

Standard Designation

EN CW453K / UNS C52100

Chemical Composition

Cu	Sn [%]	P [%]	
Balance	7.5 - 8.5	0.01 - 0.4	

Description / Applications

CuSn8 belongs to the copper-tin alloys. CuSn8 combines a high strength and good electrical properties. Applications: components for the electronic industry, connector springs, relays, leaf springs, switches

Physical Properties¹⁾

Density	8.8 g/cm ³	Thermal expansion coefficient	18.5·10 ⁻⁶ /K
Electrical conductivity	7.5 m/Ω·mm ² 13 % IACS ²⁾	Modulus of elasticity	115 GPa ³⁾
Thermal conductivity	50 W/m·K		

¹⁾ Guideline values for soft temper, measured at room temperature

³⁾ 1 GPa = 1 kN/mm²

²⁾ IACS = International Annealed Copper Standard

Processing information

Weldability	good	Stress corrosion cracking	none
Solderability	very good		

Mechanical properties

Temper	Tensile Strength Rm [MPa]	Yield Strength Rp0,2 [MPa]	Elongation A50 [%]	Hardness HV	Bendability ¹⁾			
					90° r/t ²⁾		180° r/t ²⁾	
					GW ³⁾	BW ⁴⁾	GW ³⁾	BW ⁴⁾
R370/H90	370 - 450	max. 300	min. 50	90 - 120	0	0	0	0
R450/H135	450 - 550	min. 280	min. 20	135 - 175	0	0	0	0,5
R540/H170	540 - 630	min. 460	min. 13	170 - 200	0	0,5	0,5	1
R600/H190	600 - 690	min. 530	min. 5	190 - 220	0	1,5	1	2
R660/H210	660 - 750	min. 620	min. 3	210 - 240	1	2	1	2,5
R740/H230	740 - 830	min. 700	min. 2	230-260	1	2	1	3
R810/H240	min. 810	min. 770	-	min. 240	1	-	1,5	-

¹⁾ The r/t values are valid for a strip thickness up to 0.6 mm (without crack). The data refer to rolled-to-temper material and a width of the bending area of 5 mm.

V-shape bend test according to ISO 7438

²⁾ r = inner radius, t = thickness

³⁾ GW = good way

⁴⁾ BW = bad way

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