C51000

TRIANGL EALLOY©

DATA SHEET

Fabricated Metal Products

Alloy Designation	
EN	CuSn5 / CW451K
DIN	CuSn5 DIN EN 1652
UNS	C51000 ASTM B103 B888
JIS	C5102

Chemical Composition		
Cu	Remainder	%
Sn	4.2 - 5.8	%
P	0.03 - 0.4	%

Characteristics

CuSn5 (about 95% Cu–5% Sn) delivers an excellent balance of cold formability, high strength and superior spring/fatigue performance while maintaining good electrical conductivity and corrosion resistance. Its thermal stability is strong—thermal relaxation is negligible at 100 °C and acceptable up to about 120 °C. The alloy also offers good wear and bearing characteristics, low friction, and reliable soldering/brazing performance.

Main Applications
Stamped parts | Connectors | clutch discs | wear guides
Contact springs | friction springs | fuse clip
Ultra high strength spring elements | bellows
Membranes | Switch elements | Fixed contacts

Physical Properties (Reference values at room temperature)

Density	g/cm^3	8.9
Electrical conductivility	IACS%(20°C)*	17
Modulus of elasticity	KN/mm^2	120
Coefficient of thermal expansion	$10^{-6}/K$	17.8
Thermal conductivity	W/(m*K)	83

***value for the lowest temper class**

Mechanical Properties

TEMPER		Tensile Strength Mpa	Yield Strength Mpa	Elongation %	Hardness Hv	Bending Test(90°) GW	Bending Test(90°) BW
R310	O61	310 - 390	max. 250	min. 45	75 - 105	0	0
R400	H02	400 - 505	min. 325	min. 14	120 - 160	0	0
R490	H03	470 - 580	min. 420	min. 8	160 - 190	0	0
R550	H04	525 - 640	min. 510	min. 4	180 - 210	0	1
R630	H06	605 - 720	min. 585	min. 3	200 - 230	0	2
R690	H10	min. 690	min. 675	min. 1	min. 210	2	3

*This leaflet is for general information only and is not subject to revision. No claims can be derived from it unless there is evidence of intent or gross negligence. The data given are no warranty that the product is of a specified quality and they cannot replace expert advice or the customer's own test.

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