

Wieland-K65

CuFe2P
High copper alloy

Extruded and drawn products



Material designation	
EN	CuFe2P, CW107C
UNS	C19400

Chemical composition*	
Cu	balance
Fe	2.25 %
P	0.02 %

* Reference values in % by weight

Physical properties*		
Electrical conductivity	MS/m %IACS	35 60
Thermal conductivity	W/(m·K)	260
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	17,6
Density	g/cm ³	8,91
Modulus of elasticity	GPa	123

* Reference values at room temperature

Corrosion resistance

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

Product standards	
Wire	EN 12166
Tube	EN 12449

Material properties and typical applications

Wieland K65 is a high-copper alloy combining medium electrical and thermal conductivity with medium strength. Good hardening is achieved by finely dispersed iron precipitation in the structure. Because of these properties Wieland- K65 is used for electronic components such as connectors and switches.

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*	
Machinability (CuZn39Pb3 = 100 %)	25%
Capacity for being cold worked	excellent
Capacity for being hot worked	fair*

Joining

Resistance welding (butt weld)	fair*
Inert gas shielded arc welding	excellent*
Gas welding	excellent*
Hard soldering	excellent*
Soft soldering	excellent*

* high temperatures alter the age hardened condition

Surface treatment		
Polishing	mechanical	good
	electrolytic	fair
Electroplating		good

Heat treatment

Melting range	1080–1090 °C
Hot working	800–900 °C
Soft annealing	450–700 °C 1–3 h
Thermal stress relieving	–

Trademarks



Further information is provided in the brochure on Witronic.

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Mechanical properties according to EN

Round wires acc. to EN 12166

Temper	Diameter		Tensile strength	Yield strength		Elongation			Hardness	
	mm from	mm to	R _m MPa min.	R _{p0.2} MPa min.		A100 %	A11.3 %	A %	HV	
						min.	min.	min.	min.	max.
M	all		as manufactured – without specified mechanical properties							
R300	1.5	12	300	110		17	20	23	–	–
H050	1.5	12	–	–	–	–	–	–	50	100
R400	0.3	8	400	350	–	6	7		–	–
H110	1.5	8	–	–	–	–	–	–	110	140
R500	0.1	3	500	450	–	2	–	3	–	–
H150	1.5	3	–	–	–	–	–	–	150	180

Tubes acc. to EN 12449

Temper	Wallthickness mm from	Tensile strength	Yield strength		Elongation	Hardness			
		R _m MPa min.	R _{p0.2} MPa min.		A %	HV		HB	
						min.	max.	min.	max.
M	20	as manufactured – without specified mechanical properties							
R300	10	300	–	250	25	–	–	–	–
H085	10	–	–	–	–	85	115	80	110
R370	5	370	250	–	15	–	–	–	–
H110	5	–	–	–	–	110	140	105	135
R420	5	420	320	–	5	–	–	–	–
H135	5	–	–	–	–	135	–	130	–