Wieland-K81
CuSn0,15 | High copper alloy

Material designation
EN CuSn0,15
CW117C
UNS C14415

Chemical composition*
Cu balance
Sn 0.1 %
*Reference values in % by weight

Physical properties*
Electrical conductivity MS/m 45
%IACS 78
Thermal conductivity W/(m·K) 300
Thermal expansion coefficient (0–300 °C) 10⁻⁶/K 18.0
Density g/cm³ 8.93
Modulus of elasticity GPa 130
*Reference values at room temperature

Material properties and typical applications
Wieland-K81 is a high-copper alloy exhibiting high electrical and thermal conductivity as well as good mechanical strength. Due to these properties the material is used for current-carrying stranded wires and cables if the strength has to be higher than that of copper.

Softening-resistant for 10 minutes at 370 °C.

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 %) 20 %
Capacity for being cold worked excellent
Capacity for being hot worked excellent

Joining
Resistance welding (butt weld) fair
Inert gas shielded arc welding excellent
Gas welding excellent
Hard soldering excellent
Soft soldering excellent

Surface treatment
Polishing mechanical and electrolytic good
Electroplating good

Heat treatment
Melting range 1,065–1,075 °C
Hot working 800–950 °C
Soft annealing 250–500 °C 1–3 h
Thermal stress relieving 150–200 °C 1–3 h

Corrosion resistance
Wieland-K81 has good corrosion resistance in natural atmosphere (including seawater atmosphere) and industrial atmosphere. In different waters and neutral saline solutions, it exhibits better resistance to corrosion through abrasion and pitting than Cu-DHP. Wieland-K81 is unsusceptible to stress corrosion cracking.

Product standards
not standardized