

Wieland-KC1

CuPb1P
free-cutting copper



Material designation	
EN	CuPb1P / CW113C
UNS	C18700

Chemical composition*	
Cu	balance
Pb	1%
P	0,01%

* Reference values in % by weight

Physical properties*		
Electrical conductivity	MS/m	50
	%IACS	86
Thermal conductivity	W/(m·K)	350
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	17
Density	g/cm ³	8.9
Modulus of elasticity	GPa	115

* Reference values at room temperature


Corrosion resistance
Pure copper and high-copper alloys generally exhibit good corrosion resistance due to their precious character and are practically insensitive to stress corrosion cracking.

Product standards	
Rod	EN 12164

Material properties and typical applications
Wieland-KC1 is a free-cutting copper alloy with high electrical conductivity. It is particularly suitable for connectors and other electronic applications.

Types of delivery
The Extruded and Drawn Products Division supplies bars, wire, sections and tubes. Please get in touch with your contact person regarding the available delivery forms, dimensions and tempers.

Fabrication properties		
Forming		Surface treatment
Machinability (CuZn39Pb3 = 100 %)	80 %	Polishing
Capacity for being cold worked	excellent	mechanical good
Capacity for being hot worked	fair	electrolytic good
		Electroplating excellent
Joining		Heat treatment
Resistance welding (butt weld)	fair	Melting range 1079–1080 °C
Inert gas shielded arc welding	fair	Hot working 700–900 °C
Gas welding	fair	Soft annealing 400–500 °C 1–3 h
Hard soldering	good	Thermal stress relieving 200–250 °C 1–3 h
Soft soldering	excellent	

Trademarks

Further information is provided in our brochure on WICONNEC.

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Mechanical properties according to EN

Round rods / polygonal rods											acc. to EN 12164	
Temper	Diameter		Width across flat		Tensile strength	Yield strength		Elongation at rupture			Hardness	
	mm from	mm to	mm from	mm to	R_m MPa min.	$R_{p0,2}$ MPa min. MPa max.		A100 % min.	A11,3 % min.	A % min.	HB min. max.	
M	all		all		as manufactured - without specified mechanical properties							
R250	2	80	2	80	250	180	–	3	5	7	–	–
H080	2	80	2	80	–	–	–	–	–	–	80	110
R300	2	20	2	20	300	240	–	2	3	5	–	–
H095	2	20	2	20	–	–	–	–	–	–	95	130
R360	2	10	2	10	360	300	–	–	–	–	–	–
H120	2	10	2	10	–	–	–	–	–	–	120	–