

Wieland-K65

CuFe2P | High copper alloy

Material designation

EN	CuFe2P CW107C
UNS	C19400

Chemical composition*

Cu	balance
Fe	2.25 %
P	0.02 %
Pb	< 0.03%

*Richtwerte in Gew. %

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 stresscorrosion 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.

The material is lead free according to RoHS and ELV.

Types of delivery

The BU Extruded Products 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*

Surface treatment

Polishing mechanical	good
elektrolytic	fair
Electroplating	good

Joining

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

*high temperatures change the ageing condition

Heat treatment

Melting range	1.080–1.090 °C
Hot working	800–900 °C
Soft annealing	450–700 °C 1–3 h
Thermal stress relieving	–

Trademarks



Further information is provided in our brochures on WITRONIC.

Wieland-K65

CuFe2P | High copper alloy

Mechanical properties according to EN

Round wires										acc. to EN 12166
Temper	Diameter		Tensile strength R _m	Yield strength R _{p0.2}		Elongation %			Hardness	
	mm		MPa	MPa		A100	A11,3	A	HB	
	von	bis	min.	min.	max.	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	Tensile strength R _m	Yield strength R _{p0.2}		Elongation A	Hardness				
	mm	MPa	MPa		%	HV		HB		
	von	min.	min.	max.	min.	min.	max.	min.	max.	
M	20	as manufactured – without specified mechanical properties								
R300	20	300	–	250	25	–	–	–	–	
H085	10	–	–	–	–	85	115	80	110	
R370	10	370	250	–	15	–	–	–	–	
H110	5	–	–	–	–	110	140	105	135	
R420	5	420	320	–	5	–	–	–	–	
H135	5	–	–	–	–	135	–	130	–	