimized (min.)	HV	gw	bw
* Only information	MPa	MPa	MPa	A <sub>50mm</sub>	HV	rel. Bending Radius R/T	
	MPa	MPa	MPa	%	HV	Strip Thickness ≤ 0.50mm	
<b>R290</b>	290 .. 390	≤ 190 *		40	70 .. 105	0	0
<b>R390</b>	390 .. 490	≥ 320	≥ 250	20	115 .. 155	0	0
<b>R480</b>	480 .. 570	≥ 440	≥ 400	13	150 .. 180	0	0
<b>R540</b>	540 .. 630	≥ 480	≥ 450	12	160 .. 200	0	0
<b>R600</b>	600 .. 760	≥ 560	≥ 530	12	≥ 180	0	0
<b>R660</b>	660 .. 760	≥ 620	≥ 590	7	≥ 180	0	0
<b>R700</b>	700 .. 800	-	≥ 640	3	≥ 190	0	0

Physical Properties			
Typical values in annealed temper at 20 °C			
Density		8.94	g/cm <sup>3</sup>
Thermal expansion coefficient	20 .. 300 °C	17.8	10 <sup>-6</sup> /K
Specific heat capacity		0.377	J/(g·K)
Thermal conductivity		100	W/(m·K)
Electrical conductivity	MS/m	12	MS/m
Electrical conductivity	IACS	21	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	0.1	10 <sup>-3</sup> /K
Modulus of elasticity	GPa	110	GPa

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

\*For more details call our technical service