

CuSn5

ALLOY NAME

AMW - 32	IS/ISO	DIN CEN/TS 13388	UNS	JIS	KMW
CuSn5	CuSn5	CW451K	C51000	C5102	CuSn5

Chemical Composition	(% By Weight)	Main Applications	
P	0.02 - 0.40 %	Electrical	Miniaturized Connectors, Contact Springs, Relais Springs, Terminals, Switch Parts, Fuse Clips, Electronic Connectors, Resistance Wire, Wire Brushes.
Sn	4.5 - 5.5 %	Fasteners	Lock Washers, Cotter Pins, Fasteners.
Pb	0.02 Max %	Industrial	Bellows, Textile Machinery, Perforated Sheets, Springs, Sleeve Bushing, Clutch Disks.
Zn	0.30 Max %		
Fe	0.10 Max %		
Cu	Remainder %		

Physical Properties Typical values in annealed temper at 20 °C

Density	8.85	g/cm ³
Thermal expansion coefficient -191 .. 16 / 0 .. 300°C	17.8 / 18.1	10-6/K / 10-6/K
Specific heat capacity	0.377	J/(g•K)
Thermal conductivity	96	W/(m•K)
Electrical conductivity (1 MS/m = 1 m/(Ω mm ²))	≥ 10	MS/m
Electrical conductivity (IACS)	≥ 17.2	%
Thermal coefficient of electrical resistance (0 .. 200 °C)	0.10	10-3/K
Modulus of elasticity (1 GPa = 1 kN/mm ²) cold formed	110 / 120	GPa / GPa

Mechanical Properties (EN 1652)

Temper	Tensile Strength Rm MPa (N/mm ²)	Yield Strength Rp0.2 MPa (N/mm ²)	Elongation Minimum A50mm %	Hardness HV
O (SOFT)	310 Min	≤ 250	45 Min	85 Max
HA (Quater Hard)	350 Min	≥ 300	35 Min	110 Min
HB (Half Hard)	495 Min	≥ 400	10 Min	160 Min
HD (Hard)	570 Min	≥ 500	4 Min	180 Min
HE (Extra Hard)	645 Min	≥ 550	2 Min	200 Min
HS (Spring Hard)	690 Min			

Fabrication Properties

Cold formability
Hot formability
Soldering
Brazing
Oxyacetylene welding
Gas shielded arc welding

Excellent
Not Recommended
Excellent
Excellent
Fair
Good