CuSn3Zn9

Standard Designation

EN CW454K / UNS C42500

Chemical Composition

Cu	Sn [%]	Zn [%]	
Balance	3	9	

Description / Applications

CuSn3Zn9 is a bronze with zinc content. CuSn3Zn9 is characterized by a favorable combination of very good cold formability with strength and hardness. This alloy possesses good corrosion resistance.
Applications: stamped parts, connectors

Physical Properties[1)]

Density	8.75 g/cm³	Thermal expansion coefficient	$18.4 \cdot 10^{-6}$/K
Electrical conductivity	14 m/Ω·mm² 24 % IACS[2)]	Modulus of elasticity	118 GPa[3)]
Thermal conductivity	120 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	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 = 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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