

## Wieland-K88 High-copper alloy

## Extruded/drawn products

**Wieland-K88** is a high-copper alloy developed jointly by Wieland-Werke AG and Olin Brass. This precipitation hardened alloy provides design engineers with a unique combination of high electrical and thermal conductivity, good strength, excellent cold working properties and very good stress relaxation resistance at elevated temperatures up to 200°C.

Chemical composition*		Material designation	
Cr	0.5%	Olin Brass	Alloy C
Ag	0.1%	DIN	not standardized
Fe	0.08%	EN	not standardized
Ti	0.06%	UNS	C 18080
Si	0.03%		
Cu	balance		

\* Reference values in % by weight

\* Former national standards

Physical properties*			Fabrication properties		Corrosion resistance*
Electrical conductivity	MS/m	46	<b>Forming</b>		Wieland-K88 is resistant to pure water vapour, non oxidizing acids and alkaline solutions as well as neutral saline solutions. The material is insensitive to stress corrosion cracking.
	% IACS	80	Machinability	poor	
Thermal conductivity	W/(m*K)	320	Capacity for being cold worked	excellent	
			Capacity for being hot worked	not suitable	
Density	g/cm <sup>3</sup>	8.92	<b>Joining</b>		
Modulus of elasticity	GPa	140	Resistance welding	fair	
			Inert gas shielded arc welding	excellent	
			Hard soldering	good	
			Soft soldering	good	

\* Reference values at room temperature

1 GPa = 1 kN/mm<sup>2</sup>

1 MS/m = 1 m/Ω • mm<sup>2</sup>

Surface treatment			Product standards
Polishing	mechanical	good	none
	electrolytic	good	
Electroplating		good	
<b>Heat treatment</b>			
Melting range		1080 - 1100 °C	
Hot working		800 - 1000°C	
Soft annealing		600 - 800°C	
Thermal stress-relieving		200 - 300°C	

### Mechanical properties (indicated for precipitation hardened 2 mm wire)

Reference values	soft	hard
R <sub>m</sub> [MPa]	415	610
R <sub>p0.2</sub> [MPa]	335	580
A <sub>100</sub> [%]	21	2
HV	120	165

## 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
K88	~CuCrAgFeTiSi	not stand.								
Round tubes										
Drawn sections										
Extruded sections										
Sectional tubes										
Round and polygonal rods									2	10
Round wires									0.3	4.5
Polygonal wires									2	

All values in mm

**Wieland - K88**

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