CuSn10

KEMPER
DRIVING PROGRESS

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 Properties[1)]

Density	8.75 g/cm³	Thermal expansion coefficient	$18.4 \cdot 10^{-6}$/K
Electrical conductivity	6.4 m/Ω·mm² 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

[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

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

The details in this datasheet are exclusively meant for general information only. They correspond to the state of knowledge at the time of issue and cannot replace the examination by our customers. Liability cannot be derived from the information.

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Gebr. Kemper GmbH + Co KG · Metallwerke · Harkortstr. 5, 57462 Olpe · Tel. 02761 891 0 · Fax. 02761 891 458 · info@kemper-group.com