

Wieland-K44

CuNi1Pb0.6P | High-performance copper alloy

Material designation

UNS	C19140
	C19150

Chemical composition*

Cu	balance
Ni	1 %
Pb	0.6 %
P	0.25 %

*Reference values in % by weight

Physical properties*

Electrical conductivity	MS/m	> 30
	%IACS	> 55
Thermal conductivity	W/(m·K)	245
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	18.0
Density	g/cm ³	8.92
Modulus of elasticity	GPa	124

*Reference values at room temperature

Corrosion resistance

Low-alloyed copper is generally quite resistant against organic substances as well as neutral or alkaline compounds.

Wieland-K44 is resistant to stress corrosion cracking in solution-annealed condition as well as in cold-worked condition.

Product standards

no EN standard

Material properties and typical applications

Wieland-K44 is a precipitation-hardening alloy which combines high mechanical strength with high-electrical conductivity. After age hardening **Wieland-K44** shows excellent relaxation resistance at elevated temperatures.

Due to its reduced lead content **Wieland-K44** is primarily used for the production of electronic components such as pin and socket contacts by cold heading. Among other alloys **Wieland-K44** is sold under the brand name **WICONNEC** which contains special products for the connector industry.

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 %)	70 %
Capacity for being cold worked	good
Capacity for being hot worked	fair

Surface treatment

Polishing	
mechanical	good
electrolytic	good
Electroplating	excellent

Joining

Resistance welding (butt weld)	fair*
Age hardening	fair*
Gas welding	fair*
Hard soldering	fair*
Soft soldering	good*

* high temperatures can change material properties

Heat treatment

Melting range	1,074–1,080 °C
Hot working	700–900 °C
Soft annealing	upon request
Thermal stress relieving	upon request

Trademarks

Further information is provided in the brochure on WICONNEC.