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: > 30 MS/m, > 55 %IACS
- Thermal conductivity: 245 W/(m·K)
- Thermal expansion coefficient: 10⁻⁶/K (0–300 °C)
- Density: 8.92 g/cm³
- Modulus of elasticity: 124 GPa
*Reference values at room temperature

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: 70 %
  - Capacity for being cold worked: good
  - Capacity for being hot worked: fair

- Surface treatment:
  - Polishing: 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

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

Trademarks
Further information is provided in the brochure on WICONNEC.