CuSn6

KEMPER
DRIVING PROGRESS

Standard Designation

EN CW452K / UNS 51900

Chemical Composition

Cu [%]	Sn [%]	P [%]	
Balance	6	0.1	

Description / Applications

CuSn6 belongs to the copper-tin alloys. CuSn6 is the most commonly used bronze alloy for strip material. For current-carrying spring elements it offers an attractive combination of strength, electrical conductivity, formability and thermal stability.
Applications: connectors, contact pins, springs, stamped pieces, parts in the machine and apparatus construction

Physical Properties[1)]

Density	8.8 g/cm³	Thermal expansion coefficient	$18.5 \cdot 10^{-6}$/K
Electrical conductivity	9 m/Ω·mm² 15.5 % IACS[2)]	Modulus of elasticity	115 GPa[3)]
Thermal conductivity	75 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)]
R350/H80	350 - 420	max. 300	min. 45	90 - 120	0	0	0	0
R420/H125	420 - 520	min. 260	min. 17	125 - 165	0	0	0	0
R500/H160	500 - 590	min. 450	min. 8	160 - 190	0	0	0	0.5
R560/H180	560 - 650	min. 500	min. 5	180 - 210	0	0.5	1	1.5
R640/H200	640 - 730	min. 600	min. 3	200 - 230	0.5	1	1.5	2
R720/H220	min. 720	min. 690	-	min. 220	1	2	-	-

[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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