

CuSn8 HP

HP high performance

Standard Designation

EN CW453K / UNS C52100

Chemical Composition

Cu	Sn [%]	P [%]	
Balance	8	0.1	

Description / Applications

CuSn8 HP belongs to the copper-tin alloys. CuSn8 HP combines a high strength and good electrical properties. CuSn8 HP has elevated bending properties because of its fine-grained microstructure.

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 (maximum strip thickness 0.4 mm)

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⁾
R685	685 - 785	min. 580	min. 15	-	0,5	1	1	1,5
R785	min. 785	min. 700	min. 10	-	0,5	1,5	1	3
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

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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