

Wieland-K41

Machinable high-copper alloy

Wieland-K41 is a high-copper alloy combining high strength with high electrical conductivity and good machining properties. The alloy is precipitation hardenable and, due to its lead content, particularly suitable for machined connector pins in the electrical and electronic industry.

Extruded/drawn products

Chemical composition*		Material designation	
Cu	balance	EN	not standardized
Ni	1%		
Pb	1%	UNS	C19160
P	0.25%	DIN*	not standardized
		BS*	not standardized
		NF*	not standardized

* Reference values in % by weight

* Former national standards

Physical properties*			Fabrication properties		Corrosion resistance*
Electrical conductivity	MS/m	see below	Forming	Machinability	Pure copper and high-copper alloys generally exhibit good corrosion resistance due to their precious character and are practically insensitive to stress corrosion cracking.
	% IACS	see below			
Thermal conductivity	W/(m*K)	245	Capacity for being cold worked	good	
			Capacity for being hot worked	fair	
Density	g/cm ³	8.92	Joining		
			Resistance welding	fair	
Modulus of elasticity	GPa	124	Hard soldering	fair	
			Soft soldering	good	

* Reference values at room temperature

1 GPa = 1 kN/mm²

1 MS/m = 1 m/Ω • mm²

Surface treatment			Product standards
Polishing	mechanical	good	
	electrolytic	good	
Electroplating		excellent	
Heat treatment			
Melting range		1074 - 1080 °C	
Thermal stress relieving		200-250 °C, 4 h	

Mechanical properties (values can be achieved and are a function of size and form)

Reference values	from (soft/extruded)	to (hard)
R _m [MPa]		600
R _{p0.2} [MPa]		550
A5 [%]	on request	5
HB		170
Electr. conductivity [MS/m]		> 32
Electr. conductivity [% IACS]		> 55

Forms and sizes available

Material										
Wieland	EN designation		Outside diameter		Wall thickness		Circumscribing diameter		Diameter / width across flats	
	Brief designation	Number	from	to	from	to	from	to	from	to
K41										
Round tubes										
Drawn sections									1.5	16
Extruded sections										
Sectional tubes										
Round rods									1.5	16
Polygonal wires										
Round wires									1.5	7.5

Further dimensions are possible on request.
All values in mm.

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Wieland

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