CuSn8 HP

KEMPER
DRIVING PROGRESS

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 becasue of its fine-grained microstructure.
Applications: components for the electronic industry, connector springs, relays, leaf springs, switches

Physical Properties[1)]

Density	8.8 g/cm³	Thermal expansion coefficient	$18.5 \cdot 10^{-6}$/K
Electrical conductivity	7.5 m/Ω·mm² 13 % IACS[2)]	Modulus of elasticity	115 GPa[3)]
Thermal conductivity	62 W/m·K		

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

[2)] IACS = International Annealed Copper Standard

[3)] 1 GPa = 1 kN/mm²

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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