

CuSn10

Standard Designation

EN not standardised /UNS C52400

Chemical Composition

Cu	Sn [%]	P [%]	
Balance	10	0.1	

Description / Applications

CuSn10 belongs to the copper-tin alloys. CuSn10 is the material with the highest strength in the group of phosphor bronzes. Applications: components for the electronic industry, connector springs, relay springs, leaf springs

Physical Properties¹⁾

Density	8.75 g/cm ³	Thermal expansion coefficient	18.4·10 ⁻⁶ /K
Electrical conductivity	6.4 m/Ω·mm ² 11 % IACS ²⁾	Modulus of elasticity	110 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⁾
R400/H120	400 - 500	min. 200	min. 55	120 - 150	0	0	0	0
R480/H140	480 - 560	min. 325	min. 40	140 - 170	0	0	0	0
R550/H170	550 - 650	min. 410	min. 30	170 - 200	0	0.5	0	1
R650/H200	650 - 750	min. 550	min. 18	200 - 230	0.5	1	0.5	2
R740/H220	740 - 830	min. 680	min. 9	220 - 250	0.5	1.5	1	3.5
R790/H235	790 - 890	min. 740	min. 4	235 - 270	1	3	1.5	5
R830/H250	≥ 830	min. 780	min. 2	≥ 250	1	5	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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