

Wieland-K10 Copper Cu-OFE

Extruded/drawn products

Wieland-K10 is a very pure, oxygen-free copper with high electrical and thermal conductivity. The material shows excellent adherence of the oxide skin. It is resistant to heat treatment in reducing atmosphere. Because of its high degree of purity Wieland-K10 is suitable for high-vacuum applications. Further applications are electronic tubes or semiconductor parts (EN 13604).

Chemical composition*

Cu	≥99.99 %
oxygen-free	
non-deoxidized	
* Reference values in % by weight	

Material designation

EN	Cu-OFE, CW009A
UNS	C10100
DIN*	not standardized
BS*	C110
NF*	Cu-c2

* Former national standards

Physical properties*

Electrical conductivity	MS/m	≥58,6
	% IACS	≥101
Thermal conductivity	W/(m*K)	>394
Thermal expansion coefficient (0-300°C)	10 ⁻⁶ /K	17,7
Density	g/cm ³	8,94
Modulus of elasticity	GPa	127

* Reference values at room temperature
1 GPa = 1 kN/mm²
1 MS/m = 1 m/Ω • mm²

Fabrication properties

Forming	
Machinability	20%
(CuZn39Pb3 = 100 %)	
Capacity for being cold worked	excellent
Capacity for being hot worked	fair
Joining	
Resistance welding	good
Inert gas shielded arc welding	excellent
Hard soldering	excellent
Soft soldering	excellent

Corrosion resistance

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

Surface treatment

Polishing	mechanical	good
	electrolytic	excellent
Electroplating		excellent

Heat treatment

Melting point	1083°C liquidus
Hot working	750-900°C
Soft annealing	250-500°C, 1-3 h
Thermal stress-relieving	150-200°C, 1-3 h

Product standards

Rod	EN 13604
refers to	
Wire	EN 13601
Section	EN 13601
Hollow rod	EN 13605
Tube	EN 13600

Mechanical properties (values can be achieved and are a function of size and form)

Reference values	from (soft)	to (hard)
R _m [MPa]	230	380
R _{p0.2} [MPa]	70	350
A ₅ [%]	50	3
HB	50	110

Forms and sizes available

Material										
Wieland	EN designation		Outside diameter		Wall thickness		Circumscribing diameter		Diameter / width across flats	
	Brief designation	Number	from	to	from	to	from*	to	from	to
K10	Cu-OFE	CW009A	6	300	0.3	20				
Round tubes										
Drawn sections							2.5	150		
Extruded sections								150		
Sectional tubes								230		
Round and polygonal rods									2	250
Round wires									0.3	
Polygonal Wires										

Wieland - K10

All values in mm

* Depending on the form, cross-sections in the lower size range are also available as wire.

Wieland

Wieland-Werke AG

89070 Ulm

Germany

Telephone:

+49 (0) 731 944 - 0

Telefax:

+49 (0) 731 944 - 28 79

info@wieland.de

www.wieland.de

This leaflet is for your general information only and is not subject to revision. No claims can be derived from it unless there is evidence of intent or gross negligence. The data given are no warranty that the product is of a specified quality and they cannot replace expert advice or the customer's own tests.

0405

ZMT/Wi