

# Wieland-K16

Cu-ETP1/CW003A

## Material designation

EN	Cu-ETP1/CW003A
UNS	–

## Chemical composition\*

Cu + O	≥ 99.99 %
with oxygen not desoxidized	≤ 140ppm

\*Reference values in % by weight

## Physical properties\*

Electrical conductivity	MS/m	≥58
	%ACS	≥100
Thermal conductivity	W/(m·K)	>385
Thermal expansion coefficient (0–300 °C)	10 <sup>-6</sup> /K	17.7
Density	g/cm <sup>3</sup>	8.93
Modulus of elasticity	GPa	127

\*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 13602
Section	

## Material properties and typical applications

**Wieland-K16** is a copper with a low oxygen content. It exhibits good electrical and thermal conductivity. Due to the oxygen content its use at an elevated temperature in a reducing atmosphere is critical, especially if a hydrogen-containing atmosphere (hydrogen embrittlement) is concerned. This means there are certain restrictions during annealing as well as welding and soldering. Main applications are within the superconductor technology.

This material is more pure than C11000. RRR values (293K/4,2K) ≥ 300 can be achieved.

## 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 temps.

## Fabrication properties

### Forming

Machinability (CuZn39Pb3 = 100 %)	20 %
Capacity for being cold worked	excellent
Capacity for being hot worked	fair

### Surface treatment

Polishing mechanical	good
electrolytic	excellent
Electroplating	excellent

## Joining

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

## Heat treatment

Melting range	1083 °C
Hot working	750–900 °C
Soft annealing	250–500 °C 1–3 h
Thermal stress relieving	150–200 °C 1–3 h

## Handelsmarken

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Further information is provided in the brochure on RESISTAN.