

CuSn4P

Réf. ASTM n°UNS : C51100

Réf. Normes Européennes : CW450K

Indicative Chemical Composition

Cu :	solde
Sn :	4%

TYPICAL APPLICATIONS

Electrical :	Contact springs, connectors, clips,...
Mecanical :	Springs, bellows and diaphragms, clutch discs ...

MECHANICAL CHARACTERISTICS (European Standard : EN 1652)

Temper H :		H 070	H 115	H 150	H 170	H 190
Hardness	HV	70-100	115-155	150-180	170-200	≥ 190

Temper R :		R 290	R 390	R 480	R 540	R 610
Tensile Strength	TS (MPa)	290-390	390-490	480-570	540-630	≥ 610
Yield Strength (1)	YS 0,2 (MPa)	≤ 190	≥ 210	≥ 420	≥ 490	≥ 540
Elongation (2)	E50 (%)	≥ 40	≥ 11	≥ 4	≥ 3	—

BENDING RADIUS FOLLOWING THE THICKNESS RELATED TO TEMPER ABOVE

Radius of Bending (3)	90° Good Way	0 × t	0 × t	0 × t	1 × t	(4)
90° Bad Way	0 × t	0 × t	1 × t	2 × t	(4)	

MECHANICAL CHARACTERISTICS FOLLOWING OLD STANDARDS

TEMPER OF OLD NF STANDARD		0	H 11	H 12	H 13	H 14,1	H 15
Hardness	HV	80-110	105-135	135-165	165-195	175-205	≥ 200
Tensile Strength	TS (MPa)	300-390	360-440	400-490	510-600	560-640	≥ 620
Yield Strength	YS 0,2 (MPa)	≤ 250	≥ 220	≥ 360	≥ 470	≥ 520	≥ 600
Elongation	E50 (%)	40	30	15	5	—	—
Radius of bending (3)	90° Good Way	0 × t	0 × t	0 × t	0,5 × t	1 × t	(4)
	90° Bad Way	0 × t	0 × t	0,5 × t	1,5 × t	(4)	(4)

PHYSICAL CHARACTERISTICS (at 20°C) (5)

Density (Kg/dm ³)	Electrical Conductivity (% IA CS)	Electrical Resistivity (μΩ,cm)	Thermal Conductivity (W/m,K)	Modulus of elasticity (kN/nm ²)	Thermal expansion (10 ⁻⁶ /K)	Melting Temperature (°C)	Modulus of shearing (kN/mm ²)
8,85	20	8,6	86	122	17	960-1070	45

(1) Indicatives values

(2) For Thickness < 2,5 mm

(3) Bending radius is expressed as a function of thickness (t) of the strip

(4) Bending possible to be defined with Griset

(5) values for annealed temper

This document has been prepared for informational purposes and the values are indicative. Our responsibility can not be undertaken without a formal contract review. Our commercial and technical services remain at your service to study the proper matching of your needs in adequacy with physico-mechanical properties of our material.