

# C52100

## CuSn8

Alloy Designation	
EN	CuSn8
DIN CEN/TS 13388	CW453K
UNS	C52100

Chemical Composition (Balance)		
Weight percentage		
Cu	Rest	%
Sn	8	%
P	0.1	%

### Mechanische Eigenschaften (EN 1652)

Temper	Tensile Strength Rm	Yield Strength Standard Rp <sub>0.2</sub>	Yield Strength Bending optimized Rp <sub>0.2</sub>	Elongation Bending optimized min. A <sub>50mm</sub>	Hardness * HV	Bendability 90°	
						gw rel. Bending Radius R/T	bw
<small>* Only information ** Thickness 0.15 - 0.60 mm</small>	MPa	MPa	MPa	%	HV	Banddicke ≤ 0.50mm	
R370	370 .. 450	≤ 300 *			80 .. 120	0	0
R450	450 .. 550	≥ 370	≥ 350	35	120 .. 175	0	0
R540	540 .. 630	≥ 460	≥ 440	27	170 .. 200	0	0
R600	600 .. 690	≥ 520	≥ 480	20	180 .. 210	0	0
R660	660 .. 750	≥ 600	≥ 580	14	210 .. 240	0	2
R740	740 .. 810	≥ 680	≥ 660	8	210 .. 260	2	3
R800 **	800 .. 930	≥ 720	≥ 700	-	230 .. 290	-	-
R850 **	≥ 850	-	≥ 800	-	≥ 240	-	-

### Physical Properties

Typical values in annealed temper at 20 °C			
Density		8.96	g/cm <sup>3</sup>
Thermal expansion coefficient	20 .. 300 °C	18.0	10 <sup>-6</sup> /K
Specific heat capacity		0.377	J/(g·K)
Thermal conductivity		67	W/(m·K)
Electrical conductivity	MS/m	6.5	MS/m
Electrical conductivity	IACS	11	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	0.065	10 <sup>-3</sup> /K
Modulus of elasticity	GPa	109	GPa

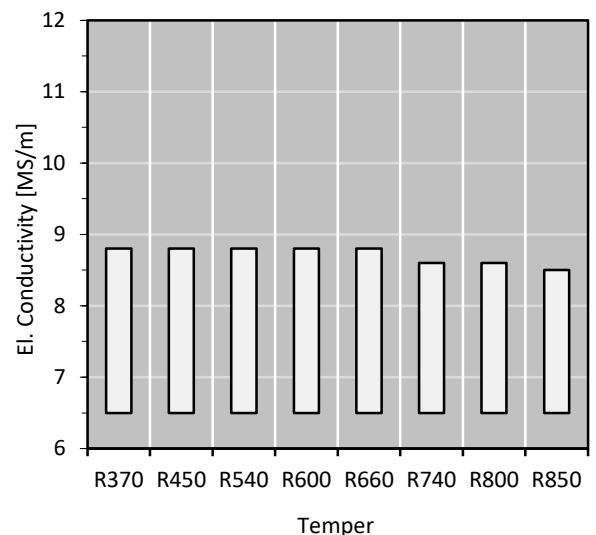
### Characteristics

**CuSn8** strips provide a better corrosion resistance compared to bronze with lower tin-content, combined with higher strength and good slip properties. It is wear resistant, has excellent spring properties, good cold forming and soldering properties.

### Main Applications

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

### Electrical Conductivity



#### Fabrication Properties \*

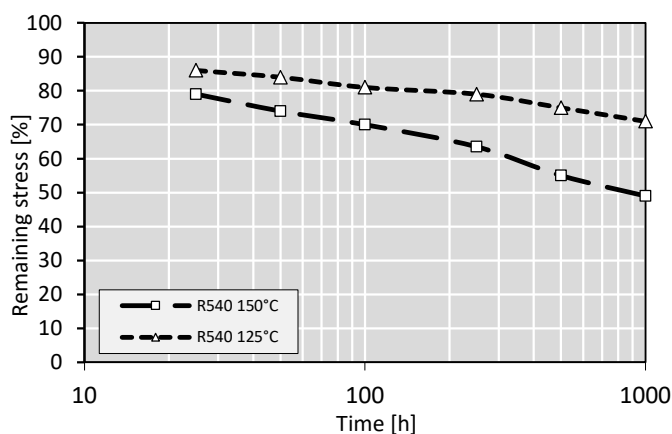
Cold Forming Properties	Excellent
Machinability (Rating 20)	Less suitable
Electroplating Properties	Excellent
Hot Tinning Properties	Excellent
Soft Soldering, Brazing	Excellent
Resistance Welding	Good
Gas Shielded Arc Welding	Good
Laser Welding	Good

\* For more details call our technical service

#### Corrosion Resistance \*

**CuSn8** has a good resistance to seawater, different agents and industrial atmosphere and has an excellent resistance to tarnishing.  
Largely insensitive to stress corrosion cracking

#### Relaxation Properties



Relaxation values give an indication about stress relieve of strip under tension for a certain time and temperature.  
Typical test sample thickness is 0.3 – 0.6 mm.

Initial Stress  
80% von  $R_{p0.2}$   
Parallel Rolling Direction

#### Bend Fatigue (at room temperature)

The fatigue strength gives an indication about the resistance to variations in applied tension. It is measured under symmetrical alternating load. The maximum bending load for  $10^7$  load cycles without crack is measured. Dependent on the temper class it is approximately 1/3 of the tensile strength  $R_m$ .

#### Available delivery forms \*

Strips in coils

Traverse-wound coils with drum weights up to 1.5 t

TECSTRIP®\_multicoil up to 2.5 t

Hot-Dip-Tinned strips in thickness range 0.10 up to 1.20 mm

\* For more details call our sales service