

Alloy Designation	
EN	CuSn5
DIN CEN/TS 13388	CW451K
UNS	C51000

Chemical Composition (Balance)		
Weight percentage		
Cu	Rest	%
Sn	5	%
P	0.1	%

Characteristics
CuSn5 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	optimized quality 90°
* only information	MPa	MPa	MPa	A _{50mm}	HV	gw rel. Bending Radius R/T
	MPa	MPa	MPa	%	HV	Strip Thickness ≤ 0.50mm
R310	310 .. 390	≤ 250 *			70 ..105	0 0
R400	400 .. 500	≥ 340		17	120 .. 160	0 0
R490	490 .. 580	≥ 450	≥ 440	19	160 .. 190	0 0
R550	550 .. 640	≥ 500	≥ 480	13	180 .. 210	0 0.5
R630	630 .. 720	≥ 570	≥ 560	7	200 .. 230	0 1
R690	≥ 690	≥ 630	≥ 600	4	≥ 220	2 3

Physical Properties			
Typical values in annealed temper at 20 °C			
Density		8.94	g/cm ³
Thermal expansion coefficient	20 .. 300 °C	17.8	10 ⁻⁶ /K
Specific heat capacity		0.38	J/(g·K)
Thermal conductivity		90	W/(m·K)
Electrical conductivity	MS/m	10	MS/m
Electrical conductivity	IACS	17	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	0.1	10 ⁻³ /K
Modulus of elasticity	GPa	120	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