

# 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 <sup>-6</sup> /K	18.0
Density	g/cm <sup>3</sup>	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.