

Wieland-K88

CuCrAgFeTiSi | High copper alloy

Material designation

EN	not standardized
UNS	C18080

Chemical composition*

Cr	0.5 %
Ag	0.2 %
Fe	0.08 %
Ti	0.06 %
Si	0.03 %
Cu	balance

*Reference values in % by weight

Physical properties*

Electrical conductivity	MS/m	46
	%IACS	79
Thermal conductivity	W/(m·K)	320
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	17.6
Density	g/cm ³	8.92
Modulus of elasticity	GPa	140

*Reference values at room temperature

** depending on dimension and shape; see back side of this data sheet)

Corrosion resistance

Wieland-K81 has good corrosion resistance in natural atmosphere (including seawater atmosphere) and industrial atmosphere. In different waters and neutral saline solutions, it exhibits better resistance to corrosion through abrasion and pitting than Cu-DHP. Wieland-K81 is unsusceptible to stress corrosion cracking.

Product standards

not standardized

Material properties and typical applications

Wieland-K88 is a high-copper and precipitation hardened alloy. It provides an optimised combination of good electrical and thermal conductivity as well as a high strength. Another important advantage of this alloy is the good stress relaxation resistance at elevated temperatures up to 200 °C.

This material can be optimised in terms of its conductivity or its strength when applying different hardening methods. Therefore, conductivity and strength should be agreed when ordering.

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	poor

Surface treatment

Polishing mechanical	good
electrolytic	good
Electroplating	good

Joining

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

* high temperatures have an impact on the precipitation hardening

Heat treatment

Melting range	1,080–1,100 °C
Hot working	800–1,000 °C

Handelsmarken



Further information is provided in the brochure on Witronic.