

CuSn3Zn9

Standard Designation

EN CW454K / UNS C42500

Chemical Composition

Cu	Sn [%]	Zn [%]	P [%]
Balance	1.5 - 3.5	7.5 - 10	max. 0.2

Description / Applications

CuSn3Zn9 is a bronze with zinc content . CuSn3Zn9 combines good mechanical and electrical properties in an optimum way.
Applications: stamped parts, connectors

Physical Properties¹⁾

Density	8.9 g/cm ³	Thermal expansion coefficient	18.2·10 ⁻⁶ /K
Electrical conductivity	11,5 m/Ω·mm ² 20 % IACS ²⁾	Modulus of elasticity	118 GPa ³⁾
Thermal conductivity	84 W/m·K		

¹⁾ Guideline values for soft temper, measured at room temperature³⁾ 1 GPa = 1 kN/mm²²⁾ IACS = International Annealed Copper Standard

Processing information

Weldability	good	Stress corrosion cracking	none
Solderability	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⁾
R320/H80	320 - 380	max. 230	min. 25	80 - 110	0	0	0	0
R380/H110	380 - 430	min. 200	min. 16	110 - 140	0	0	0	0
R430/H140	430 - 520	min. 330	min. 6	140 - 170	0	0	0	0
R510/H160	510 - 600	min. 430	min. 3	160 - 190	0	0,5	1	1
R580/H180	580 - 690	min. 520	-	180 - 210	0	3	1	5
R660/H200	min. 660	min. 610	-	min. 200	0	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 = thickness³⁾ GW = good way⁴⁾ BW = bad way

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