wieland

Wieland-K80

CuFe0.1P | High copper alloy

Material designation

EN	not standardized
UNS	C19210

Chemical composition*

Cu	balance
Fe	0.1 %
P	0.03 %

**Reference values in % by weight*

Material properties and typical applications

Wieland-K80 is a precipitation hardened alloy. This treatment enables material to achieve high electrical conductivity.
Iron is finely distributed in the structure as precipitations. This results in higher electrical conductivity and better resistance to softening.

Wieland-K80 is used for stranded wires, leadframes and connectors.

Physical properties*

Electrical conductivity	MS/m %IACS	53 91
Thermal conductivity	W/(m·K)	350
Thermal expansion coefficient (0–300 °C)	10^{-6}/K	17
Density	g/cm³	8.89
Moduls of elasticity	GPa	130

**Reference values at room temperature*

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 %)	30 %
Capacity for being cold worked	excellent
Capacity for being hot worked	excellent

Surface treatment

Polishing	
mechanical	excellent
electrolytic	excellent
Electroplating	excellent

Corrosion resistance

Wieland-K80 has good corrosion resistance in natural atmosphere (also marine air) and industrial atmosphere.
In different waters and neutral saline solutions, it exhibits better resistance to abrasive corrosion and pitting than SF-Cu. Wieland-K80 is resistant to stress corrosion cracking.

Joining

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

Heat treatment

Melting range	1,080–1,090 °C
Hot working	800–1,000 °C
Soft annealing	1–3 h

Mechanical properties, refernce values

	Tensile strength R_m MPa	Yield strength $R_{p0,2}$ MPa	Elongation A %	Hardness HBW
Wire	300–500	250–400	2–15	80–150

Product standards

not standardized

Handelsmarken

WITRONIC®

Further information is provided in the brochure on Witronic.

Wieland-Werke AG | Graf-Arco-Straße 36 | 89079 Ulm | Deutschland
info@wieland.com | wieland.com

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